THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MWD MEETING AGENDA

RP&AM Committee
Vacant, Chair
G. Peterson, Vice Chair
M. Camacho
L. Dick
D. Erdman
A. Kassakhian
C. Kurtz
R. Record
T. Smith
N. Sutley

Real Property and Asset Management Committee

Meeting with Board of Directors *

June 13, 2022

12:30 p.m.

Monday, June 13, 2022 Meeting Schedule
09:30 am - F&I
10:30 am - E&O
12:00 pm - Break
12:30 pm - RP&AM
01:00 pm - C&L
02:00 pm - WP&S

Teleconference meetings will continue until further notice. Live streaming is available for all board and committee meetings on mwdh2o.com (Click Here)

A listen only phone line is also available at 1-877-853-5257; enter meeting ID: 831 5177 2466. Members of the public may present their comments to the Board on matters within their jurisdiction as listed on the agenda via teleconference only. To participate call (833) 548-0276 and enter meeting ID: 815 2066 4276.

MWD Headquarters Building • 700 N. Alameda Street • Los Angeles, CA 90012

* The Metropolitan Water District's meeting of this Committee is noticed as a joint committee meeting with the Board of Directors for the purpose of compliance with the Brown Act. Members of the Board who are not assigned to this Committee may participate as members of the Board, whether or not a quorum of the Board is present. In order to preserve the function of the committee as advisory to the Board, members of the Board who are not assigned to this Committee will not vote on matters before this Committee.

1. Opportunity for members of the public to address the committee on matters within the committee's jurisdiction (As required by Gov. Code Section 54954.3(a))

**** CONSENT CALENDAR ITEMS -- ACTION ****

2. CONSENT CALENDAR OTHER ITEMS - ACTION

A. Approval of the Minutes of the Meeting of the Real Property and Asset Management Committee held May 9, 2022 **21-1218**

Attachments: 06142022 RPAM 2A Minutes

3. CONSENT CALENDAR ITEMS - ACTION

Zoom Online

7-11 Review and consider the U.S. Bureau of Land Management's Final Environmental Impact Statement certified to satisfy CEQA and take related CEQA actions, and authorize the General Manager to grant a permanent easement for transmission line purposes to Delaney Colorado River Transmission, LLC on Metropolitan-owned property near Blythe, California in the county of Riverside **21-1201**

Attachments: 06142022 RPAM 7-11 B-L
06132022 RPAM 7-11 Presentation

7-12 Review and consider the Lead Agency's adopted Mitigated Negative Declaration and take related CEQA actions, and adopt a resolution for Calleguas Municipal Water District Annexation No. 104 to Calleguas and Metropolitan **21-1202**

Attachments: 06142022 RPAM 7-12 B-L
06132022 RPAM 7-12 Presentation

7-13 Adopt resolution for Calleguas Annexation No. 106 to Calleguas Municipal Water District and Metropolitan; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-1203**

Attachments: 06142022 RPAM 7-13 B-L
06132022 RPAM 7-13 Presentation

**** END OF CONSENT CALENDAR ITEMS ****

4. OTHER BOARD ITEMS - ACTION

NONE

5. BOARD INFORMATION ITEMS

NONE

6. COMMITTEE ITEMS

NONE

7. MANAGEMENT REPORTS

a. Real Property Group Manager's Report **21-1219**

Attachments: 06132022 RPAM 7a Presentation

8. FOLLOW-UP ITEMS

NONE

9. FUTURE AGENDA ITEMS

10. ADJOURNMENT

NOTE: This committee reviews items and makes a recommendation for final action to the full Board of Directors. Final action will be taken by the Board of Directors. Agendas for the meeting of the Board of Directors may be obtained from the Board Executive Secretary. This committee will not take any final action that is binding on the Board, even when a quorum of the Board is present.

Writings relating to open session agenda items distributed to Directors less than 72 hours prior to a regular meeting are available for public inspection at Metropolitan's Headquarters Building and on Metropolitan's Web site http://www.mwdh2o.com.

Requests for a disability related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting should be made to the Board Executive Secretary in advance of the meeting to ensure availability of the requested service or accommodation.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MINUTES

REAL PROPERTY AND ASSET MANAGEMENT COMMITTEE

May 9, 2022

Vice Chair Peterson called the teleconference meeting to order at 12:46 p.m.

Committee Members present: Vice Chair Peterson, Directors Camacho, Dick, Erdman, Record and Smith.

Members absent: Directors Kassakhian, Kurtz and Sutley

Other Board Members present: Chairwoman Gray, Directors Abdo, Ackerman, Atwater, Blois, DeJesus, Dennstedt, Faessel, Fellow, Goldberg, Jung, Lefevre, McCoy, Miller, Morris and Ramos.

Committee Staff present: Chapman, Hagekhalil, Otake, Tucker, Upadhyay and Holland

1. OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE COMMITTEE ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION

None

CONSENT CALENDAR ITEMS — ACTION

2. CONSENT CALENDAR OTHER ITEMS – ACTION

A. Approval of the Minutes of the Meeting of the Real Property and Asset Management Committee held April 11, 2022.

3. CONSENT CALENDAR ITEMS – ACTION

7-8 Subject: Authorize granting a new five-year license agreement to West Air Gases and Equipment, Inc., for vehicle parking on Metropolitan fee-owned property in the city of Anaheim, identified as Orange County Assessor Parcel No. 344-221-01; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Motion: Authorize granting a five-year license agreement to West Air Gases and Equipment, Inc., for employee vehicle parking.

No presentation was given, Director Record made a motion, seconded by Director Erdman to approve the consent calendar consisting of items 2A and 7-8.

The vote was:

Ayes: Directors Camacho, Dick, Erdman, Peterson, Record and Smith

Noes: None

Abstentions: None

Absent: Kassakhian, Kurtz and Sutley

The motion for items 2A and 7-8 passed by a vote of 6 ayes, 0 noes,0 abstention, and 3 absent.

7-10 Subject: Authorize the General Manager to update the landlord termination provision for leases with Coxco, LLC and HayDay Farms Venture, LLC; the General Manager has previously determined that the proposed action is exempt or otherwise not subject to CEQA [Conference with real property negotiators; properties identified as Property Group 1: Riverside County Assessor Parcel Nos. 821-100-018; 821-100-019; 821-150-018; 821-160-012; 821-160-013; 824-200-048; 863-140-002; 863-150-001; 863-170-005; 863-170-006; 863-180-003; 863-180-004; 863-180-005; 863-220-005; 866-040-004; 866-040-005; 866-040-007; 866-040-008; 866-080-001; 866-080-002; 866-080-003; 866-080-005; 866-080-012; 866-090-002; 866-090-009; 866-090-010; 866-090-013; 866-090-014; 872-150-005; 872-160-006; 872-160-007; 872-160-008; 872-160-009; 872-180-006; 872-180-009; 878-020-004; 878-020-005; 878-020-008; 878-030-009; 878-030-016; 878-091-001; 878-091-005; 878-091-006; 821-140-002; 821-140-007; 830-110-001 (a portion of); 830-110-002; 830-120-009; 836-031-007; 836-031-008; 863-120-005; 863-170-003; 863-170-009; 863-180-001 (a portion of); 863-180-002; 879-130-010; 879-130-011; Property Group 2: Riverside County Assessor Parcel Nos. 878-081-001; 878-081-002; 878-081-004; 878-081-005; 878-081-006; 878-081-012; 878-082-001; 878-082-007; 878-111-017; 878-112-014; 878-112-015; 878-120-013; 878-120-015; 878-130-010; 878-130-011; 878-161-014; 878-161-015; 878-162-002; 878-162-003; 878-191-004; 878-192-001; 878-192-002; 878-193-007; 878-193-011; 878-193-013; 878-201-001; 878-220-005; 878-220-014; 878-220-015; 878-230-006; 878-230-007; 878-230-008; 878-240-021; 879-210-026; 879-240-007; 879-240-029; 879-240-032; 879-240-033; 879-261-004; 879-262-005; 879-262-011; 879-262-014; 866-130-001; 866-130-002; 866-130-003; 866-130-004; 866-210-006; 866-210-010; 866-240-004; 866-240-009; 866-250-008; 866-250-009; 866-250-011; 869-130-001; 869-270-006; 869-270-010; 869-291-002; 869-291-003; 869-291-005; 869-291-009; 869-292-001; 869-292-002; 869-292-003; 872-080-006; 872-080-007; 872-080-008; 872-090-005; 872-090-006; 872-090-007; 872-090-008; 872-100-001; 872-340-014; 872-340-018; 872-352-003; 872-352-010; 872-352-017; 872-360-001; 872-360-003; 872-370-002; 872-370-008; 872-370-013; 872-370-014; 872-370-016; 872-370-018; 875-021-001; 875-021-002; 875-021-006; 875-021-007; 875-021-008; 875-021-013; 875-021-014; 875-022-003; 875-022-004; 875-022-005; 875-022-006; 875-022-012; 875-030-012; 875-030-014; 875-030-027; 875-030-028; 875-040-006; 875-071-001; 875-071-002; 875-071-003; 875-071-004; 875-071-005; 875-

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Motion: Authorize the General Manager to update the landlord termination without cause provision by extending the written notice to three years for leases with Coxco, LLC and HayDay Farms Venture, LLC.

Presentation was given, Director Dick made a motion, seconded by Director Erdman to approve item 7-10.

After a staff request for clarification, Vice Chair Peterson confirmed that the motion was to authorize Real Property Negotiators for Metropolitan to update the lease termination time or lease termination provisions in the lease agreement, and the voting commenced.

The vote was:

Ayes:	Directors Camacho, Dick, Erdman, Peterson, Record, Smith and Sutley
Noes:	None
Abstentions:	None
Absent:	Kassakhian, Kurtz and Sutley

The motion for item 7-10 passed by a vote of 6 ayes, 0 noes,0 abstention, and 3 absent.

Item 7-10 passed by a vote of 6 ayes, 0 noes, 0 abstention, and 3 absent.

END OF CONSENT CALENDAR ITEMS

4. OTHER BOARD ITEMS – ACTION

None

5. BOARD INFORMATION ITEMS

None

6. COMMITTEE ITEMS

None

7. MANAGEMENT REPORT

a. Subject: Real Property Group Manager's Report

Presented by: Octavia Tucker, Section Manager, Real Property Group

Ms. Tucker informed the committee that staff will provide a Desert Housing update in July; and reported on Desert Housing activities.

Lastly, Ms. Tucker informed the committee that there will be a meeting in June.

The following Director provided a comment or asked a question

1. Director Dick

8. FOLLOW-UP ITEMS

None

9. FUTURE AGENDA ITEMS

1. Director Smith requested a high-level report on the value of property leases and income from potential sales. Also, if income is included in the budget.

Next meeting will be held on June 13, 2022

Meeting adjourned at 1:07 p.m.

Glen Peterson
Vice Chair

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- **Board of Directors**
  Real Property and Asset Management Committee

6/14/2022 Board Meeting

7-11

Subject

Review and consider the U.S. Bureau of Land Management's Final Environmental Impact Statement certified to satisfy CEQA and take related CEQA actions, and authorize the General Manager to grant a permanent easement for transmission line purposes to Delaney Colorado River Transmission, LLC on Metropolitan-owned property near Blythe, California in the county of Riverside

Executive Summary

This action authorizes the General Manager to grant a permanent easement to Delaney Colorado River Transmission (DCRT) for an above-ground 500kV transmission line traversing Metropolitan fee-owned property in the Palo Verde Valley near Blythe, California, in the county of Riverside.

Staff has determined that the easement, as conditioned, will not damage, delay, hinder, or otherwise obstruct the safe and effective use, operation, or maintenance of Metropolitan lands and facilities for water-related purposes. Board authorization is required because the real property interest being granted exceeds five years.

Details

Background

Metropolitan owns approximately 30,000 acres of fee-owned property in the Palo Verde Valley region. The proposed 22.90-acre easement area is located approximately five miles south of Blythe and four miles west of the Colorado River **(Attachment 1)**. The easement, as conditioned, would provide for a permanent right-of-way to construct, operate, maintain, alter, repair, replace, inspect, relocate or remove an above-ground 500 kilovolt (kV) electric transmission line.

The transmission line is part of Ten West Link, a planned energy infrastructure project owned by DCRT, that was recently approved by the California Public Utilities Commission (CPUC). On November 5, 2021, the Commission granted DCRT a certificate of public convenience and necessity for Ten West Link, which includes the right to take condemnation action for the acquisition of property rights if the action is required. DCRT is a joint venture between the Starwood Energy Group Global (Starwood Energy) and Atlantica Yield PLC, with Starwood Energy serving as managing member of DCRT.

Ten West Link will span 125 continuous miles between California and Arizona, beginning at the Arizona Public Service Company Delaney Substation near Tonopah, Arizona, and terminating at the Southern California Edison (SCE) Colorado River Substation near Blythe, California. DCRT asserts the project will have a conductor capacity to transmit 3,200 megawatts, thereby providing improved system reliability and interconnection capability for new energy projects in the Desert Southwest region. Its 21.5-mile California route will run through the central Palo Verde Valley and parallel the existing SCE-owned Colorado River 500kV transmission line along Metropolitan's fee property.

The proposed easement area is encumbered with a long-term lease to HayDay Farms Venture, LLC, and the tenant will continue its existing farming operations beneath the proposed transmission line. The transmission line will also traverse one of the remaining two parcels Metropolitan currently has under escrow to purchase from Cox Family Farms, LLC (Cox). Should this sale be consummated, agreement terms between Cox and DCRT will

match the terms of Metropolitan's agreement for this proposed easement. The purchase price paid by Metropolitan to Cox will be discounted as a result of this new easement encumbrance.

Proposed Easement

The easement area totals 22.90 acres and is 200 feet wide, 0.91 miles long, and contains defined access rights totaling 1.56 acres. The easement runs in an east-west direction and is located on two non-contiguous parcels that are approximately two miles apart **(Attachment 2)**. The eastern parcel comprises 13.67 acres, is 0.52 miles long, and is accessible via Defrain Boulevard on the east and by a Metropolitan-owned access road to the west. The western parcel's easement area totals 9.23 acres and is 0.39 miles long. It is accessible on the east by a Metropolitan-owned access road and by Neighbours Boulevard on the west.

When completed, the easement area will contain a 500kV transmission line with appurtenances and appendages, including foundations, towers, supporting structures, and communications equipment to support the main transmission line use.

To ensure the use of the easement area by DCRT and its successors would not hinder or otherwise obstruct the safe and effective use, operation, and maintenance of Metropolitan's lands, staff has negotiated the following key provisions for the Board's consideration:

- A paramount rights provision that protects Metropolitan's use of its lands for water-related purposes, including water conservation, augmentation of water supply, forbearing and fallowing activities, local agricultural production, and other water quality, supply, management, conveyance, and treatment-related activities now and in the future.
- DCRT will defend, indemnify and hold harmless Metropolitan, its directors, officers, employees, agents, and tenants from and against any liability or expenses arising from the use of the transmission easement.
- DCRT shall have the right to sell, assign, collaterally assign, mortgage, encumber, lien, transfer, lease and/or convey to others, and each other, the transmission line easement.
- Any modifications to the easement area and prescribed uses will be subject to Metropolitan's review and approval.
- All plans for installation and construction or reconstruction shall be reviewed and approved in advance by Metropolitan.
- DCRT shall, at its sole cost and expense, keep the easement area that is not farmable free of noxious weeds and trash.

Fair market value for the permanent easement is $316,000 and is based on a recent third-party appraisal. Metropolitan will also receive a one-time processing fee of $8,500.

Policy

Metropolitan Water District Administrative Code Section 8230: Grants of Real Property Interests

Metropolitan Water District Administrative Code Section 8231: Appraisal of Real Property Interests

Metropolitan Water District Administrative Code Section 8232: Terms and Conditions of Management

By Minute Item 48766, dated August 16, 2011, the Board adopted fair market value policies for managing Metropolitan's real property assets.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1

Pursuant to the provisions of CEQA and the State CEQA Guidelines, the U.S. Bureau of Land Management (BLM), acting as the federal Lead Agency, certified a Final Environmental Impact Statement on November 21, 2019, for the Ten West Link 500 Kilovolt Transmission Line Project and Resources Management Plan Amendment (Final EIS). On November 4, 2021, pursuant to an agreement between BLM and the CPUC and State CEQA Guidelines Section 15225(a), the CPUC, acting as the state Lead Agency for the Project, certified that the Final EIS met the requirements of CEQA and relied on it for approval of the Project. Metropolitan, acting

as a Responsible Agency under CEQA, is required to certify that it has reviewed and considered the information in the Final EIS, and adopt the Lead Agency's findings, and mitigation measures, relevant to Metropolitan's approval of the proposed easement. See **Attachment 3** for the Final EIS, **Attachment 4** for the Final EIS Appendices (includes 1C – CEQA and Mitigation Monitoring Reporting Program), and **Attachment 5** for the CPUC CEQA decision.

CEQA determination for Option #2:

None required

Board Options

Option #1

Review and consider the Bureau of Land Management's Final Environmental Impact Statement certified to satisfy CEQA and take related CEQA actions; and authorize the General Manager to grant a permanent transmission line easement to Delaney Colorado River Transmission, LLC.

Fiscal Impact: Metropolitan will receive positive revenue in the form of a one-time processing fee of $8,500 and $316,000 as the fair market value for the proposed easement.
Business Analysis: The granting of the easement is mutually compatible with Metropolitan's use of the subject property. The easement, as conditioned, does not hinder or otherwise interfere with the activities and objectives for Metropolitan's property in the Palo Verde Valley and supports a utility company in conducting their mission.

Option #2

Do not authorize the permanent easement.
Fiscal Impact: Metropolitan will forego the one-time transaction and conveyance fees of $324,500.
Business Analysis: DCRT will likely use its eminent domain authority to obtain the easement should Metropolitan not grant DCRT the permanent right-of-way and easement.

Staff Recommendation

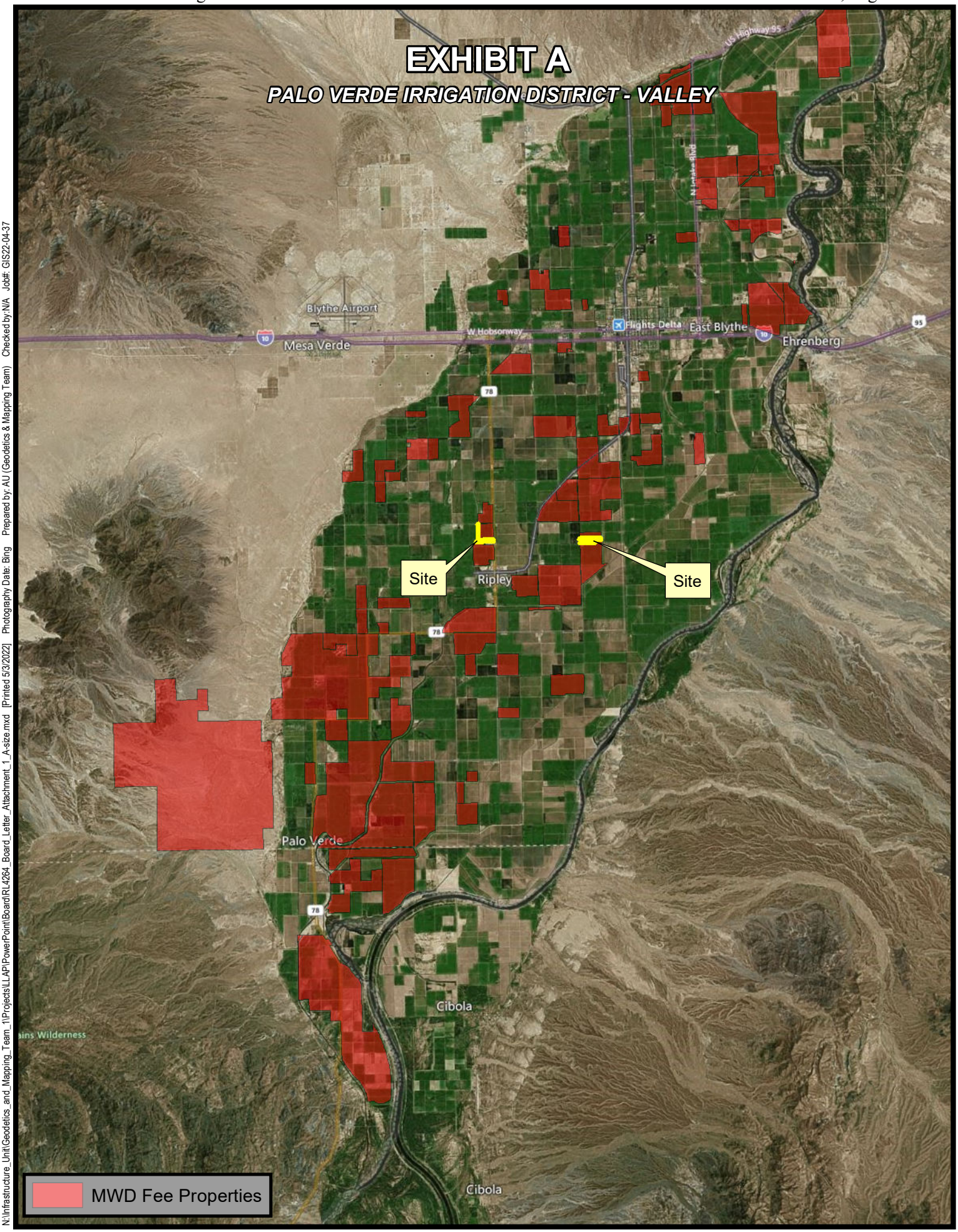
Option # 1

5/26/2022
Lilly L. Shraibati *Date*
Manager, Real Property Group

5/31/2022
Adel Hagekhalil *Date*
General Manager

Attachment 1 – General Location Map
Attachment 2 – Site Map
Attachment 3 – Final EIS
Attachment 4 – Final EIS Appendices (includes 1C – CEQA and Mitigation Monitoring Reporting Program)
Attachment 5 – CPUC CEQA decision

Ref# rpdm12682910



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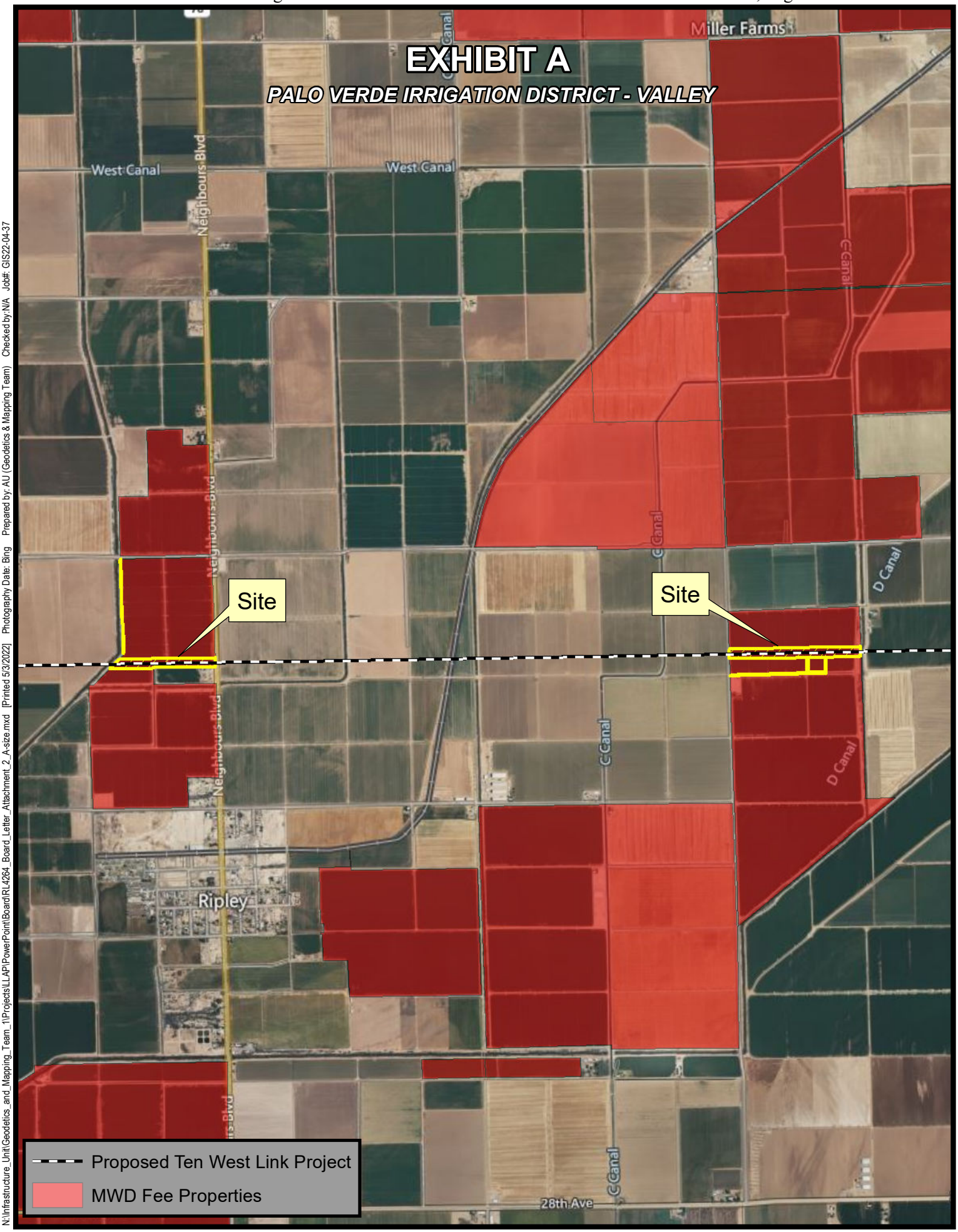

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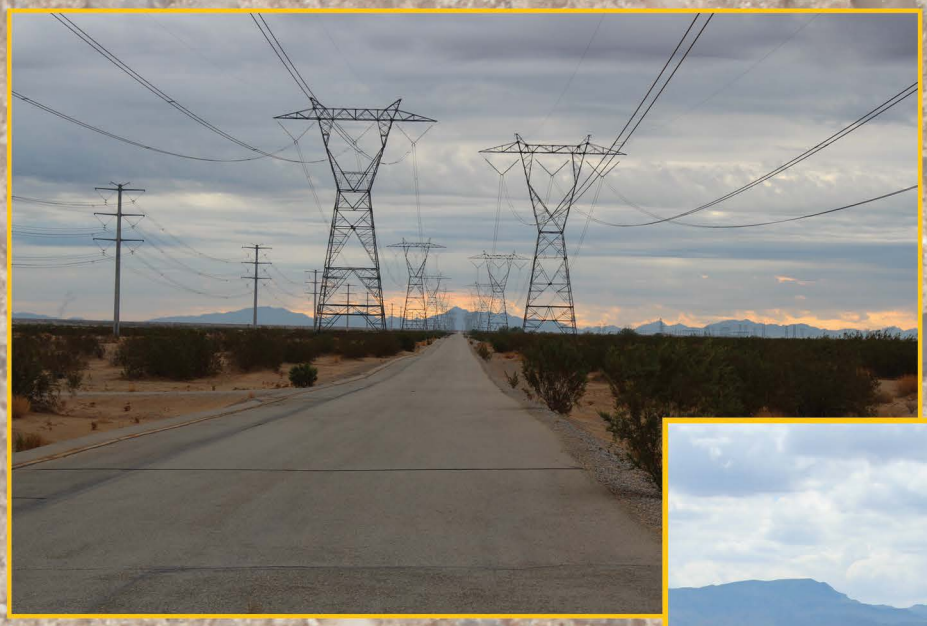
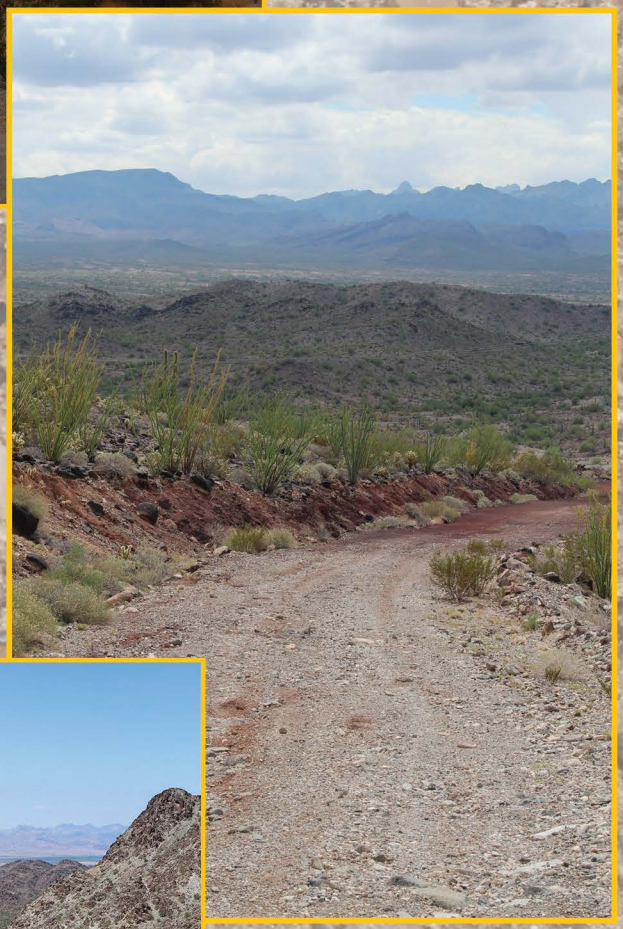
Final Environmental Impact Statement and Proposed Resource Management Plan Amendments for the Ten West Link Transmission Line Project





Estimated Lead Agency Total Costs Associated with Developing and Producing this EIS $5,014,050

DOI-BLM-AZ-C020-2016-0010-EIS
September 2019

TEN WEST LINK TRANSMISSION LINE PROJECT

FINAL ENVIRONMENTAL IMPACT STATEMENT AND

PROPOSED RESOURCE MANAGEMENT PLAN AMENDMENTS

Bureau of Land Management
Arizona State Office
California State Office

September 2019

BLM Estimated Total Cost of Developing and Producing this Document: $5,014,050

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado River District Office
1785 Kiowa Avenue
Lake Havasu City, Arizona 86403

September 2019

Dear Reader:

Enclosed is the Final Environmental Impact Statement (FEIS) and Proposed Resource Management Plan Amendment (RMPA) for the Ten West Link Transmission Line Project (Project). The FEIS/Proposed RMPA was prepared by the Bureau of Land Management (BLM) in consultation with various government agencies and organizations, taking into account public comments received during this planning effort.

The BLM is considering an application by DCR Transmission, LLC, for a right-of-way (ROW) on public lands to construct, operate, maintain, and decommission a 114 mile, 500 kilovolt transmission line between the Delaney Substation in Maricopa County, Arizona, and the Colorado River Substation in Riverside County, California. The FEIS/Proposed RMPA analyzes the potential impacts of authorizing the Project, including amending the BLM's Yuma Field Office RMP and California Desert Conservation Area (CDCA) Plan to allow for its construction.

The Proposed Action and alternatives presented in the FEIS are the same as those presented and analyzed in the Draft EIS released in August 2018. The FEIS addressed public comments on the Draft EIS released in August 2018. The FEIS also analyzes more refined Project engineering and design information provided by the Project proponent, specifically locations and types of transmission structures; and location, size and scope of access roads needed to build and maintain the Project. The discussion of the land use plan amendments considered by the BLM is also clarified in the FEIS.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this Proposed RMPA and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions contained therein. Specifically, the BLM's proposed RMPA decisions would amend the Yuma RMP to allow for consideration of rights of way outside of designated corridors on a case-by-case basis and amend the CDCA to allow for construction of the Project within 0.25 mile of occurrences of the Harwood's eriastrum, a BLM-sensitive plant species.

The FEIS/Proposed RMPA is open for a 30-day protest period beginning the date the U.S. Environmental Protection Agency publishes its Notice of Availability of the FEIS in the *Federal Register*.

The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g. meeting minutes or summaries, correspondence, etc.).

Instructions for filing a protest with the Director of the BLM regarding the FEIS and Proposed RMPAs may be found online at https://www.blm.gov/programs/planning-and-nepa/public-participation/filing-a-plan-protest and at 43 CFR 1610.5-2. All protests must be in writing and mailed to the appropriate address, as set forth below, or submitted electronically through the BLM ePlanning project website. Protests submitted electronically by any means other than the ePlanning project website protest section will be invalid unless a protest is also submitted in hard copy. Protests submitted by fax will also be invalid unless also submitted either through ePlanning project website protest section or in hard copy.

All protests submitted in writing must be mailed to one of the following addresses:

Regular Mail:
Director (210)
Attn: Protest Coordinator
P.O. Box 71383 Washington,
D.C. 20024-1383

Overnight Delivery:
Director (210)
Attn: Protest Coordinator
20 M Street SE, Room
2134LM Washington, D.C.
20003

The BLM Director will render a written decision on each land use plan protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior on each land use plan protest. Responses to land use plan protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions.

Upon resolution of all land use plan protests, the BLM will issue a Record of Decision, which will include information on any further opportunities for public involvement.

Sincerely,

WILLIAM MACK Digitally signed by WILLIAM MACK
Date: 2019.08.23 11:08:55 -07'00'

William Mack, Colorado River District Manager
Bureau of Land Management

Ten West Link Transmission Line Project
Final Environmental Impact Statement and
Proposed Resource Management Plan Amendments

U.S. Department of the Interior
Bureau of Land Management
Arizona State Office
Phoenix, Arizona
September 2019

Lead Agency:	U.S. Department of the Interior, Bureau of Land Management
Type of Action:	( ) Draft (X) Final
Cooperating Agencies:	Bureau of Reclamation; California Public Utilities Commission; Environmental Protection Agency; Department of Defense, Yuma Proving Ground; U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers; Western Area Power Administration; Arizona Game and Fish Department; Arizona State Land Department; Maricopa Association of Governments; La Paz County, Arizona; Town of Quartzsite, Arizona
Project Location:	Maricopa and La Paz Counties, Arizona; Riverside County, California
Responsible Official:	Raymond Suazo, BLM Arizona State Director
For Further Information Contact:	Lane Cowger Project Manager, BLM Arizona State Office One North Central Avenue, Suite 800 Phoenix, AZ 85004 602-417-9612 TenWestLink@blm.gov
Comments must be received by:	30 days after publication in the Federal Register

Abstract

This Final Environmental Impact Statement (EIS) evaluates the anticipated environmental effects of the construction, operation, maintenance, and decommissioning of the Ten West Link Transmission Line Project (Project) proposed by DCR Transmission, LLC. The proposed Project includes construction of a 500-kilovolt electric transmission line and associated infrastructure, from the Delaney Substation near Tonopah, Arizona, to the Colorado River Substation near Blythe, California. The Final EIS analyzes the Proposed Action, four Action Alternative routes, the Agency Preferred Alternative, and a No Action Alternative; and addresses public comments received on the Draft EIS, which was published in August 2018. The Proposed Action is 114.3 miles long and generally follows the existing Devers to Palo Verde transmission line, including a 24.9-mile long crossing of the Kofa National Wildlife Refuge (NWR). The Agency Preferred Alternative is 125.0 miles long, utilizes BLM utility corridors, and does not cross the Kofa NWR. The Proposed Action and all Action Alternatives include proposed amendments to BLM land use plans, specifically the Yuma Field Office Resource Management Plan and the California Desert Conservation Area Plan, to accommodate the Project. Amendment of the Lake Havasu Field Office Resource Management Plan is also considered in some Action Alternatives. Under the No Action Alternative, the BLM would not approve the ROW grant on BLM-administered public lands and no BLM land use plans would be amended.

Executive Summary

EXECUTIVE SUMMARY

ES-1 INTRODUCTION

The Ten West Link Transmission Line Project (the Project) proposed by DCR Transmission, Limited Liability Corporation (DCRT) would consist of a single-circuit, series-compensated, 500 kilovolt (kV) transmission line between the Arizona Public Service (APS) Delaney Substation in Maricopa County, Arizona and the Southern California Edison (SCE) Colorado River Substation in Riverside County, California. The Project would be designed with a conductor capacity to transmit 3,200 megawatts (MW) and provide interconnection capability for new energy projects located in the region.

The Bureau of Land Management (BLM) is the lead Federal agency responsible for preparing this Environmental Impact Statement (EIS) and associated analyses. This EIS also addresses the requirements of the California Environmental Quality Act (CEQA) for use by the California Public Utilities Commission (CPUC) and, as applicable, other California state and local agencies in connection with the Project. The CPUC and eleven other cooperating agencies have participated in the preparation of this EIS, including the Environmental Protection Agency (EPA); Department of Defense, Yuma Proving Ground; Bureau of Reclamation (Reclamation); U.S. Fish and Wildlife Service (USFWS); Western Area Power Administration (WAPA); U.S. Army Corps of Engineers (USACE); Arizona Game and Fish Department (AGFD); Arizona State Land Department (ASLD); Maricopa Association of Governments, Arizona; the town of Quartzsite, Arizona, and La Paz County, Arizona.

ES-2 BLM'S PURPOSE AND NEED FOR ACTION

The purpose of the BLM action is to respond to DCRT's request for a right-of-way (ROW) across public land to construct, operate, maintain, and decommission the Project over an estimated 50-year life of Project. The need for the BLM action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) of 1976 and the Energy Policy Act of 2005 to respond to applications that promote energy production including electricity.

Portions of the Proposed Action and/or Action Alternatives would not be in conformance with the Yuma Resource Management Plan (RMP), Lake Havasu RMP, or the California Desert Conservation Area Plan of 1980, as amended (CDCA Plan). Therefore, BLM must consider amending these plans in connection with its consideration of DCRT's ROW application.

ES-3 DECISIONS TO BE MADE AND OTHER AUTHORIZING ACTIONS

BLM

The BLM will decide whether to issue a ROW grant to DCRT on land administered by the BLM, and if so, what terms and conditions should be applied. If the selected alternative does not conform to one or more of the BLM RMPs, the Project would require RMP amendments before it could be approved. If the BLM selects an Action Alternative route, the BLM would decide whether to issue a ROW to APS to construct, operate, and maintain a 12kV distribution line to power an alternative Series Compensation Station (SCS) location.

CPUC

DCRT has filed an application for a Certificate of Public Necessity and Convenience (CPCN) to site the Project's transmission infrastructure in California. The CPUC will decide whether to approve or deny DCRT's CPCN application.

OTHER AGENCIES

Other agencies, including Department of Defense, Bureau of Reclamation, USFWS, USACE, WAPA, and the Arizona Corporation Commission will have permitting or regulatory decisions to make on the Project. This is further described in Chapter 1.

ES-4 PUBLIC INVOLVEMENT

Public and agency input was solicited to identify the range or scope of issues to be addressed during the environmental analysis and in the EIS. Initiation of the EIS process and the public scoping meetings for the EIS were announced through the *Federal Register*, Volume 81, No. 56, Page 15556 on March 23, 2016; BLM news releases and a Legal Notice in Arizona and California media; and postings on the BLM's ePlanning website for the Project (https://go.usa.gov/xU6Be).

The BLM sent scoping letters and/or emails to 778 potentially interested members of the public and 219 interested agency and tribal representatives. Three public scoping meetings were held to inform the public of the proposed Project and solicit feedback and comments. The meetings were held April 12 - 14, 2016 in Tonopah, Arizona, Quartzsite, Arizona, and Blythe, California. An agency-only scoping meeting was held in Phoenix, Arizona. An Economic Strategies Workshop was held in Quartzsite, Arizona to identify potential social and economic issues and potential opportunities that might enhance or expand the social and economic goals of area communities.

BLM sent notification of availability of the DEIS to people on the mailing list, publicized availability of the DEIS via news releases, and published a Notice of Availability in the Federal Register on August 31, 2018. Three public meetings to discuss the DEIS were held October 9 - 11, 2018 in Phoenix, Arizona, Quartzsite, Arizona, and Blythe, California. Comments were accepted throughout a 90-day comment period, ending November 29, 2018. A total of 50

comment letters and emails were received from the public. Comments and responses are provided in Appendix 8 of this FEIS.

Comments on the DEIS included such topics as use of BMPs and MMs, property values, wildlife, recreation, land use, and avoiding the Kofa NWR.

ES-5 CHANGES BETWEEN DRAFT AND FINAL EIS

In response to public comments on the DEIS, information related to impacts to Sonoran pronghorn and lands with wilderness characteristics were clarified. Also, Project specific plans were included in Appendix 2B. Additionally, the BLM removed the Visual Resource Management Class RMP amendments from the Agency Preferred Alternative to maintain manageability of the utility corridor and made various editorial changes to the EIS, such as fixing several figures, clarifying analyses, and making minor corrections.

Between the DEIS and FEIS, design and engineering of the Project were refined and presented in an updated POD (DCRT 2019); therefore, acreages of new surface disturbance and water required for construction was adjusted to reflect this information in the FEIS. Of note, the POD was revised by the applicant to reflect the Agency Preferred Alternative, rather than the Proposed Action.

ES-6 APPLICANT PROPOSED ROW ACTIONS AND PROPOSED PLAN AMENDMENTS

APPLICANT PROPOSED ROW ACTIONS

The Proposed Action route would be 114 miles long with approximately 97 miles in Arizona and 17 miles in California. Of the total length, 83 miles would be on Federal land. The Proposed Action route would parallel the existing SCE Devers Palo Verde #1 (DPV1) 500kV line and, in some areas, other linear corridors such as transmission lines and natural gas pipeline ROWs.

DCRT proposes to acquire a 200-foot-wide ROW for construction, operation, maintenance, and decommissioning of the 500kV line and associated SCS; and a 20-foot-wide ROW for a 12kV distribution line servicing the SCS, should an alternative other than the Proposed Action be selected. ROWs have been designed to allow for the safe movement and operation of equipment during construction and maintenance[1], the safe construction of the Project facilities, and to allow for sufficient clearance between conductors and the ROW edge as required by the National Electrical Safety Code (2017). DCRT has requested an initial 50-year grant from the BLM for the purposes of constructing, operating, maintaining, and decommissioning the Project. In addition to the BLM, ROWs would need to be acquired from other Federal, state, and local entities, as well as private landowners.

[1] While most access roads would be located within the 200-foot ROW, other access roads would be outside of the transmission line ROW in order to optimize the use of existing roads and trails.

RMP AMENDMENTS

The Proposed Action and all Action Alternatives include amendments to the Yuma RMP and CDCA Plan. In addition, some alternatives include an amendment to the Lake Havasu RMP as further described in Chapter 2.

AMENDMENT OF THE YUMA RMP

The Yuma RMP designates visual resource management (VRM) classes for lands managed within the boundaries of the Yuma Field Office. Portions of the Proposed Action do not conform to the VRM classes on some segments; analysis of these segments includes an amendment to the RMP. In addition, the Yuma RMP would require an amendment to permit a ROW for any segment outside designated BLM utility corridors.

AMENDMENT OF THE CDCA PLAN

The CDCA Plan would be amended to authorize construction of the Project within 0.25-mile of occurrences of Harwood's eriastrum (*Eriastrum harwoodii*), provided that a Rare Plant Linear ROW Protection Plan for Harwood's eriastrum is developed and approved by the BLM California State Director. The Rare Plant Linear ROW Protection Plan would meet the CDCA Plan's goal to promote ecological processes in the BLM Decision Area that sustain BLM Focus and Special Status Species and their habitat.

ES-7 ALTERNATIVES

The EIS analyzes the Applicant Proposed Action, four Action Alternative routes consisting of combinations of Proposed Action segments and Alternative segments, 36 Subalternatives to the Action Alternatives, the Agency Preferred Alternative, and the No Action Alternative (Figures ES-1 and ES-2). The Action Alternative routes were formed by combining proposed and alternative segment combinations that linked together logically, while meeting certain objectives of the BLM, cooperating agencies, and stakeholders; and addressing public concerns. The Action Alternatives represent the best combination of segments to achieve these objectives. The Action Alternatives consider amendments to the Yuma RMP and CDCA Plan, similar to those identified for the Proposed Action, as further described in Chapter 2.

ALTERNATIVE 1: I-10 ROUTE

Alternative 1 would be 111.6 miles long and would generally follow I-10. This alternative route was developed to utilize BLM utility corridors while avoiding the Kofa NWR, Johnson Canyon, YPG, Copper Bottom Pass area, and the area of dense cultural resources associated with the Mule Mountains south of Blythe; and also meet public requests for a route that follows I-10 and minimize crossings of VRM Class II lands.

ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE

Alternative 2 would be 125.8 miles long and would be primarily within designated BLM utility corridors. This alternative route was developed to emphasize the use of BLM utility corridors while avoiding the Kofa NWR, Johnson Canyon, Ehrenberg Sandbowl area, the area of dense cultural resources associated with the Mule Mountains south of Blythe, and residential and other

development south of Blythe; minimize impacts to the Colorado River Indian Tribes (CRIT) reservation and use of private land in California; and place the majority of route crossing VRM Class III lands.

ALTERNATIVE 3: AVOIDANCE ROUTE

Alternative 3 would be 123.0 miles long and was developed to avoid Kofa NWR, Johnson Canyon, the CRIT reservation, the Town of Quartzsite, Ehrenberg Sandbowl area, biologically important backwaters of the Colorado River, the southern end of Blythe, and the area of dense cultural resources associated with the Mule Mountains south of Blythe; and place the majority of the route crossing VRM Class III lands.

ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE

Alternative 4 would be 120.3 miles long and generally is on public lands, minimizing Arizona state trust lands. This alternative route was developed to avoid the Kofa NWR, state trust land along I-10, the CRIT reservation, the Ehrenberg Sandbowl area, the southern end of Blythe, and the area of dense cultural resources associated with the Mule Mountains south of Blythe; and also maximize use of BLM utility corridors in the Copper Bottom Pass area, while placing the majority of route crossing VRM Class III lands.

AGENCY PREFERRED ALTERNATIVE

The BLM has identified Alternative 2, the BLM Utility Corridor Route, utilizing Subalternative 4D (Segments x-05 and p-07), as the Agency Preferred Alternative for the Project, to include the alternative SCS located along Segment i-03 adjacent to I-10 (Figure ES-2); along with design features, applicant proposed measures (APMs), best management practices (BMPs), and mitigation measures, with modifications, as necessary. It is 125.0 miles long, with impacts similar to those identified for Alternative 2; and includes route modifications further minimizing impacts to recreation, tourism, towns, and other sensitive resources along the Project route. The Agency Preferred Alternative does not include amendments to the visual resource management classes in the Yuma RMP in order to maintain consistency in management along the entire length of the utility corridors used by the Project. Visual impacts are minimized through project design and implementation of BMPs.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not approve the ROW grant on BLM-administered public lands and no BLM RMP would be amended. The 500kV transmission line would not be constructed across Federal lands as proposed by DCRT.

ES-8 PROPOSED FACILITIES AND INFRASTRUCTURE

Transmission structures are proposed to be comprised of steel lattices of various configurations. The structures would be between 72 and 195 feet in height, depending on the span length required and topography, with most being shorter than 142 feet. Span lengths between structures would vary from 400 to 2,300 feet, depending upon terrain conditions, current land use, structure type used, and to achieve site-specific mitigation objectives.

The Project would require a transmission line SCS located at the approximate midpoint of the route. Under the Proposed Action, a new SCS system would be located within the 200-foot-wide ROW parallel to the existing SCS associated with the DPV1 line, approximately 47 miles from the APS Delaney Substation. Two alternative locations for the SCS, less than 75 feet apart, have also been identified located south of I-10 to the north of the New Water Mountains. Specifications for the alternative location SCS would be the same regardless of the route selected or SCS location. The SCS would be fenced and access would be restricted.

Five types of access would be used for this transmission line: existing maintained public or private roads, upgraded existing roads, new centerline access, spur roads, and helicopter access.

ES-9 PROPOSED OPERATION, MAINTENANCE, AND DECOMMISSIONING

After construction, Project operation and maintenance would be an ongoing activity including ROW safety requirements, transmission line inspections, preventative and emergency maintenance, distribution line maintenance, vegetation management including trimming and removal of vegetation within the ROW, SCS maintenance, substation maintenance, and long-term access to the ROW through general road maintenance and installation of signs and markers.

Should the ROW and facilities no longer be needed, the transmission lines and associated facilities would be decommissioned and removed. All areas of long-term disturbance on BLM-managed lands would be reclaimed in accordance with a Decommissioning Plan approved by the BLM prior to issuance of the ROW grant. A performance and reclamation bond for BLM-managed lands, would also be required per BLM bonding policy. Access routes and other sites disturbed during decommissioning would be reclaimed and revegetated in accordance with the Decommissioning Plan.

ES-10 MONITORING AND MITIGATION

In addition to the Project design features, DCRT's APMs, and BLM-required BMPs (which are included as part of the Applicant Proposed Action, Agency Preferred Alternative, and Action Alternatives), additional monitoring and mitigation measures (MMs) may be necessary. These additional measures would be in response to potential environmental impacts identified in Chapter 4. Additionally, WAPA would require preparation of a Mitigation Action Plan if impacts were not addressed through implementation of BMPs, APMs, and MMs.

ES-11 ENVIRONMENTAL SETTING AND ENVIRONMENTAL CONSEQUENCES

ENVIRONMENTAL SETTING

The Project Area extends across southwestern Arizona into southeastern California. It is within the North American Deserts Ecoregion (Level I division) (Commission for Environmental Cooperation n.d. [no date]) and the Sonoran Basin and Range subdivision (Level III division) (EPA 2013a), which is distinguished by palo verde-cactus vegetation including saguaro, cholla, and agave cacti. This region has large tracts of Federally owned lands. The climate is

characterized by being the driest in the US. The topography is characterized by valley basins and mountain ranges that are roughly parallel.

The economy of the region has historically been based on irrigated agriculture, livestock grazing, and mining (Commission for Environmental Cooperation 1997). Federal and state trust land uses include commercial, recreational, and livestock. Private land users include residential, commercial, and industrial. The primary type of land within the analysis areas and adjacent to the Project Area are undeveloped natural areas.

ENVIRONMENTAL CONSEQUENCES

Resources that were not key to distinguishing between alternatives or the decision-making process were briefly described in Chapter 4. Non-key resources include air quality and climate change; geology and minerals; paleontological resources; grazing and rangeland special designations, management allocations, and wilderness resources; noise; hazards and hazardous materials; public health and safety; traffic and transportation; and water resources. The environmental consequences of key resources are summarized below.

SOIL RESOURCES

Direct impacts to soil resources as a result of construction activities include the loss of soil productivity due to the removal of soils during new surface disturbance. Clearing vegetation and topsoil, as well as grading, could result in newly exposed, disturbed soils that could be subject to accelerated erosion by wind and water. Any soil removal associated with development of structure foundations and at the SCS would be long-term and would be a loss of soil productivity. One of the primary impacts of concern for construction is disturbance to soil biological crusts. During operations, the primary concern to soils is the interference with sand transport and dune formation. Because of the open design of lattice structures that would be used in areas of active windblown deposits, impacts to sand transport would be negligible to minor depending on the location of the Project.

Indirect impacts associated with topsoil removal may include invasive plant colonization, soil erosion, and reduction of soil water retention. Implementation of APMs, BMPs, reclamation, and other conservative measures would minimize loss of topsoil and soil productivity to short-term and minor to moderate.

Overall, when combined with past, present, and reasonably foreseeable projects, there would be negligible to minor cumulative effects to soils, except in the case of sand transport areas. When combined with past, present, and reasonably foreseeable projects, such as solar facilities, these could have a minor to major cumulative effect on the transport of sand.

BIOLOGICAL RESOURCES

Biological resources include vegetation communities, general wildlife, special status species of plants and wildlife, Wildlife Habitat Management Areas, wildlife waters, and other features that are important for conserving biodiversity in and near the Project.

Vegetation, including Noxious and Invasive Weeds, and Special Status Plants

The Project would involve the removal of vegetation during construction activities, resulting in the direct reduction in the representation of plant communities. Vegetation removal and disturbance of soils could have a variety of effects on vegetation communities, ranging from changes in community structure and species composition to alteration of soil moisture or nutrient regimes. Removal of protective vegetation would also expose soil to potential wind and water erosion. Fugitive dust from construction traffic has the potential to affect photosynthetic rates and decrease plant productivity. Clearing and grading could also result in the alteration of soil conditions, including the loss of native seed banks and change in topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired. Though portions of each alternative pass through developed agricultural areas at the east and west ends of the Project, the majority of each alternative is within the Sonoran desertscrub community. Trimming or removal of tall vegetation for conductor clearance would alter some of the more robust plants within the vegetation community and can leave these plants more susceptible to disease and possibly result in the death of those plants. The vegetation communities and plant associations within the Sonoran Desert are very slow to re-grow perennial species following disturbance, often taking decades to recover, if at all.

The Project would remove native vegetation and disturb soils at structure construction sites, storage areas, along access roads, and wherever heavy equipment is used, providing suitable conditions for infestation by non-native plants. Project implementation would have direct and indirect impacts on the spread of noxious and invasive plant species within areas disturbed by construction activity and these invasive species would directly and indirectly impact native plant communities and special status plants. These potential impacts would be minimized through implementation of various APMs and BMPs.

No plant species listed under the Federal Endangered Species Act (ESA) are known or expected in the Project Area. However, in Arizona more than 200 species protected by the Arizona Native Plant Law, and, in California, as many as 16 plant species considered rare by the California Native Plant Society and one plant species considered sensitive by the BLM (Harwood's eriastrum) have the potential to be impacted by Project activities. Except for Harwood's eriastrum, the Project could have direct and indirect impacts on special status plant species located within areas disturbed by construction activity; however, these potential impacts would be either eliminated or minimized through implementation of various APMs and BMPs.

Based on the distribution of potentially suitable habitat, Harwood's eriastrum is expected to be present along all Project alternatives crossing the Palo Verde Mesa. Therefore, the CDCA Plan would be amended to allow Project construction to proceed, provided a Linear Right-of-Way Rare Plant Protection Plan with the appropriate BMPs for Harwood's eriastrum is developed. Implementation of BMPs would be required to achieve the objectives of this plan.

Wildlife, Including Special Status Wildlife & Migratory Birds

Direct impacts on wildlife anticipated as a result of the Project includes removing vegetation that would result in the long-term loss of wildlife habitat, displacing and/or killing resident wildlife species, especially those that are less mobile such as snakes, lizards, and small mammals; and altering, displacing, or disrupting the breeding and foraging behavior of wildlife. Construction

may also result in fragmentation and degradation of adjacent native habitats due to use and development of access roads, noise, vibration, dust, increased human presence, increased vehicle traffic, exhaust emissions from heavy equipment, and possible spillage of fuels and other hazardous substances. Use of and improvements to existing roads, and creation of new roads to access construction sites and support long-term Project maintenance provides opportunities for increased human presence and disturbance to wildlife habitat by recreationists, especially by off-highway vehicle (OHV) enthusiasts. The Project's relatively short construction period (e.g., duration of disturbance), limited acres of long-term habitat loss, and implementation of APMs/BMPs would be expected to result in generally minor effects limited to individual plants and animals within a localized area (i.e., no measurable population level impacts). These potential impacts would be minimized through implementation of various APMs and BMPs.

Special status species include the Sonoran desert tortoise and Sonoran pronghorn in Arizona and the Mojave desert tortoise and Mojave fringe-toed lizard in California. Project activities could impact these species in much the same way as discussed for common wildlife species. The amount of habitat that would be impacted by Project activities would be small in comparison to available habitat, and the loss of individuals would not impact local populations. Indirect impacts to specific special status wildlife range from negligible to major depending upon the segments. The APMs and BMPs identified for general wildlife would minimize Project-related impacts (as well as applicable MMs).

The Project has the potential to negatively impact migratory birds due to removal of nesting habitat during the breeding season, collision, and disturbance. Potential impacts to migratory birds would be minimized through implementation of various APMs and BMPs.

The Project, when combined with other past, present, and reasonably foreseeable future actions, would not be the cause of a significant degradation of vegetation or wildlife resources (including special status species) or affect the potential to sustain current population levels. The degree of change on a cumulative basis would be negligible once MMs have been implemented and disturbed areas are restored.

CULTURAL RESOURCES

Based on the scope of the Project, the BLM has determined that the development of a Project-specific Programmatic Agreement (PA) in consultation with interested Tribes, land-managing and permitting agencies, and other stakeholders is required. The PA would refine the Area of Potential Effects based on design plans for the selected alternative. The Project's analysis area for cultural resources in this document is the ROW itself, defined as a 200-feet wide corridor, centered on the ROW centerline for all alternatives, where the construction of Project elements such as structures, access and spur roads, and other ancillary elements would occur. Direct impacts due to construction could range between negligible (if eligible sites could be avoided by Project design) and major (if eligible sites could not be avoided by Project design). Potential adverse effects to historic properties would be mitigated according to the Historic Properties Treatment Plan (HPTP) stipulated by the PA. Avoidance of cultural resources by final design and construction would be the preferred form of mitigation.

Indirect effects to historic properties could occur in areas where the construction of new roads into the Project Area would provide improved access into previously inaccessible areas.

Improved access could lead to site damage by OHV and recreational use of these areas. Such damage could consist of vehicular damage to surface archaeological sites and vandalism to sensitive areas. Measures to mitigate potential adverse effects to historic properties as a result of improved access would be included in the HPTP.

Indirect visual impacts could occur from the presence of structures in sight of National Register of Historic Places (NRHP)-listed historic properties or properties eligible for inclusion in the NRHP under Criterion A, B, or C by altering the setting of the properties. Resolution measures to minimize the potential adverse effects of visual intrusions would be contained in the HPTP and implemented by Project design. If effects to NRHP qualities are measurable this would constitute a permanent cumulative effect.

CONCERNS OF INDIAN TRIBES

Ground disturbance during construction may affect areas of Indian tribal concern. Specific Indian tribal concerns include limitations to Tribal access, degradation of Native infrastructure and cultural landscapes, new development in areas that are predominantly pristine, degradation of Traditional Cultural Properties (TCPs), and how the inadvertent discovery of human remains would be treated.

Measures to mitigate potential adverse effects to areas of Indian concern as a result of Project construction would be contained in the HPTP. Avoidance of impacts by final design and construction would be the preferred form of mitigation.

Indirect effects to cultural resource sites of tribal concern would be similar to those described under cultural resources. Indirect impacts would occur from the presence of structures in sight of TCPs and other areas of Indian concern by altering their setting. The number and types of historic properties affected would vary by alternative. MMs to minimize the potential adverse effects of visual intrusions would be contained in the HPTP and implemented by Project design.

Past and present development has had the effect of substantially altering the native landscape of affiliated Indian tribes. In particular, the DPV1 transmission corridor crosses the viewshed of the NRHP-listed Mule Mountains Petroglyph and Intaglio District. Additional structures in the line of sight of this resource would continue to cumulatively affect the viewshed. The increase in visual degradation, combined with all previous disturbances and developments, may result in a moderate to major cumulative impact on the Mule Mountains Petroglyph and Intaglio District.

Future projects in the western portion of the Project Area include large solar facilities, all of which cumulatively affect issues of concern to Indian tribes. These cumulative effects are manifest in terms of the loss of pristine environment, erasure of the tribal footprint on the landscape, vandalism of archaeological sites due to increased OHV traffic and visitation, potential restriction to areas of elevated spiritual importance for Indian tribal ceremonies, and the disruption of Native infrastructure. The development of the Project further contributes to these cumulative effects.

LAND USE

The implementation of the Project would not alter existing land ownership. Temporary use areas would be returned to their existing condition in accordance with BLM standards following

construction. BLM-authorized ROWs such as roadways, transmission lines, utilities, and pipelines; oil, gas, solar energy, and mining leases; and other permits, leases, and easements may be temporarily affected by changes in access, but there would be no long-term impact to these ROWs. For non-BLM lands, ROWs would be obtained as easements or leases, as appropriate. Other authorized land uses, such as grazing and recreation, may experience minor displacement during construction but no long-term impacts are expected. The primary land use change associated with the Project would be the development of currently natural or undeveloped land for a new transmission line and ancillary facilities (i.e., SCS, access roads). The Agency's Preferred Alternative would not cross either the La Posa Long Term Visitor Area or the Dome Rock Camping Area.

The analysis area is located within 14 Federal, state, and local planning areas; the Project would be in compliance with these plans except for the Yuma RMP, Lake Havasu RMP, CDCA Plan, La Paz County Zoning Plan, and Town of Quartzsite General Plan. La Paz County and the Town of Quartzsite have expressed support for the Agency Preferred Alternative.

In terms of cumulative effects, an increase in development would contribute to changes in land use and the modification of the character of the cumulative effects area. As development occurs, the rural environment would become increasingly more residential, commercial, and industrial. The cumulative effects of past, present, and reasonably foreseeable projects to land use would be minor to moderate, although this Project would contribute only negligibly to this overall cumulative effect.

RECREATION

Construction of the Project would not permanently preclude the use of, or access to, any existing recreation opportunities or activities; however, some temporary effects to these resources would occur during the construction phases of the Project. This may cause adjacent recreation areas not directly impacted by the construction, whether developed and/or available for dispersed recreation, to become temporarily more crowded while construction in the area is active.

Dispersed recreation activities would be temporarily affected as construction noises, visual disturbances, vehicle and equipment travel, and/or the presence of other humans within approximately one mile of a recreation area or opportunity could detract from these recreation opportunities and activities. For segments traversing Johnson Canyon, the unavoidable adverse effect on the Arizona Peace Trail in Johnson Canyon would be reduced to minor by constructing the Project outside of the peak OHV season (between the months of July and September).

The presence of a transmission line after construction would not be likely to eliminate a recreational use or access to recreation but the quality of, or experience associated with a recreational use may be altered. In particular, the effect of the Project on segments not already occupied by the DPV1 or other transmission lines would be greater than on segments within existing transmission ROWs, and this effect would be negligible to moderate and long term.

Short-term unavoidable adverse effects to recreation would result from temporary closure of OHV use in portions of the Copper Bottom Pass area and in proximity to the long-term visitor area (LTVA) during construction, affecting OHV users on the proposed Arizona Peace Trail and

other OHV routes. In the long term, the main unavoidable adverse effect would be increased development in natural areas heavily used for recreation.

The cumulative impact of the Project on the recreation setting would be minor since recreation settings would be available in adjacent areas, and other cumulative actions would be far-removed and would not affect adjacent lands along the entire ROW. Operation and maintenance activities of the Project would result in minor cumulative effects, since the Project would already be constructed and standard operation and maintenance activities would be so periodic as to not affect recreation opportunities, experiences, or desired settings.

SOCIOECONOMICS

During construction, the Project would provide several hundred jobs for both local workers and workers from outside the local area; drive local purchasing of materials and services; have a negligible impact on local services and housing; and have a positive impact on governmental revenues through property taxes and sales and use taxes. These impacts would all be considered short-term, beneficial, and of minor to moderate intensity.

In contrast to the large workforce and expenditures required for construction, ongoing operations and maintenance would require few workers and have relatively little direct economic impact in the project area. There is some evidence that transmission lines can lower residential property values in the immediate vicinity by a minor to moderate amount; this effect, which is unlikely to occur due to the Project, seldom exceeds 15 percent.

Ongoing operations and maintenance should have little or no long-term effect on the tourism- and recreation-related economy. It has been widely demonstrated that impacts from visual disturbance dissipate quickly with distance from transmission lines; given the vast area available for high-quality recreation the transmission line and its associated facilities should have negligible impact on the recreation and tourism economy.

Increased property taxes would be an ongoing benefit. By improving the reliability of the electrical grid in California and Arizona, the Project would increase the ability of the grid to meet demand growth in the region and facilitate potential energy generation development in the region. The long-term economic impacts from these impacts would be beneficial.

Given the current workforce in the area and the amount of available housing, cumulative impacts as a result of construction workers on the local housing market are considered to be negligible to moderate during Project construction. Construction of the Project transmission line in conjunction with energy generation projects would facilitate the transmission of energy to consumers and may encourage additional development of energy sources. The Project in conjunction with reasonably foreseeable energy, utility, and other infrastructure projects could support population increases in the area in the foreseeable future.

ENVIRONMENTAL JUSTICE

Low-income or minority populations (environmental justice populations) would likely experience disproportionate adverse effects on a localized basis from construction, operation, and maintenance of the Project. These impacts would include construction noise and other disruptions and impacts to visual resources and property values during operations. Any impacts

would likely be negligible to minor due to the predominantly low-density rural setting and the presence of existing transmission and utility lines nearby. Also, the Proposed Action route and all Action Alternative routes are adjacent or nearly adjacent to existing transmission lines, interstate highways, or other utility corridors as a means of minimizing new disturbance to either the natural or human environment. Consequently, these adverse effects are all expected to be minor. Low-income and minority populations may also be positively affected by the benefits of the Project, including the short-term economic stimulus from construction activities and expenditures, short-term and longer-term increases in tax revenues, and added capacity and reduced congestion for electricity transmission.

There would be no short- or long-term displacement of low-income or minority businesses or residents under the Project to contribute to potential cumulative effects on minority populations. The health and safety of these populations would be protected during both construction and operation at the same levels as other populations by implementing the safety measures described in the APMs, BMPs, and other protocols, as well as other resource-specific plans, such as the Hazardous Materials Management Plan. It is assumed that future projects would be required to address any significant impacts on these populations; therefore, cumulative impacts on minority and low-income populations as a result of the Project in combination with reasonably foreseeable future projects also would be minimal.

VISUAL RESOURCES

During construction, visual impacts would result from the introduction of construction vehicles, equipment, and construction materials within staging areas, access roads, and within the transmission line ROW. The presence of work crews, vehicles and other equipment, and dust generated by construction activities would be visible in views toward the Project Area from the surrounding area at varying distances depending on local conditions. Motion, dust, and activity would attract attention in certain circumstances. Where the Project would be in closer proximity to viewers and there is a lack of intervening topography or vegetation, ground disturbance from access routes and at structure bases could be visible to observers.

Disturbance resulting from construction would be temporary and largely short in duration, and visible effects from active construction would diminish subsequent to clean up and reclamation of the temporary staging areas and access roads. Reclamation of desert vegetation can take years to complete and conditions in areas of disturbance are expected to change over the years as reclamation takes place. Because of the small scale of vegetation disturbance required, there would be minimal visible contrasts that would be reduced over time.

Sensitive viewers would be affected in the short term by the Project construction impacts. The transmission line structures would cause a major, long-term change to scenery. Landform modification would be noticeable and create visual contrast within the viewshed. This reduction in scenic quality would vary across the Proposed Action route and Action Alternative routes according to the number of sensitive viewers and the current scenic rating of the units.

Cumulatively, the Project would add to the change in visual character in undeveloped or rural areas when combined with visual impacts of other past, present, and reasonably foreseeable projects.

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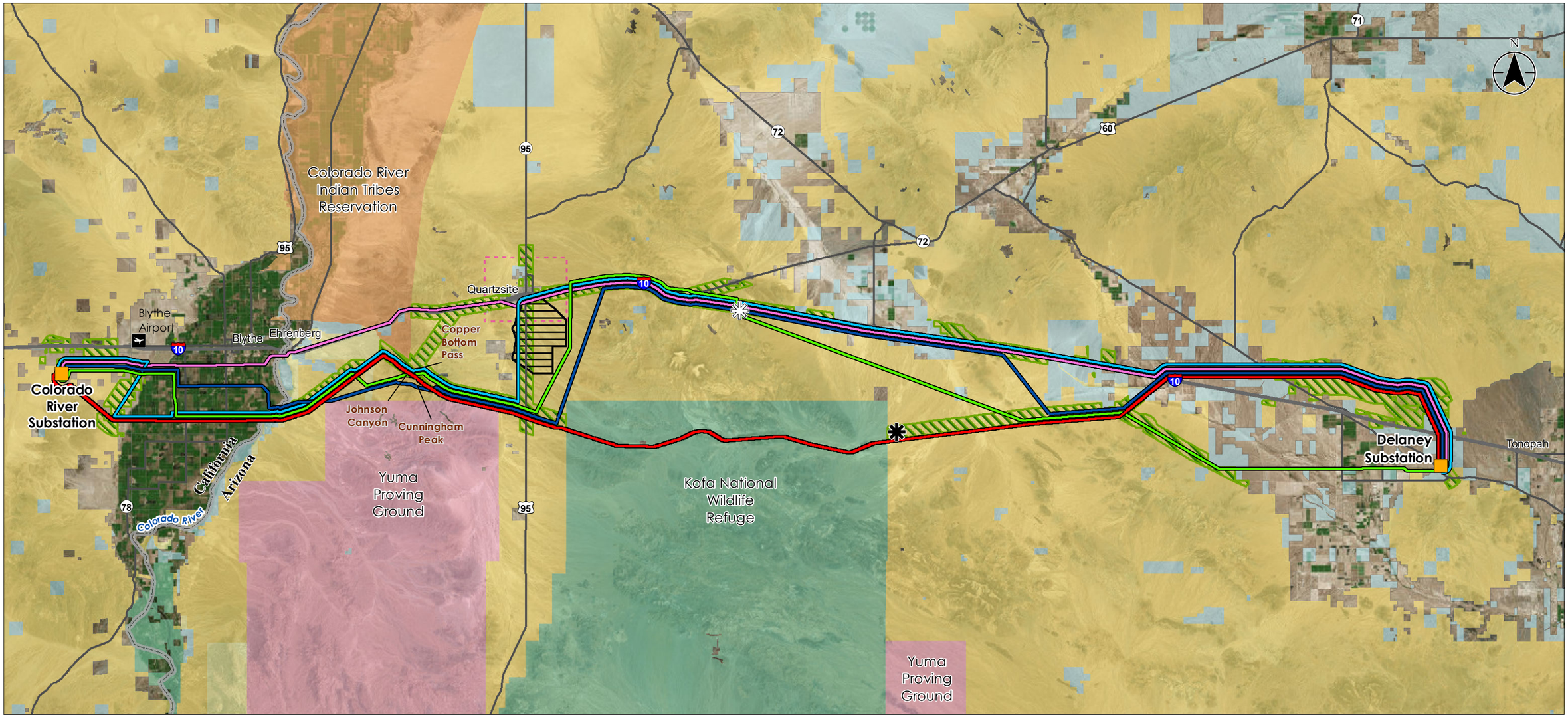

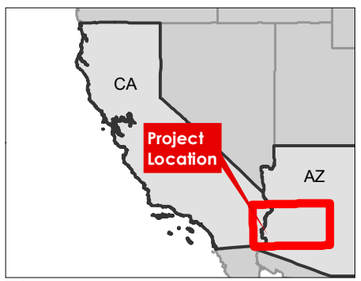

Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Proposed Action*
- Alternative 1: I-10 Route*
- Alternative 2: BLM Utility Corridor*
- Alternative 3: Avoidance Route*
- Alternative 4: Public Lands Emphasis Route*
- BLM Utility Corridor^
- BLM Long-term Visitor Area
- Quartzsite Planning Area

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

0 9 18 Miles

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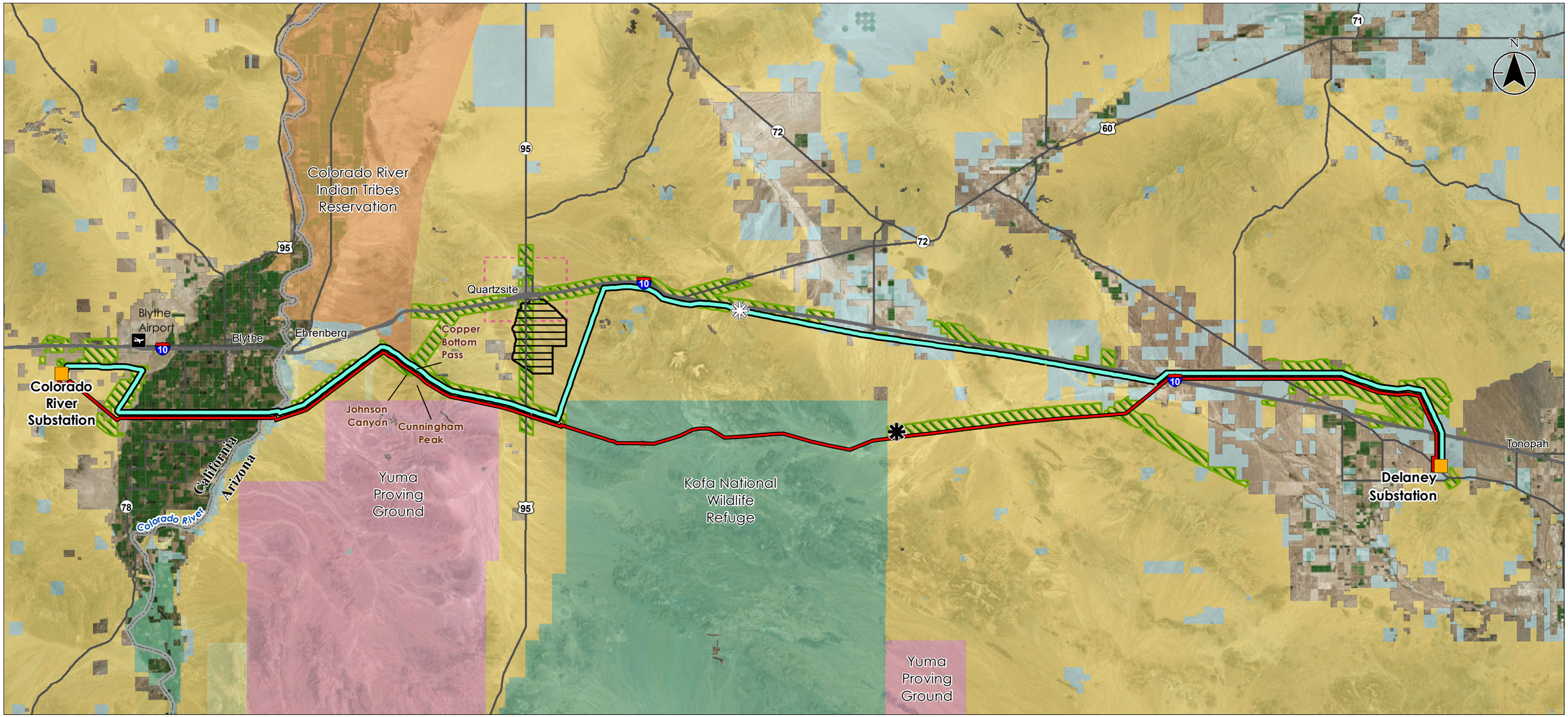
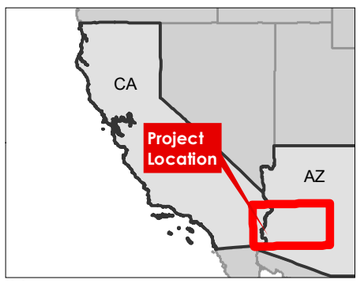
^ = BLM Utility Corridors were clipped to a 2-mile study area.
* = Routes depicted on this map are cartographically offset up to 1200 meters for display purposes. In some instances, the route turns were modified to represent the overall intent of the route design.

Figure ES-1
Ten West Link
Full Route Alternatives
to the Proposed Action





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- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)

- Proposed Action*
- Agency Preferred Alternative
- BLM Long-term Visitor Area
- BLM Utility Corridor^
- Quartzsite Planning Area

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

0 9 18 Miles

1:570,240 (At original document size of 11x17)

^ = BLM Utility Corridors were clipped to a 2-mile Project study area.
* = The Proposed Action is offset 600 meters to the South for display purposes.

Figure ES-2
Ten West Link
Agency Preferred Alternative

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Chapter 1 Introduction, Purpose and Need

CHAPTER 1 INTRODUCTION, PURPOSE AND NEED

1.1 INTRODUCTION

DCR Transmission (DCRT), Limited Liability Corporation filed a right-of-way (ROW) application (SF-299) with the Bureau of Land Management (BLM) in September 2015, to construct, operate, maintain, and decommission a series-compensated, 500 kilovolt (kV) alternating current (AC) overhead transmission line traversing approximately 114 miles in western Arizona and eastern California (the Project). The Project, also referred to as the Ten West Link Transmission Line Project, is designed to transmit 3,200 megawatts (MW), provide connection capability for new energy projects in the region, and would require new ROWs or easements on a combination of Federal, state trust, and private lands. Because ROWs over public lands would be needed for the Project, the action triggers the National Environmental Policy Act (NEPA). To comply with NEPA, the BLM determined that an Environmental Impact Statement (EIS) is needed.

This EIS was prepared to satisfy requirements of NEPA for use by the BLM and, as applicable, other Federal agencies in connection with the proposed Project. This EIS also addresses the requirements of the California Environmental Quality Act (CEQA) for use by the California Public Utilities Commission (CPUC) and, as applicable, other California state and local agencies in connection with the Project.

References, Acronyms, Abbreviations, Glossary, and Index are located in Appendix 6. All figures not contained in the EIS chapters are contained in Appendix 7.

1.2 PROJECT BACKGROUND, OVERVIEW, AND LOCATION

1.2.1 Project Overview and Location

The Project would begin at the Arizona Public Service Company (APS) Delaney Substation near Tonopah, Arizona, and terminate at the Southern California Edison (SCE) Colorado River Substation near Blythe, California. The Project would be located in Maricopa and La Paz Counties in Arizona, and Riverside County in California (Figure 1-1). The applicant-proposed route would parallel an existing transmission line and other linear facilities[1], primarily within designated utility corridors.

As proposed, approximately 97 miles of the Project would be in Arizona, and 17 miles would be in California; the majority of the route would cross Federal land, including lands managed by the BLM, Bureau of Reclamation (Reclamation), and the United States Fish and Wildlife Service (USFWS)-managed Kofa National Wildlife Refuge (NWR or “the Kofa”). The Project also would include a series compensation station (SCS) and overhead 12kV electric distribution line located approximately in the middle of the route. The applicant-proposed SCS would be placed parallel to an existing SCS for DPV1 south of Vicksburg, Arizona (Figure 1-1).

[1] In 1982, SCE constructed the Devers to Palo Verde No. 1 (DPV1) transmission line between the Devers Substation (near Palm Springs, California) and the Palo Verde Nuclear Generating Station (PVNGS) (near Tonopah, Arizona).

The portions of the Project outside of designated utility corridors or that would otherwise be inconsistent with BLM resource management plans (RMPs) would require RMP amendments for the Project to be approved.

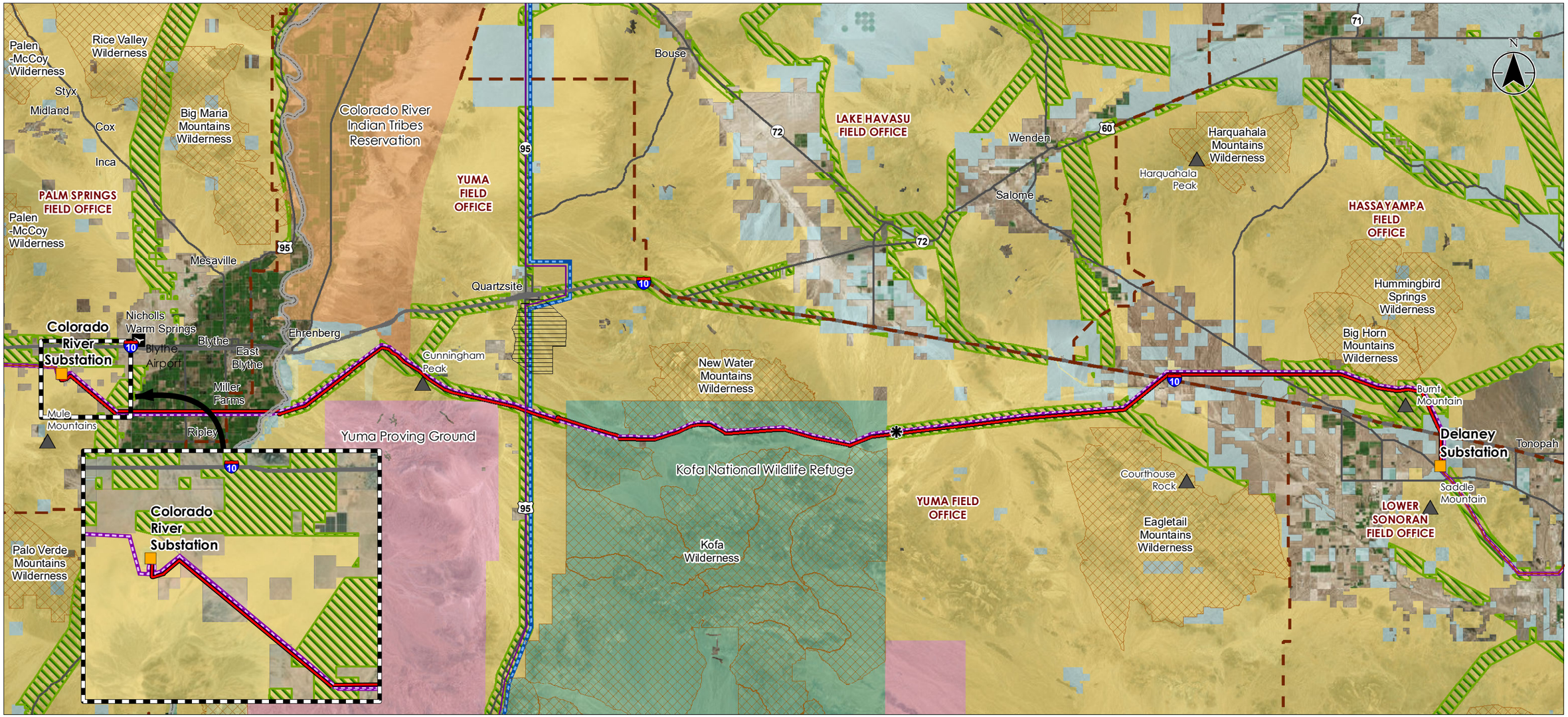
A ROW term of 50 years is requested to construct, operate, maintain, and decommission the transmission line and associated infrastructure.

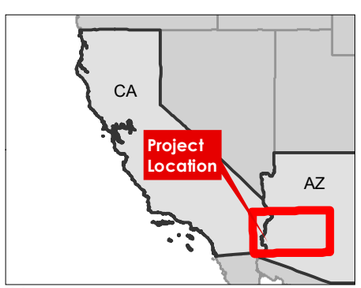
1.2.2 Applicant's Project Objectives

In 2014, the California Independent System Operator (CAISO), an independent non-profit electricity grid operator for California, identified that an additional high-voltage transmission connection between the Delaney and Colorado River substations was needed for reliability and efficiency of the California and western electricity grid, and for renewable energy resources in support of state policy. Through a competitive bid process, CAISO selected DCRT to construct, operate, and maintain the Project, maximizing the use of existing or expanded transmission line ROWs.

The Project would:

- Respond to the CAISO's request to increase capacity by connecting the Delaney and Colorado River substations.
- Facilitate development of new renewable energy: The Project would create new transmission infrastructure needed to interconnect future renewable energy resources in both Arizona and California to the bulk transmission grid. The solar Investment Tax Credit supports development of solar energy projects in the U.S. that start construction prior to December 31, 2021.
- Use existing developed transmission or utility corridors wherever possible, thereby minimizing impacts while maximizing the use of existing access roads and infrastructure.
- Improve system economics: The Project would increase the capability of the system to deliver energy. The increase in cost-effective transfer of energy enhances competition among energy suppliers and reduces energy costs to customers.
- Enhance operational flexibility: The Project would create a diverse transmission network serving Arizona and California that would afford the transmission system operators the operational flexibility to redirect the power flows under normal and emergency conditions, improving system reliability and deferring transmission upgrades.
- Improve regional collaboration: This interstate transmission line would facilitate efficient and increased sharing of generation resources; it would enable both Arizona and California to better integrate renewable resources, share reliability services, and increase supply diversity under normal and emergency conditions.





Notes
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2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Proposed Action*
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Long-term Visitor Area
- BLM Utility Corridor
- Peak
- BLM Field Office Boundary
- Wilderness Area

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

0 9 18 Miles

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* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 1-1
Ten West Link
Proposed Action
Overview

- Strengthen regional reliability and enhance system efficiency: The Project would strengthen the regional transmission system in Arizona and California by adding additional capacity and alleviating grid congestion. The Project would improve transmission line reliability in compliance with the North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) standards.
- Contribute to the regional economy: The Project would provide economic benefits through spending on goods and services during construction activities, payment of ROW fees, and property tax revenues.
- Benefit Arizona electric consumers: As the Project would be paid for by the CAISO customers, the Arizona electric consumers would receive system benefits without long-term capital responsibility for the critical infrastructure.

1.3 BLM'S PURPOSE AND NEED FOR ACTION

The purpose of the BLM action is to respond to DCRT's request for a ROW across public land to construct, operate, maintain, and decommission a 114 mile, 500kV transmission line between the APS Delaney Substation in Maricopa County, Arizona, and the SCE Colorado River Substation in Riverside County, California.

The need for the BLM action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) of 1976 and the Energy Policy Act of 2005 to respond to applications that promote energy production including electricity, and to designate corridors for electricity transmission and distribution facilities.

Portions of the Proposed Action and/or Action Alternatives would not be in conformance with the Yuma RMP and the California Desert Conservation Area (CDCA) Plan. Therefore, BLM must consider amending these plans in connection with its consideration of DCRT's ROW application.

1.4 LEAD AND COOPERATING AGENCIES

The BLM is the lead Federal agency responsible for preparing this EIS. The Colorado River District Office is the lead BLM office, responsible for consultations required by Section 7 of the Endangered Species Act of 1973 (ESA), as amended, and the National Historic Preservation Act of 1966 (NHPA, 54 U.S.C. 300101 et seq.), as amended (referred to hereafter as Section 106 of the NHPA).

The following agencies have formally agreed to be cooperating agencies as part of the NEPA process for the Project:

- Environmental Protection Agency (EPA)
- Department of Defense (DOD), Yuma Proving Ground (YPG)
- USFWS
- Reclamation
- United States Army Corps of Engineers (USACE)
- Arizona Game and Fish Department (AGFD)

- CPUC
- Arizona State Land Department (ASLD)
- Maricopa Association of Governments (MAG)
- La Paz County (Arizona)
- Town of Quartzsite (Arizona)
- Western Area Power Administration (WAPA)

1.5 DECISIONS TO BE MADE AND AUTHORIZING ACTIONS

1.5.1 BLM

The BLM will decide whether to issue ROWs to DCRT on land administered by the BLM, and if so, what terms and conditions should be applied.

Should an Action Alternative route be selected, a 12kV distribution line would be required to power the alternative SCS location. The BLM would decide whether to issue a ROW to APS to construct, operate, maintain, and decommission this 12kV distribution line.

If any alternative other than the No Action is selected, the Project would require an RMP amendment before it could be approved.

1.5.2 DOD

The DOD will decide whether to grant an aerial ROW (to include coordination of airspace and land space, as required by the DOD) to DCRT to construct, operate, maintain, and decommission the Project on the YPG.

1.5.3 Reclamation

The Lower Colorado Regional Director for Reclamation will decide whether to issue a land use authorization for DCRT to construct, operate, maintain, and decommission the Project on Reclamation land.

1.5.4 USFWS

The USFWS first determines if the Project would be considered an appropriate use within the Kofa NWR. The USFWS determined that the Project would not be an appropriate use within the Kofa NWR on January 26, 2017, and therefore the USFWS cannot authorize a ROW for the Project across the Kofa NWR (USFWS 2017) (Appendix 1A). USFWS is the responsible agency for issuing a Biological Opinion for the action.

1.5.5 USACE

The USACE will decide whether to authorize the Project under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.

1.5.6 WAPA

DCRT filed an application with WAPA for funding to construct the Project, in whole or in part, under the authority granted by WAPA by § 301 of the Hoover Power Plant Act of 1984 (Public Law 98-381), as amended (§ 301, "Western Area Power Administration Borrowing Authority").

WAPA needs to consider DCRT's application for funding under § 301 and the Transmission Infrastructure Program. Section 301 authorizes WAPA to borrow funds from the U.S. Treasury to construct, finance, facilitate, plan, operate, maintain, and/or study construction of new or upgraded electric power transmission lines and related facilities. These transmission lines and related facilities must have at least one terminus within the area served by WAPA and deliver or facilitate the delivery of power generated by renewable resources. Those decisions constitute a Federal action requiring NEPA review and are the basis for WAPA's involvement in this EIS process as a cooperating agency. Additionally, WAPA is considering whether to take an ownership interest in fiber optic communication links over the Project's fiber optic overhead ground wire.

1.5.7 ACC

The Arizona Corporation Commission (ACC), which governs electrical transmission line siting and issues permits for large transmission and other power facilities in the state regardless of land ownership, requires environmental analysis to be performed for new transmission lines. The Arizona Power Plant and Transmission Line Siting Committee, part of the ACC, is responsible for the environmental review on state trust lands in Arizona. Pursuant to Arizona Revised Statute (ARS) 40-360 et seq., the ACC will conduct the environmental review of the Arizona portion of the Project.

DCRT has filed an application for a Certificate of Environmental Compatibility (CEC) to site the Project's transmission infrastructure in Arizona. The ACC approval or denial of DCRT's CEC application is a discretionary decision.

1.5.8 CPUC

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies in California. The CPUC regulates utility services, stimulates innovation, and promotes competitive markets, where possible (CPUC 2017), and therefore regulates CAISO-requested projects (Section 1.2.2).

DCRT has filed an application for a Certificate of Public Convenience and Necessity (CPCN) to site the Project's transmission infrastructure in California. The CPUC approval or denial of DCRT's CPCN application is a discretionary decision. Under California law, the CPUC would be required to comply with CEQA before issuing the CPCN.

In April 2016, the BLM and CPUC entered into a Memorandum of Understanding (MOU, Appendix 1B) whereby the BLM, as the Lead Agency under NEPA, will coordinate with the CPUC to assist with CPUC's compliance with CEQA. Information specific to the CEQA process, CPUC decisions, and analysis specific to CEQA requirements are contained in Appendix 1C and are not discussed in the body of this document.

1.5.9 Other Agencies

Several other Federal, state, and local agencies will rely on the information in this EIS to inform their decisions regarding issuance of specific authorizations and permits related to the Project. Tables 1.5-1 and 1.5-2 (Appendix 1) list the tribal, Federal, state, and local agencies' authorizations and permits that would be required for the Project.

1.6 ENVIRONMENTAL REVIEW PROCESS

This EIS analyzes and discloses the environmental impacts of the Proposed Action, 45 route segments that have been combined into alternatives to the Proposed Action, and the No Action Alternative. The EIS analyzes the Proposed Action, compares it to the full route Action Alternatives, and identifies an Agency Preferred Alternative. Additionally, the EIS describes design features such as Applicant Proposed Measures (APMs) and BLM-required Best Management Practices (BMPs) that have been incorporated into the Proposed Action and Action Alternatives, as well as suggested mitigation measures (MMs) identified to avoid and/or reduce environmental impacts of the Proposed Action or Action Alternatives.

1.7 RELATIONSHIP TO FEDERAL, STATE, AND LOCAL POLICIES, PLANS, PROGRAMS, AND LAWS

1.7.1 Federal Policies, Plans, and Programs

1.7.1.1 West-wide Energy Corridors

In 2008, the U.S. Department of Energy (DOE), the BLM, the U.S. Forest Service (USFS), and U.S. DOD issued a Final Programmatic Environmental Impact Statement (PEIS) that evaluated the designation of energy corridors, known as West-wide Energy Corridors (WWECs) or Section 368 corridors (after the section of the Energy Policy Act of 2005 that required agencies to designate them), on Federal lands in 11 western states, including Arizona and California. The PEIS identified energy transportation corridors for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities, and developed interagency operating procedures applicable to planning, construction, operation, and decommissioning of such projects. The Secretaries of the Interior and Agriculture signed Records of Decision (RODs) in 2009 designating Section 368 corridors on BLM and USFS-managed lands in the 11 western states. Based upon the Project route alternatives being considered, a portion of the Project would be within WWEC corridor 30-52.

1.7.1.2 BLM Resource Management Plans

The following RMPs provide management direction for the public lands administered by the BLM that may be crossed by the Proposed Action or Alternatives. While the RMPs allow for multiple uses of public lands, amendments to the RMPs may be necessary to accommodate the Project. Section 3.7 addresses the conformance with the applicable plans. Section 4.7 addresses the environmental consequences associated with applicable plan amendment(s).

- Lower Sonoran Resource Management Plan (BLM 2012a)

- Bradshaw-Harquahala Resource Management Plan (BLM 2010b)
- Lake Havasu Resource Management Plan (BLM 2007)
- Yuma Resource Management Plan (BLM 2010a)
- California Desert Conservation Area Plan (BLM 1980) as amended (BLM 2002, 2016a)

1.7.1.3 Kofa NWR Management Plan

The Kofa NWR and Wilderness and New Water Mountains Wilderness Interagency Management Plan provides long-term management direction for the USFWS-managed Kofa NWR (BLM, USFWS, and AGFD 1996). The New Water Mountains Wilderness is now managed under the Yuma RMP. The Kofa NWR utilizes USFWS policies on appropriateness (USFWS 2006) and compatibility (USFWS 2000) when processing ROW applications.

1.7.1.4 YPG Integrated Natural Resources Management Plan

The YPG Integrated Natural Resources Management Plan guides and documents how the YPG will sustain the military mission while maintaining the health of natural resources. Natural resources management is integrated into the YPG environmental program and military testing and training. The plan's goals and objectives promote sound land management; protection of the environment; and compliance with all relevant laws, regulations, and applicable state and Federal management plans (YPG 2012).

1.7.2 Applicable Federal Laws, Statutes, and Executive Orders

The Proposed Action and Action Alternatives must comply with numerous Federal laws, statutes, executive orders (EO), and regulations as outlined in Tables 1.7-1 through 1.7-3 in Appendix 1.

1.7.3 Relationship to State and Local Policies, Plans, Programs, and Laws

1.7.3.1 Arizona

By Arizona state law, public service utilities are regulated monopolies given the opportunity to earn a fair and reasonable return on their investments (ACC 2014). The ACC has jurisdiction over the quality of service and rates charged by public service utilities.

The ACC's Renewable Energy Standard and Tariff Rules (ACC R14-2-1801–1815), along with other renewable energy mandates, call on the state's electric utilities to produce 15 percent of their electricity from renewable sources by 2025 (ACC 2006). Additional export and scheduling capability are necessary to facilitate delivery of proposed renewable energy to load centers in Arizona; therefore, the Proposed Action and Action Alternatives would assist the state's electric utilities in meeting this goal and would be consistent with the State of Arizona objectives related to renewable energy development. The Project could carry energy from current and future renewable energy projects facilitating renewable energy development and assisting with meeting the state's renewable energy goals.

1.7.3.2 California

The California Renewable Energy Transmission Initiative (RETI) Version 2.0 is a statewide planning process that builds off the science, data, and analysis efforts of the original 2008 RETI process to identify the transmission projects needed to accommodate California's renewable energy goals. Phases 1 and 2 of the 2008 RETI project resulted in the identification and refinement of Competitive Renewable Energy Zones (CREZ), which are areas determined to hold the greatest potential for cost-effective and environmentally responsible renewable energy development. The terminus of the Project (Colorado River Substation) is located within the Riverside East CREZ (California Energy Commission 2008). Therefore, the Proposed Action and Action Alternatives would assist the state in meeting its renewable energy goals.

1.7.3.3 County and Local

Each of the local jurisdictional plans reviewed for this EIS are listed below. Other planning documents were reviewed for additional context or information related to the future uses that were identified in the general plans.

- Riverside County General Plan (Riverside County 2017)
- Riverside County Palo Verde Area Plan (Riverside County 2014)
- Maricopa County Comprehensive Plan (Maricopa County 2016)
- Tonopah/Arlington Area Plan (Maricopa County 2000)
- La Paz County Zoning Plan (La Paz County Zoning Regulations, last updated in 2012)
- City of Blythe General Plan 2025 (City of Blythe 2007a)
- City of Blythe Colorado River Corridor Plan (City of Blythe 2007b)

1.8 TRIBAL CONSULTATION AND COORDINATION

The BLM is consulting with Indian tribes with jurisdiction or interest in the Project (Section 5.3). NHPA Section 106 consultation and coordination is summarized in Chapter 5 (Section 5.5 and Appendix 5).

1.9 ISSUES IDENTIFIED DURING SCOPING

Scoping and public involvement activities are described in detail in the Ten West Link 500kV Transmission Line Project Scoping Report (BLM 2016b; project record) and in Section 5.4.

Comments received during the scoping period were used to develop issues to be addressed in the EIS and were also used to refine and/or create alternatives to the Proposed Action that are addressed in the EIS. Forty-four responses were received with 389 substantive issues within the scope of this EIS identified and categorized into 44 main issue categories (Table 1.9-1 in Appendix 1).

The issues help to make reasoned choices between the alternatives and to ensure impacts are addressed in the EIS.

1.10 SUMMARY OF CHANGES BETWEEN DRAFT AND FINAL

Comments on the Draft EIS (DEIS) (Appendix 8) included such topics as use of BMPs and MMs, property values, wildlife, recreation, land use, and avoiding the Kofa NWR. In response to public comments on the DEIS, information related to impacts to Sonoran pronghorn and lands with wilderness characteristics were clarified. Also, Project specific plans were included in Appendix 2B. Additionally, the BLM removed the Visual Resource Management Class RMP amendments from the Agency Preferred Alternative to maintain manageability of the utility corridor and made various editorial changes to the EIS, such as fixing several figures, clarifying analyses, and making minor corrections.

Between the DEIS and Final EIS (FEIS), design and engineering of the Project was refined and presented in an updated Plan of Development (POD) (DCRT 2019); therefore, acreages of new surface disturbance and the amount of water required for construction was adjusted to reflect this updated information in the FEIS. Of note, the POD was revised by the applicant to reflect the BLM Preferred Alternative, rather than the Proposed Action.

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Chapter 2 Description of the Proposed Action and Alternatives

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the Proposed Action – the requested 200-foot-wide ROW for a 114-mile long transmission line, and associated features along the route proposed by DCRT – and the Action Alternatives.

Detailed information specifically referenced in the sections below is located in Appendix 2. Additional detailed Project information is provided in the Technical Environmental Study (TES), available on the BLM's ePlanning website.

2.2 PROPOSED ACTION AND ALTERNATIVES

2.2.1 ROW Actions

DCRT proposes to acquire a 200-foot-wide ROW for construction, operation, maintenance, and decommissioning of the 500kV line and associated Series Compensation Station (SCS); access roads; and a 20-foot-wide ROW for a 12kV distribution line servicing the SCS. DCRT has estimated a centerline and infrastructure requirements for the Proposed Action and Action Alternatives, taking into account topography, existing development, and other identified design challenges. The proposed Project ROW for the transmission line would include 100 feet on either side of the centerline, for a total width of 200 feet. In some areas the ROW may need to be wider or narrower to accommodate terrain, slope, and/or other facilities. The proposed ROW would likely be adjusted further as a result of final engineering by the Proponent. These potential variations in the ROW are within the scope of the EIS analysis. Duration of the Project disturbance has been described in terms of short term (generally, during construction, projected to be approximately 2 years, and up to 10 years) and long term (generally for the life of the Project anticipated to be up to 50 years, and could be renewed). As proposed, the Project would result in approximately 709 acres of short-term disturbance and 410 acres of long-term disturbance (Appendix 2).

The ROW has been designed to allow for the safe movement and operation of equipment during construction and maintenance, the safe construction of the Project facilities, and to allow for sufficient clearance between conductors and the ROW edge as required by the National Electrical Safety Code (NESC) (2017). While some access roads would be located within the 200-foot corridor, other access roads would be outside of it, however, with the intent to optimize the use of existing roads and trails. DCRT has requested a 50-year ROW grant from the BLM for the purposes of constructing, operating, maintaining, and decommissioning the Project. In addition to the BLM ROW, ROWs and easements would need to be acquired from other Federal, state, and local entities (Section 1.5), as well as private landowners.

2.2.2 Proposed Action

The Proposed Action route is shown on Figure 1-1 and Table 2-1 provides a breakdown of land jurisdictions crossed by the Proposed Action. A description of the proposed facilities, infrastructure, and construction is provided in Section 2.2.5.

Table 2-1 Land Jurisdictions Crossed by the Project in Arizona and California

JURISDICTION	MILES	% OF TOTAL ROUTE DISTANCE
BLM	56.5	49.4
USFWS	24.9	21.8
DOD	0.2	0.2
Reclamation	1.5	1.3
Arizona State Trust	8.1	7.1
Private	23.1	20.2
TOTAL	114.3	100.0

The Proposed Action route is divided into 19 segments (Table 2.2-1 in Appendix 2 and Figure 2-1) to effectively evaluate the Proposed Action in relation to the Action Alternatives. The segment names of the Proposed Action route carry the letter "p" as an identifier, then each segment is numbered sequentially east to west from the APS Delaney Substation to the SCE Colorado River Substation. Division of the Proposed Action route into segments allows for the potential combination of Proposed Action segments with other Action Alternative segments.

2.2.2.1 Amendment of the Yuma RMP

Portions of the Proposed Action route that would not conform to the Visual Resource Management (VRM) classes for lands designated by the Yuma RMP, would include an amendment of the RMP. These potential RMP amendments are detailed in Table 2-2 and Figure 2-2.

Table 2-2 Proposed Action Yuma RMP VRM Class Amendments

SEGMENT*	LENGTH	VRM CLASS	AMENDED VRM CLASS	LENGTH AMENDED (MILES)
p-06	35.7	III	IV	0.6**
p-07	2.1	III	IV	2.1
p-08	0.6	III	IV	0.6
p-09	6.9	III	IV	6.9
p-10	1.1	III	IV	1.1
p-11	4.1	III	IV	3.9
p-12	2.5	III	IV	1.1
p-13	3.5	III	IV	3.5

*Segments only listed if an RMP amendment is included for VRM class within the YFO.

**Only the portion of Segment p-06 west of the Kofa NWR would be amended.

2.2.2.2 Amendment of the CDCA Plan

The LUPA-BIO-PLANT-2 conservation management action (CMA), a requirement of the CDCA Plan, would apply to the Project, due to known occurrences of Harwood's eriastrum (*Eriastrum harwoodii*) within all alternatives in the California section. LUPA-BIO-PLANT-2 states, "Implement an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species (see Appendix Q, Baseline Biology Report, in the Proposed LUPA and Final EIS [BLM 2015a], or the most recent data and modeling)" (BLM 1980).

The purpose of the LUPA-BIO-PLANT-2 CMA is to protect the ecological process of special status plant species in order to sustain viable, healthy populations. Ecological processes include, but are not limited to, pollinator access and movement, habitat change and movement (sand movement in the case of Hardwood's eriastrum), response to climate change, and gene flow. While LUPA-BIO-PLANT-2 prescribes a specific buffer to occurrences, it can be shown that the Project can avoid impacts to the ecological processes that support Harwood's eriastrum populations by incorporation of certain minimization measures (BMPs) into the Project design.

Section II.4.2, Conservation and Management Action LUPA-BIO-PLANT-2 is proposed to be amended to state:

The CDCA Plan of 1980, as amended, is further amended to authorize construction of the Ten West Link Project within 0.25-mile of occurrences of Harwood's eriastrum, provided that a Rare Plant Linear ROW Protection Plan for Harwood's eriastrum is developed and approved by the BLM California State Director. The Rare Plant Linear ROW Protection Plan would meet the DRECP [Desert Renewable Energy Conservation Plan] goal of promotion of the ecological processes in the BLM Decision Area that sustain vegetation types of Focus and BLM Special Status Species and their habitat. The Rare Plant Linear ROW Protection Plan would have the objectives of:

- *Avoidance of take of Harwood's eriastrum individuals to the maximum extent practical; and*
- *Avoidance of impacts to Harwood's eriastrum suitable habitat to the maximum extent practical.*

The California State Director would approve the Harwood's Eriastrum Rare Plant Linear ROW Protection Plan (to be completed before the Notice to Proceed [NTP] is issued) prior to ground or vegetation disturbing activities commencing on public lands in California.

2.2.3 Alternatives and Subalternatives

Four Action Alternatives (which includes the Preferred Alternative described below) to the Proposed Action (Figure 2-3), along with associated subalternatives, are analyzed in this EIS. Action alternatives consist of individual segments (Figure 2-4) that have been compiled into full Alternative Routes and Subalternatives.

2.2.3.1 RMP Amendments

Some of the segments comprising the Alternative and Subalternatives would not be in compliance with the applicable BLM land use plan and would include an RMP amendment for the alternative.

The Yuma RMP (BLM 2010a) would include an amendment to establish a ROW for any segment outside designated BLM utility corridors. The Yuma RMP decision LR-031 would be changed as follows:

To the extent possible, locate new ROWs within or parallel to existing ROWs or ROW Corridors to minimize resource impacts. Consider ROWs outside of corridors on a case-by-case basis through project-specific analysis.

Any amendments would also be included for portions of routes that do not conform to the VRM classes for lands designated by the Yuma RMP. These potential RMP amendments are detailed in Table 2-3 and Figure 2-5 for alternative segments. The CDCA Plan of 1980 would also be amended for alternative segments as described for the Proposed Action in Section 2.2.2.2 and Appendix 2. Several alternatives or subalternatives would include an amendment to the Lake Havasu RMP to include a segment that crosses VRM Class II designated lands in the Lake Havasu FO; such amendment to this RMP would not be necessary under the Proposed Action.

Table 2-3 Proposed RMP Amendments by Action Alternative Segment in Arizona

SEGMENT*	LENGTH (MILES)	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA REQUIRING AMENDMENT	RMP AMENDMENT DESCRIPTION
cb-01	3.2	II	No	Yuma RMP	Establish ROW outside of utility corridor; and change from VRM Class II to VRM Class IV outside BLM utility corridor within 0.3-mile either side of the centerline of segments, or in an area bounded by the viewshed where the segment would be within canyons.
cb-02	2.2	II	No	Yuma RMP	Establish ROW outside of utility corridor; and change to VRM Class IV within 0.3-mile either side of the centerline of segment, or in an area bounded by the viewshed where the segment would be within canyons, for conformance outside utility corridor; or expand existing utility corridor to contain this segment, and in conjunction with other corridor changes, change VRM class to Class IV.

SEGMENT*	LENGTH (MILES)	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA REQUIRING AMENDMENT	RMP AMENDMENT DESCRIPTION
cb-03	4.3	II	Yes - Partial	Yuma RMP	Change to VRM Class IV on portion of BLM-administered public lands within the utility corridor within the viewshed of the canyon.
cb-04	1.9	II & III	No	Yuma RMP	Establish ROW outside of utility corridor; and change to VRM Class IV for the area within 0.3-mile either side of the centerline of the segment, or in an area bounded by the viewshed where the segment would be within canyons.
cb-05	4.4	II & III	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor; and change to VRM Class IV for the area within 0.3-mile either side of the centerline of the segment.
cb-06	1.9	III	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor; and change from VRM Class II to VRM Class IV for the area within 0.3-mile either side of the centerline of the segment.
i-03	19.9	III	Yes - Partial	Yuma RMP	Establish ROW in areas outside the BLM utility corridor to encompass the i-03 route.
i-04	10.5	III	Yes	Yuma RMP	Change the VRM from Class III to Class IV within the BLM utility corridor.
i-05	2.8	III	Yes	Yuma RMP	Change the VRM to Class IV within the BLM utility corridor.
i-06	7.2	III	Yes	Yuma RMP	Change the VRM from Class III to Class IV within the BLM utility corridor.
qn-02	10.8	III & IV	Yes - Partial	Yuma RMP	Change to VRM Class IV 0.3-mile either side of centerline and establish ROW outside of utility corridor.
qs-01	3.1	III & IV	Yes - Partial	Yuma RMP	Change to VRM Class IV 0.3-mile either side of centerline and establish ROW outside of utility corridor.
qs-02	4.8	IV	Yes - Partial	Yuma RMP	Establish ROW in areas outside the utility corridor to encompass the qs-02 route and change to VRM Class IV within the BLM utility corridor.

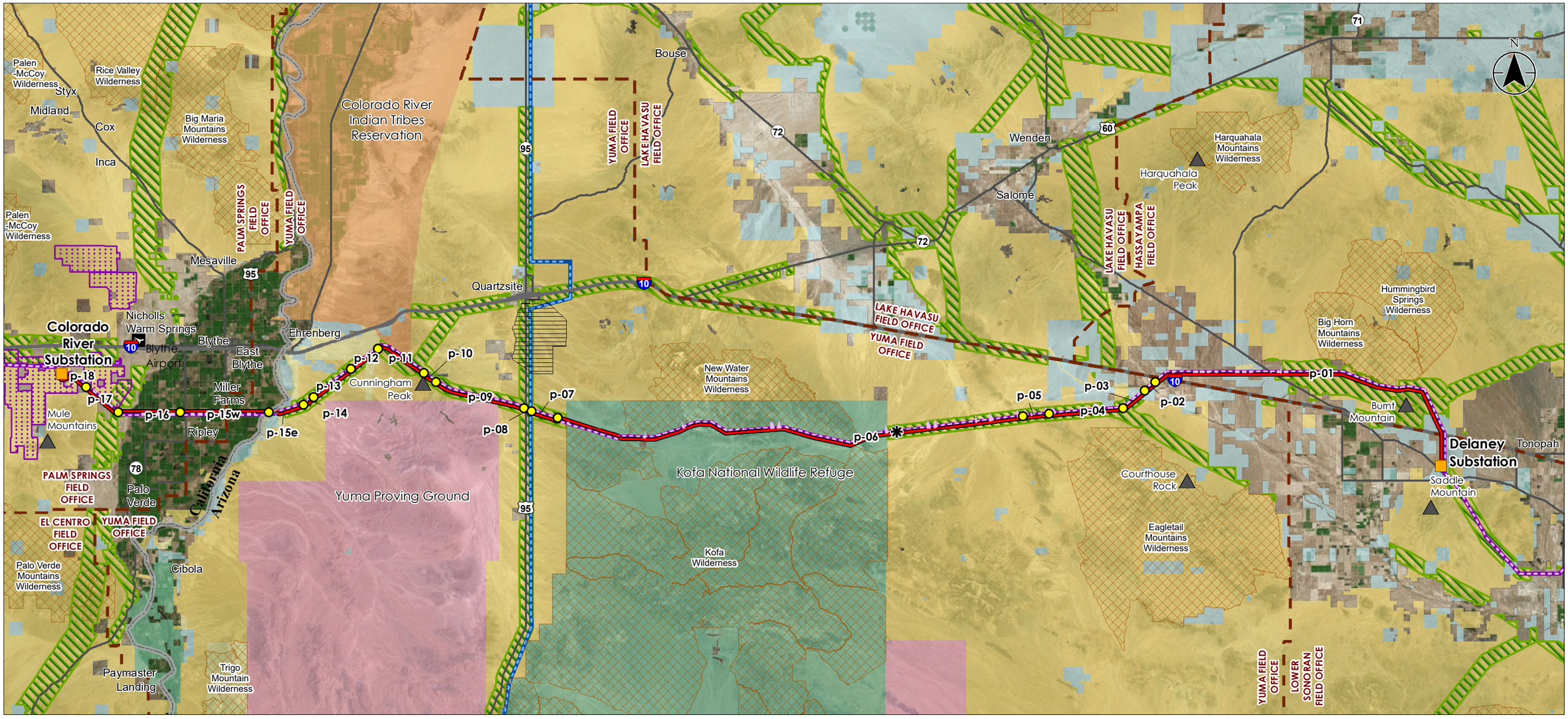
SEGMENT*	LENGTH (MILES)	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA REQUIRING AMENDMENT	RMP AMENDMENT DESCRIPTION
x-01	4.7	II	No	Yuma RMP	Establish ROW outside of utility corridor.
x-02b	3.4	II	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor.
x-03	5.6	III	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor.
x-04	22.7	III	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor.
x-05	10.2	III	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor.
x-06	9.2	III	Yes - Partial	Yuma RMP	Establish ROW outside of utility corridor and change to VRM Class IV 0.3-mile either side of segment centerline.
x-07	7.7	III	Yes	Yuma RMP	Change the VRM in areas of Class III to Class IV within the BLM utility corridor.
in-01	13.9	II and IV	Yes	Lake Havasu RMP	Change the VRM in areas of Class II to Class IV within the BLM utility corridor.

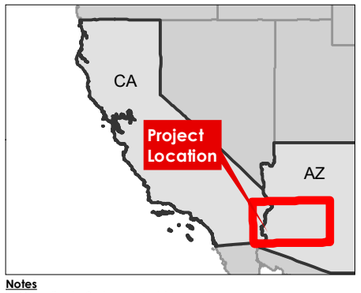
2.2.3.2 Alternative 1: I-10 Route

Alternative 1 would be 111.6 miles long and would generally follow Interstate 10 (I-10) (Figure 2-6, Table 2-4). This alternative route was developed to utilize BLM utility corridors while avoiding the Kofa NWR, Johnson Canyon, YPG, Copper Bottom Pass area, and the area of dense cultural resources in Mule Mountains south of Blythe; and also meet public request for a route that follows I-10 and minimize crossings of VRM Class II land.

Table 2-4 Alternative 1 Jurisdiction

LAND MANAGEMENT LANDS CROSSED	MILES (#)	% OF TOTAL ROUTE DISTANCE
BLM	58.8	52.7
USFWS	0	0
Reclamation	6.4	5.7
DOD	0	0
State Trust	19.4	17.4
Private	25.6	22.9
Indian Lands	1.4	1.3
Total length of route:	111.6	100.0





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Route Segment Node
- Proposed Action*
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Long-term Visitor Area
- Proposed Solar Energy Facility
- BLM Utility Corridor
- Existing NRG Solar Facility
- Peak
- BLM Field Office Boundary
- Wilderness Area

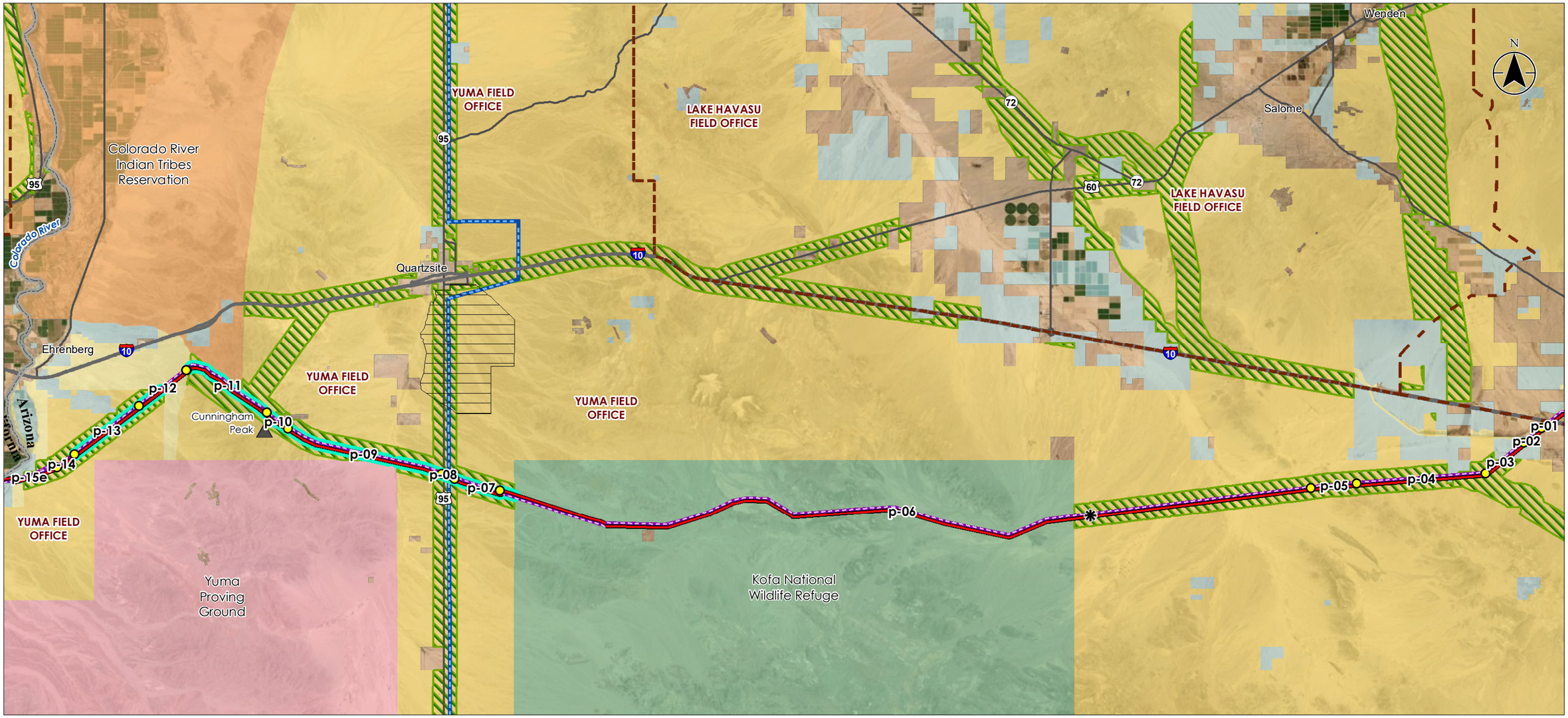
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

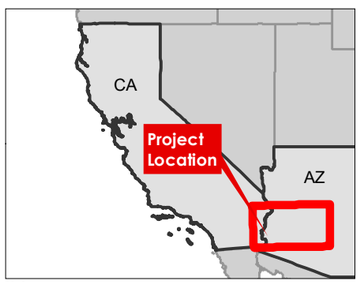
0 9 18 Miles

1:570,240 (At original document size of 11x17)

* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 2-1
Ten West Link
Proposed Action Segments
Overview





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Proposed Series Compensation Station
- Route Segment Node
- Proposed Action*
- Route Segment including Yuma Field Office RMP Amendment
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Long-term Visitor Area
- Peak
- BLM Utility Corridor
- BLM Field Office Boundary

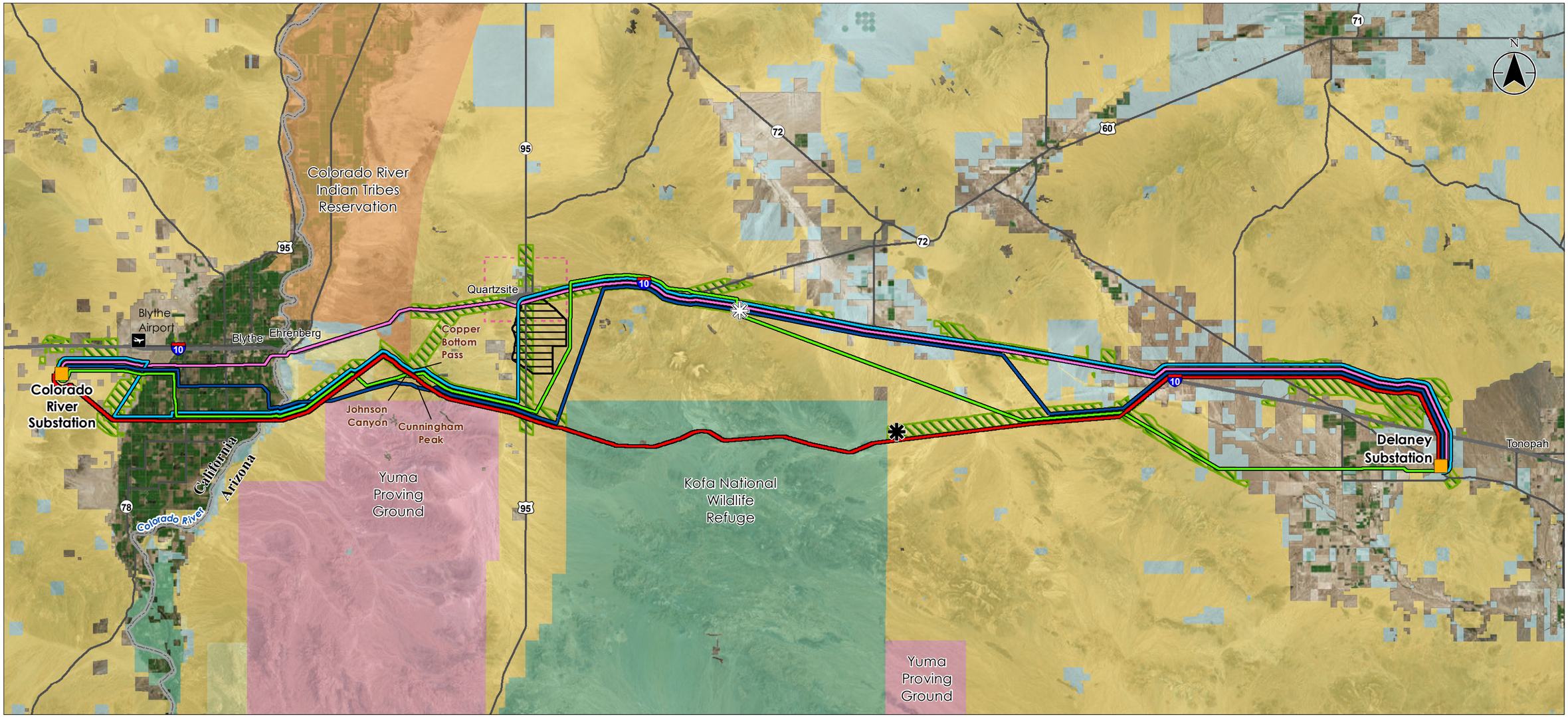
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

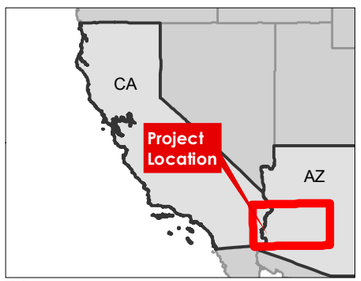
* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

0 5.5 11 Miles

1:327,160 (At original document size of 11x17)

Figure 2-2
Ten West Link
Proposed Action Segments that Would Include Amendment of the YFO RMP





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Proposed Action*
- Alternative 1: I-10 Route*
- Alternative 2: BLM Utility Corridor*
- Alternative 3: Avoidance Route*
- Alternative 4: Public Lands Emphasis Route*
- BLM Utility Corridor^
- BLM Long-term Visitor Area
- Quartzsite Planning Area

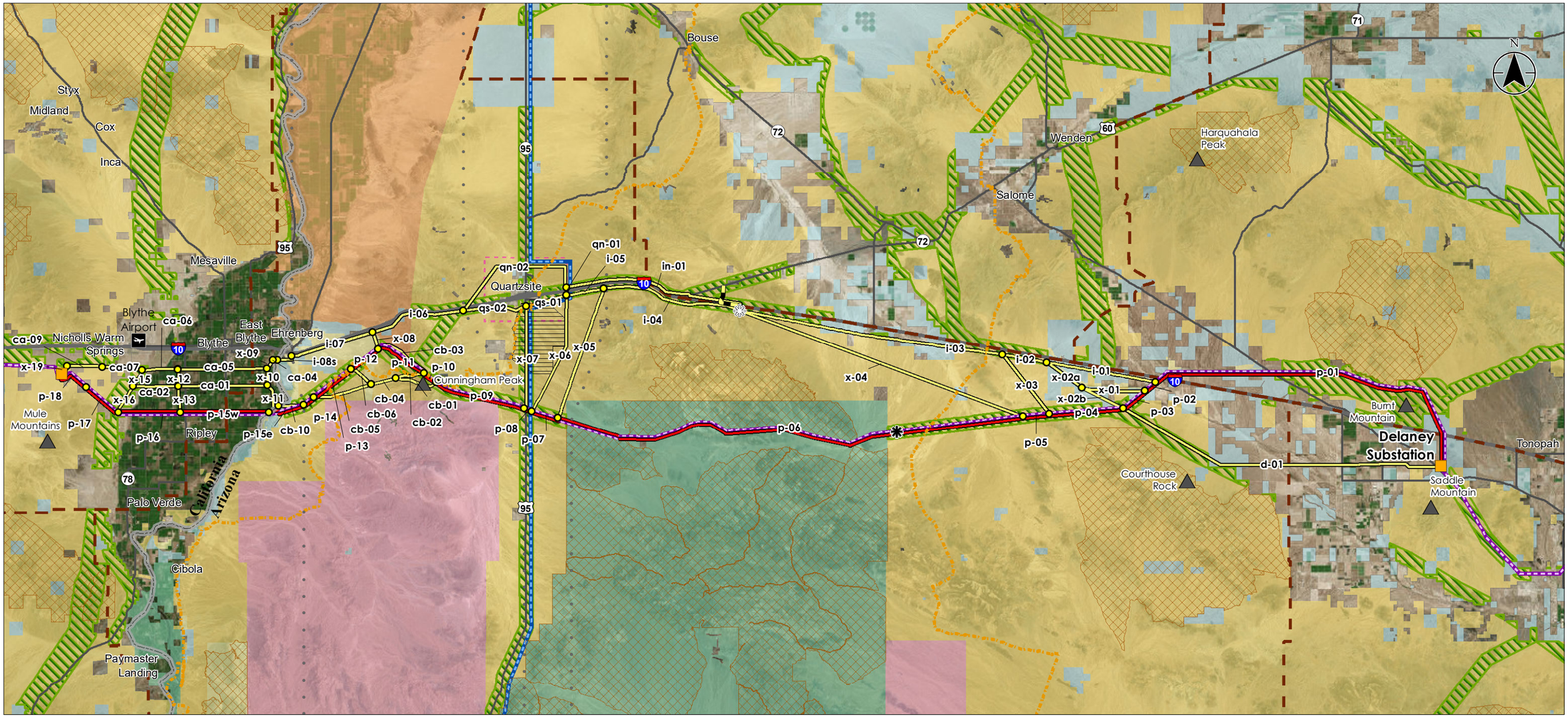
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

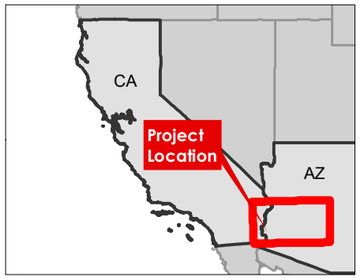
0 9 18 Miles

1:570,240 (At original document size of 11x17)

^ = BLM Utility Corridors were clipped to a 2-mile study area.
* = Routes depicted on this map are cartographically offset up to 1200 meters for display purposes. In some instances, the route turns were modified to represent the overall intent of the route design.

Figure 2-3
Ten West Link
Full Route Alternatives
to the Proposed Action





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Alt SCS 12 kV Distribution Line
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- Proposed Arizona Peace Trail
- BLM Long-term Visitor Area
- Peak
- BLM Utility Corridor
- BLM Field Office Boundary
- Wilderness Area
- Quartzsite Planning Area

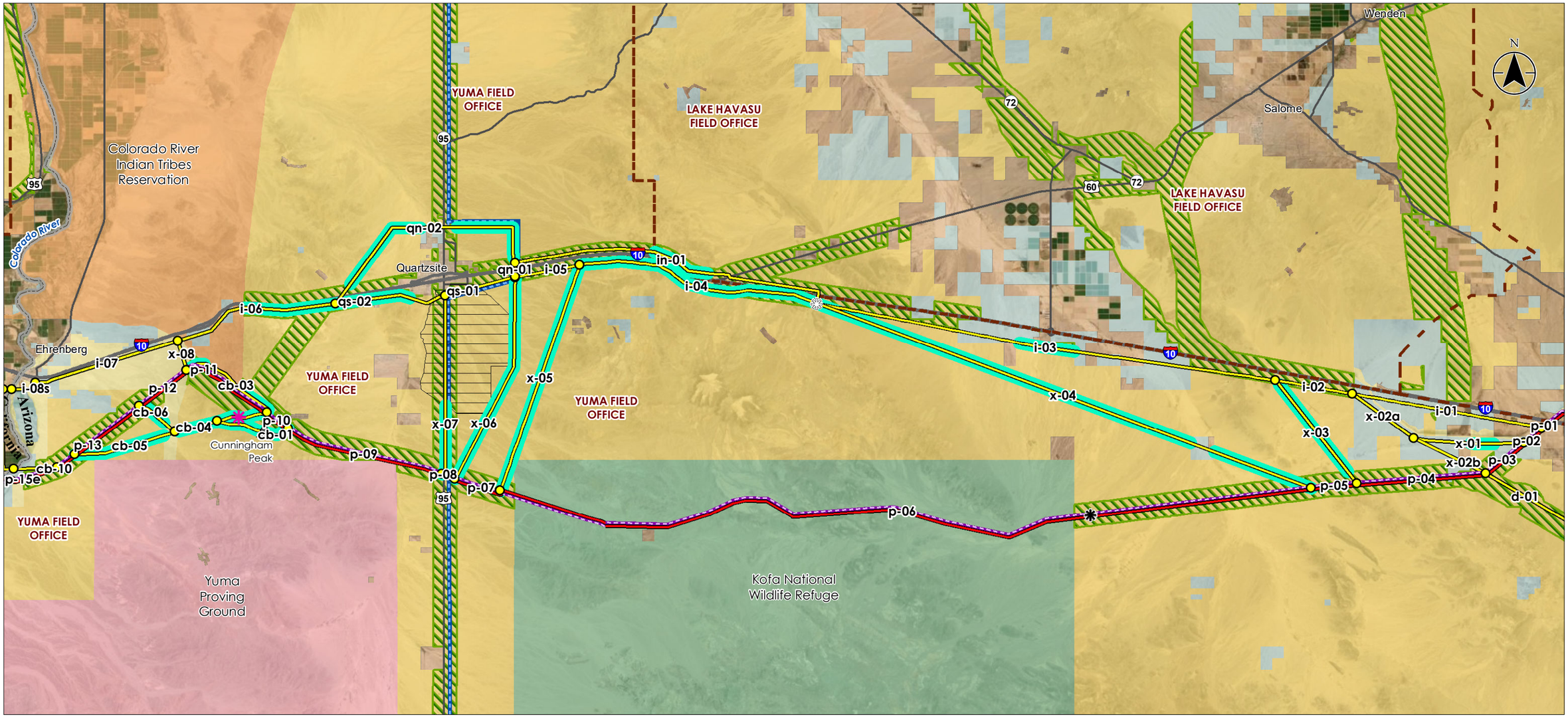
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

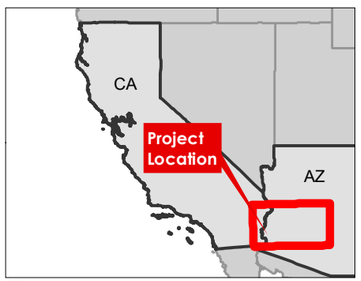
* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

0 9 18 Miles

1:570,240 (At original document size of 11x17)

Figure 2-4
Ten West Link
Action Alternative Segments





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Johnson Canyon
- Route Segment Node
- Proposed Action*
- Alternative Route
- Route Segment including RMP Amendment
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Long-term Visitor Area
- Peak
- BLM Utility Corridor
- BLM Field Office Boundary

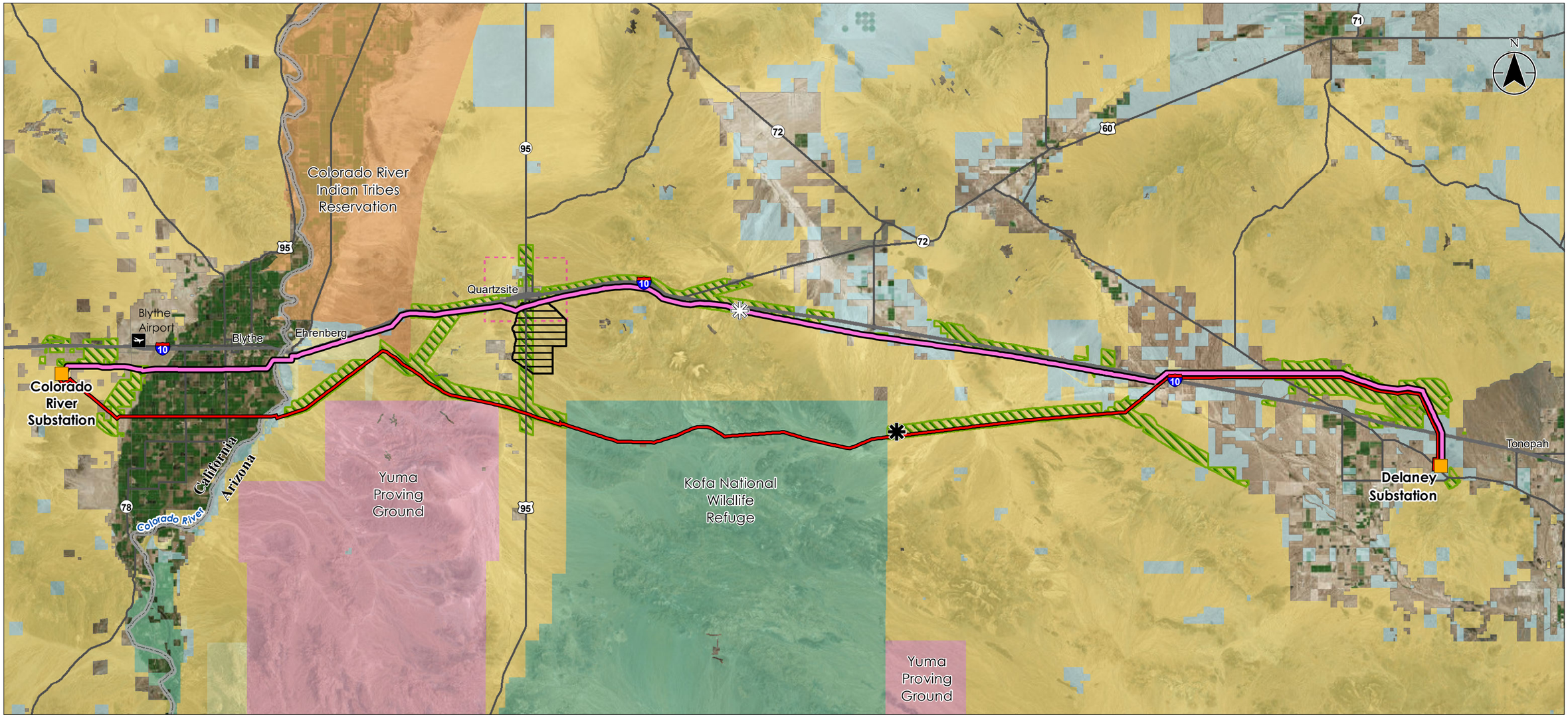
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

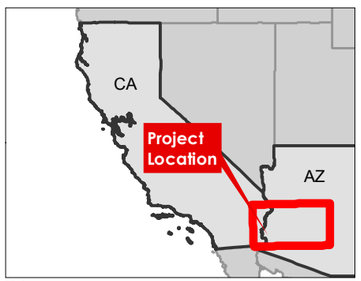
0 5.5 11 Miles

1:327,160 (At original document size of 11x17)

* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 2-5
Ten West Link
Action Alternative Segments that Would Include RMP Amendment





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)

- Proposed Action*
- Alternative 1: I-10 Route
- BLM Long-term Visitor Area
- BLM Utility Corridor^
- Quartzsite Planning Area

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

0 9 18 Miles

1:570,240 (At original document size of 11x17)

^ = BLM Utility Corridors were clipped to a 2-mile Project study area.
* = The Proposed Action is offset 600 meters to the South for display purposes.

Figure 2-6
Ten West Link
Alternative 1: I-10 Route

Appendix 2 details:

- The 18 segments that comprise Alternative 1 in Table 2.2-3;
- The five subalternatives that would also meet the objectives of Alternative 1 in Table 2.2-4; and
- Segment descriptions in Table 2.2-2.

Figures 2.2-1 through 2.2-3, which show the five subalternatives to Alternative 1, are located in Appendix 7.

In addition to the RMP amendments described above, Subalternative 1C includes a segment (Segment in-01, Table 2-3) in the Lake Havasu FO that crosses VRM Class II designated lands. An amendment to the Lake Havasu RMP (BLM 2007) would be included to change the portion of this segment designated VRM Class II to Class IV within the BLM utility corridor.

2.2.3.3 Alternative 2: BLM Utility Corridor Route

Alternative 2 would be 125.8 miles long and would be primarily within existing BLM utility corridors (Figure 2-7, Table 2-5). This alternative route was developed to emphasize the use of BLM utility corridors while avoiding the Kofa NWR, Johnson Canyon, Ehrenberg Sandbowl area, the area of dense cultural resources in Mule Mountains south of Blythe, and residential and other development south of Blythe; minimize impacts to the CRIT reservation and use of private land in California; and place the majority of route crossing VRM Class III.

Table 2-5 Alternative 2 Jurisdiction

LAND MANAGEMENT LANDS CROSSED	MILES (#)	% OF TOTAL ROUTE DISTANCE
BLM	80.1	63.7
USFWS	0	0
Reclamation	1.7	1.3
DOD	0.2	0.2
State Trust	17.6	14.0
Private	26.2	20.8
Indian Lands	0	0
Total length of route:	125.8	100.0

Appendix 2 details:

- The 20 segments that comprise Alternative 2 in Table 2.2-5;
- The five subalternatives that would also meet the objectives of Alternative 2 in Table 2.2-6; and
- Segment descriptions in Table 2.2-2.

Figures 2.2-4 through 2.2-6, which show the five subalternatives to Alternative 2, are located in Appendix 7.

2.2.3.4 Alternative 3: Avoidance Route

Alternative 3 would be 123.0 miles long and was developed to avoid Kofa NWR, Johnson Canyon, the CRIT reservation, the Town of Quartzsite, Ehrenberg Sandbowl area, biologically important backwaters of the Colorado River, the southern end of Blythe, and the area of dense cultural resources in Mule Mountains south of Blythe; and place the majority of the route crossing VRM Class III (Figure 2-8, Table 2-6).

Table 2-6 Alternative 3 Jurisdiction

LAND MANAGEMENT LANDS CROSSED	MILES (#)	% OF TOTAL ROUTE DISTANCE
BLM	82.6	67.1
USFWS	0	0
Reclamation	0.7	0.6
DOD	0.2	0.2
State Trust	14.0	11.4
Private	25.5	20.7
Indian Lands	0	0
Total length of route:	123.0	100.0

Appendix 2 details:

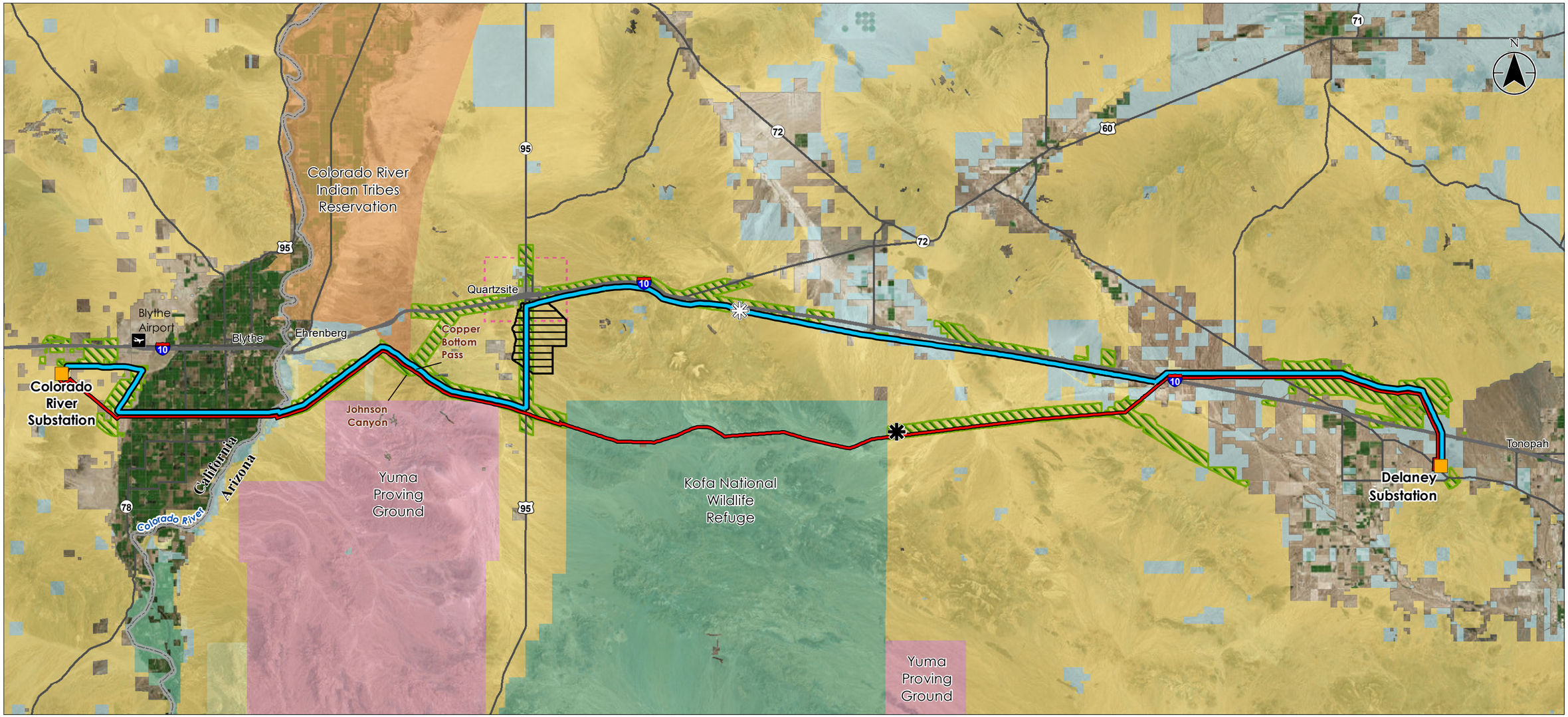
- The 23 segments that comprise Alternative 3 in Table 2.2-7;
- The twelve subalternatives that would also meet the objectives of Alternative 3 in Table 2.2-8; and
- Segment descriptions in Table 2.2-2.

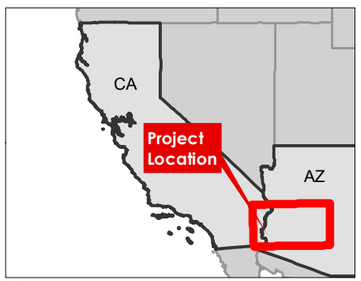
Figures 2.2-7 through 2.2-10, which show the twelve subalternatives to Alternative 3, are located in Appendix 7.

In addition to the RMP amendments described above, Subalternative 3D includes a route segment in the Lake Havasu FO that crosses VRM Class II designated lands in the Lake Havasu FO (Table 2-3). An amendment to the Lake Havasu RMP (BLM 2007) would be included to change the portion of this segment designated VRM Class II to Class IV within the BLM utility corridor.

2.2.3.5 Alternative 4: Public Lands Emphasis Route

Alternative 4 would be 120.3 miles long and generally is on public lands, minimizing state trust lands (Figure 2-9, Table 2-7). This alternative route was developed to avoid the Kofa NWR, state trust land along I-10, the CRIT reservation, the Ehrenberg Sandbowl area, the southern end of Blythe, and the area of dense cultural resources in Mule Mountains south of Blythe; and also maximize use of BLM utility corridors in the Copper Bottom Pass area while placing the majority of route crossing VRM Class III, with slightly less Class II than Alternative Routes 2 or 3.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Proposed Action*
- Alternative 2: BLM Utility Corridor Route
- BLM Long-term Visitor Area
- BLM Utility Corridor^
- Quartzsite Planning Area

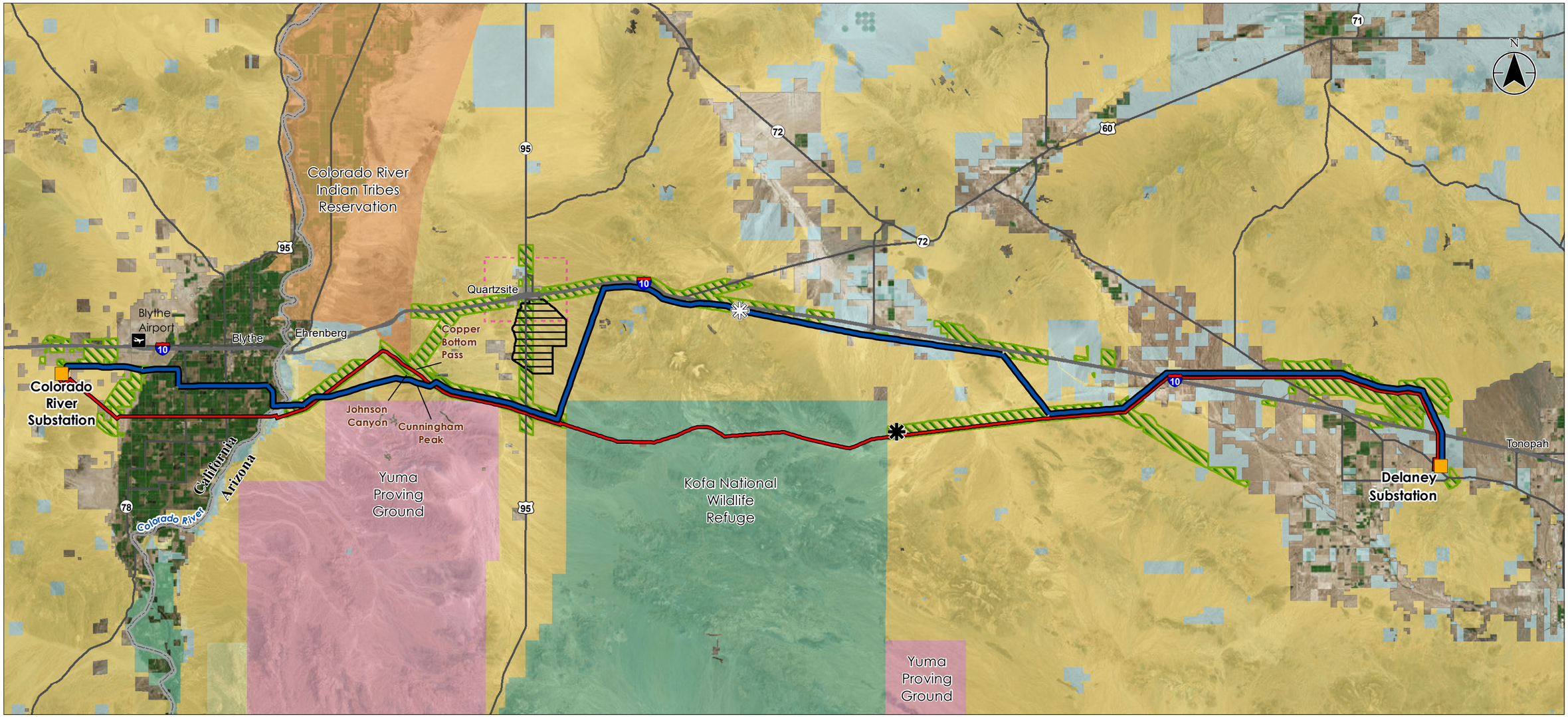
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

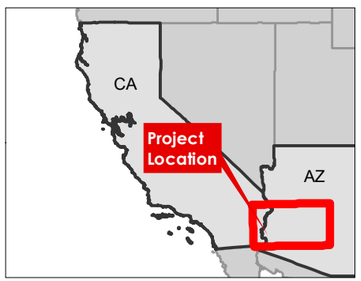
0 9 18 Miles

1:570,240 (At original document size of 11x17)

^ = BLM Utility Corridors were clipped to a 2-mile Project study area.
* = The Proposed Action is offset 600 meters to the South for display purposes.

Figure 2-7
Ten West Link
Alternative 2:
BLM Utility Corridor Route





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Proposed Action*
- Alternative 3: Avoidance Route
- BLM Long-term Visitor Area
- BLM Utility Corridor^
- Quartzsite Planning Area

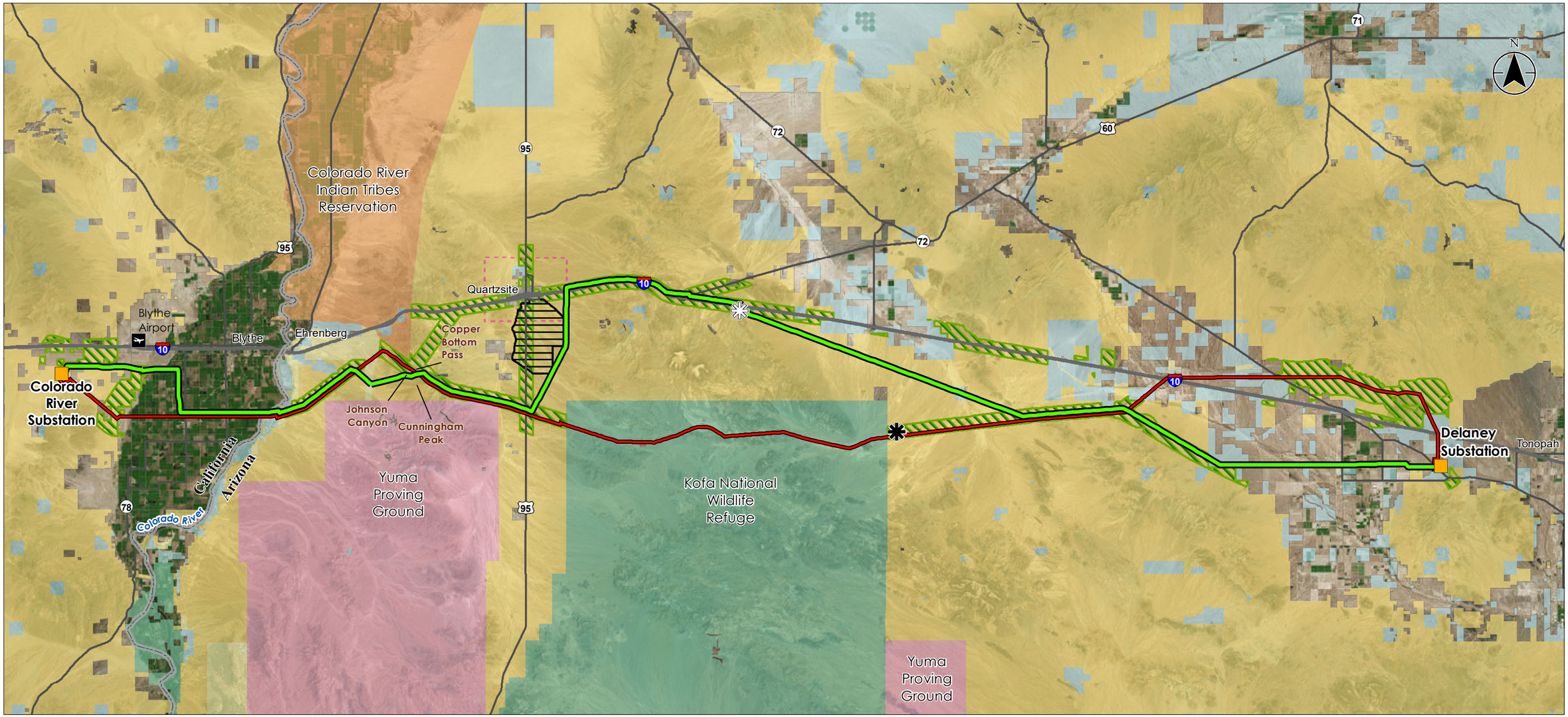
Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

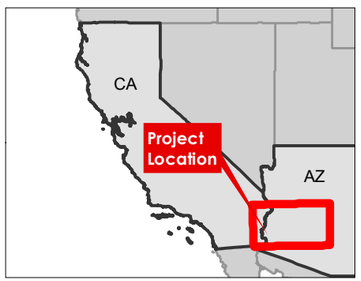
0 9 18 Miles

1:570,240 (At original document size of 11x17)

^ = BLM Utility Corridors were clipped to a 2-mile Project study area.
* = The Proposed Action is offset 600 meters to the South for display purposes.

Figure 2-8
Ten West Link
Alternative 3:
Avoidance Route





Notes
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- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Proposed Action*
- Alternative Route 4: Public Lands Emphasis Route
- BLM Long-term Visitor Area
- BLM Utility Corridor^
- Quartzsite Planning Area

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

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* = The Proposed Action is offset 600 meters to the South for display purposes.

Figure 2-9
Ten West Link
Alternative Route 4
Public Lands Emphasis Route

Table 2-7 Alternative 4 Jurisdiction

LAND MANAGEMENT LANDS CROSSED	MILES (#)	% OF TOTAL ROUTE DISTANCE
BLM	84.6	70.3
USFWS	0	0
Reclamation	0.8	0.7
DOD	0.2	0.2
State Trust	6	4.9
Private	28.7	23.9
Indian Lands	0	0
Total length of route:	120.3	100.0

Appendix 2 details:

- The 23 segments that comprise Alternative 4 in Table 2.2-9;
- The fourteen subalternatives that would also meet the objectives of Alternative 4 in Table 2.2-10; and
- Segment descriptions in Table 2.2-2.

Figures 2.2-11 through 2.2-14, which show the fourteen subalternatives to Alternative 4, are located in Appendix 7.

In addition to the RMP amendments described above, Alternative 4 includes a route segment in the Lake Havasu FO that crosses VRM Class II designated lands in the Lake Havasu FO (Table 2-3). An amendment to the Lake Havasu RMP (BLM 2007) would be included to change the portion of this segment designated VRM Class II to Class IV within the BLM utility corridor.

2.2.3.6 No Action Alternative

NEPA regulations require the No Action Alternative to be included in the alternatives analysis of an EIS (CEQ Regulation Section 1502.14(d)). The No Action Alternative forms the baseline against which the potential impacts of the Proposed Action and Action Alternatives are compared.

Under the No Action Alternative, the BLM would not approve the ROW grant on BLM-administered public lands and none of the BLM RMPs would be amended. The 500kV transmission line would not be constructed across BLM-administered lands as proposed by DCRT.

2.2.4 Agency Preferred Alternative

The BLM has identified Alternative 2, the BLM Utility Corridor Route, utilizing Subalternative 4D, as the Agency Preferred Alternative route (Figure 2-10) for the proposed transmission line, to include the alternative SCS location along Segment i-03 adjacent to I-10 and north of the New Water Mountains; along with design features, APMs, BMPs, and MMs. The Agency Preferred Alternative includes the proposed CDCA Plan amendment (Section 2.2.2.2), proposed Yuma

RMP amendment for authorizing ROWs outside of utility corridors (Segments i-03 and x-05, as discussed in Section 2.2.3.1), and does not include the proposed RMP amendment for VRM class, in order to maintain consistent management of this resource for the length of the corridor in Arizona. Table 2-8 presents affected jurisdiction.

Table 2-8 Agency Preferred Alternative Jurisdiction

LAND MANAGEMENT LANDS CROSSED	MILES (#)	% OF TOTAL ROUTE DISTANCE
BLM	79.3	63.5
USFWS	0.0	0
Reclamation	1.7	1.3
DOD	0.2	0.2
State Trust	17.6	14.1
Private	26.2	20.9
Indian Lands	0.0	0
Total length of route:	125.0	100

Table 2-9 is a summary of short- and long-term disturbance, respectively for the Agency Preferred Alternative. The summary of short- and long-term disturbance (Table 2-9) takes into account changes to structure types on Segments p-07 through p-13, i-04, and x-05 that were made to reduce safety issues associated with high OHV use along those segments.

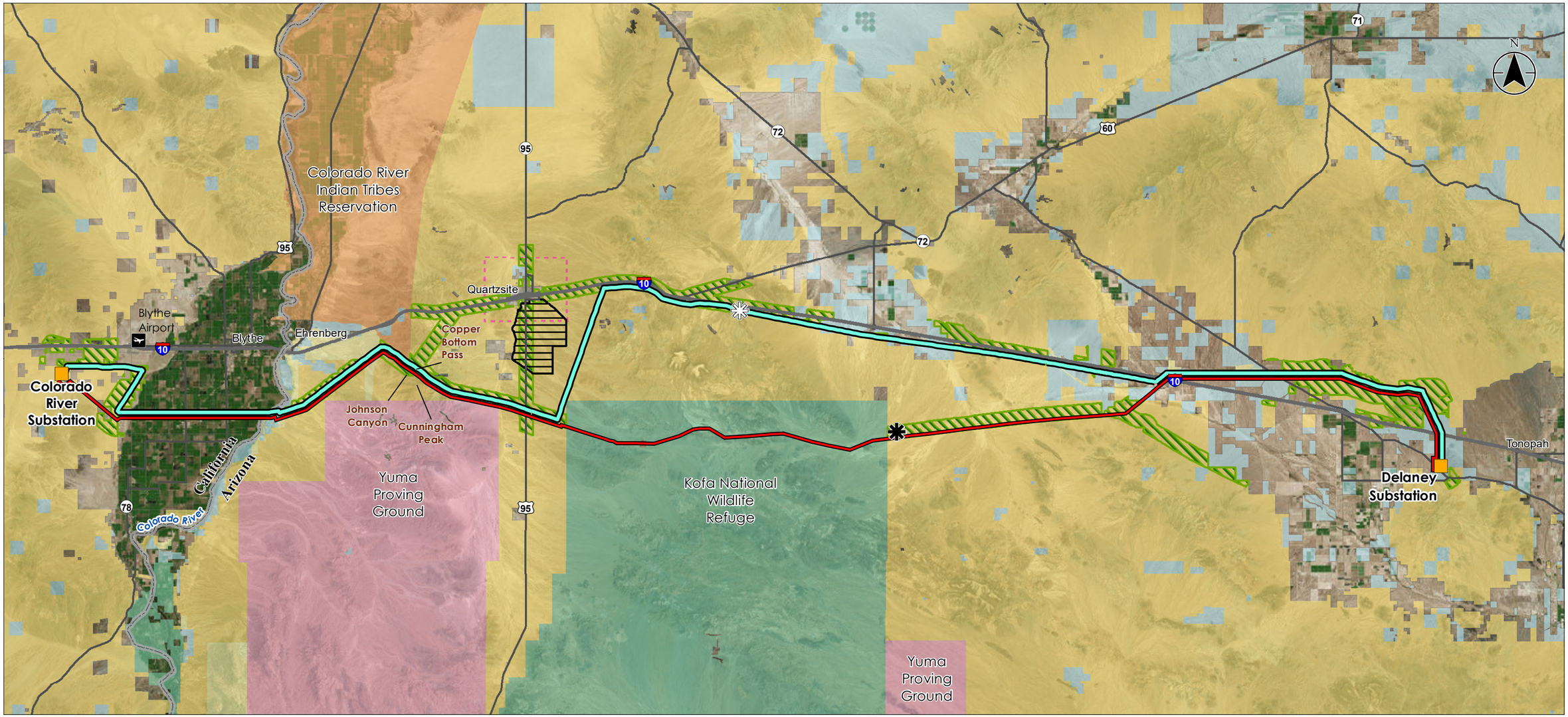
Table 2-9 Short- and Long-Term Disturbance for the Agency Preferred Alternative

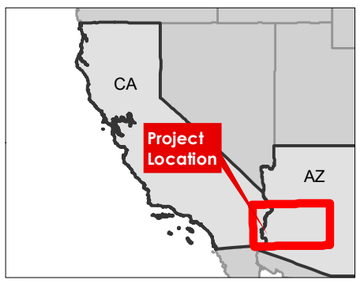
COMPONENT	SHORT-TERM[1] DISTURBANCE (ACRES)	LONG-TERM DISTURBANCE (ACRES)	TOTAL DISTURBANCE (ACRES)
Access Roads		430.8	430.8
Material Staging, Laydown Yards, and Batch Plants	34.5	0	34.5
Fly Yards	33.4		33.4
Structure Foundations and Erection[2]	468.6	41.1	468.6*
Wire Stringing (snubbing and pulling sites)	167.4	0	169.7
Crossings (roads, transmission/power lines, water)	53.3	0	53.3
Series Compensation Station	0	1.7	1.7
Distribution Line	0.8	<0.1	0.8
Total	**758.0**	**473.7**	**1,190.5**
Total Water Requirements - Construction (gallons)	**60,205,532.2**		

[1] Temporary use areas would be located in conformance with BMP-MISC-04 (Appendix 2A, Section 2A.14), disturbed during construction, their use would be temporary, and the acreage reclaimed; however, due to the desert environment, the disturbance effects may be long-term.

[2] Includes mitigation to replace structures with guy lines with self-supporting (no guy lines) structures to mitigate safety issues in areas of high OHV use.

*Long-term foundation disturbance would be within and a subset of the short-term disturbance; therefore, it is not additive to the short-term disturbance in totals.





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0 9 18 Miles

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* = The Proposed Action is offset 600 meters to the South for display purposes.

Figure 2-10
Ten West Link
Agency Preferred Alternative

2.2.4.1 RMP Amendments

Under the Agency Preferred Alternative, the BLM would amend the Yuma RMP to allow approximately 13.5 miles of 200-foot wide ROW on public lands managed by the BLM outside of designated utility corridors for portions of Segments i-03 and x-05.

Under the Agency Preferred Alternative, the BLM would amend the CDCA Plan to allow Project construction within 0.25 mile of occurrences of Harwood's eriastrum as identified in Section 2.2.2.2.

Agency Preferred Alternative Route details are shown on Figure 2.10. Appendix 2 provides additional details:

- Describing the Agency Preferred Alternative route;
- Requiring or recommending changes to reduce impacts; and
- Outlining the benefits of the route.

2.2.5 Proposed Facilities, Infrastructure, and Construction

2.2.5.1 Preconstruction and Construction Activities Overview

Preconstruction activities include refinement of Project design, preconstruction environmental surveys, materials procurement, design, contracting, ROW acquisition from other Federal, state, local (Section 1.5), and private entities; and permitting efforts. Appendix 2 contains additional details regarding preconstruction activities.

Construction of the transmission line(s) would include the following sequence of activities:

- Surveying and staking the transmission centerline, structure locations, new or upgraded access roads, environmental cultural resources sensitive areas, other Project features, and work areas;
- Upgrading or constructing short- and long-term access roads;
- Clearing and grading the structure sites, and short- and long-term work areas;
- Excavating and installing foundations;
- Assembling and erecting structures with short- and long-term work areas;
- Stringing conductors and shield wires;
- Installing counterpoise (structure grounds), where needed;
- Post-construction cleaning up;
- Constructing the SCS and associated power connection to the distribution line; and
- Reclamation

In addition to these activities, other preconstruction and construction components include:

- Conducting preconstruction resource surveys and aerial photography;
- Preparing construction material storage, laydown yards, and concrete batch plants located in previously disturbed areas and areas of lesser ecological sensitivity to the extent practicable;
- Preparing equipment staging areas located in previously disturbed areas and areas of lesser ecological sensitivity to the extent practicable;
- Preparing equipment refueling areas collocated with staging and storage areas where possible and in conformance with the Project Spill Prevention, Control, and Countermeasure Plan;
- Installing flagging, fencing, and signs in areas of active construction activities or where required for employee and public safety;
- Implementing transportation management for Project access and public safety as in conformance with the Project Traffic and Transportation Management Plan;
- Implementing fire protection as identified in the Project Fire Protection Plan;
- Blasting in areas of hard rock not removable by heavy excavators; in conformance with the Project Blasting Plan;
- Implementing erosion/dust control and air quality management in conformance with the Project Erosion, Dust Control, and Air Quality Plan;
- Implementing hazardous materials management in conformance with the Project Hazardous Materials Management Plan;
- Implementing emergency preparedness and response in conformance with the Project Emergency Preparedness and Response Plan; and
- Implementing control of noxious weeds in conformance with the Project Noxious Weed Management Plan.

Appendix 2 contains detailed descriptions of environmental safety and training requirements, construction management measures and controls, including APMs and BMPs (Appendix 2A) for vegetation, weeds, lighting, blasting, topsoil management, and dust control. All of the above referenced plans are listed in Appendix 2B or would be completed before a possible NTP is issued.

2.2.5.2 Transmission Structures

Support structures are proposed to be steel lattice of various configurations; including self-supporting lattice, H-frame lattice, and guyed V (Figure 2.2-15, Appendix 7). In certain high off-highway vehicle (OHV) use areas, self-supporting lattice structures would replace guyed V structures to eliminate hazards to those recreationists (Section 2.4 in Appendix 2). While monopoles are not proposed for the Project, they may be considered for private property if requested by landowners. The structures would be between 72 and 195 feet in height, depending on the span length required and topography, with most being shorter than 142 feet. Span lengths between structures would vary from 400 to 2,300 feet, depending upon terrain conditions, current land use, structure type used, and to achieve site-specific mitigation objectives. However, the typical span would be approximately 1,500 feet. On average, three to eight structures would be placed per mile, depending on the structure type, topography, and angles of the route. Appendix 2 contains additional details regarding structure design and configurations.

2.2.5.3 Foundations and Structure Construction

Each structure type requires specific foundation configurations. The approximate foundations by structure type are as follows (note that soil conditions and environmental and engineering considerations may change the foundation size and depth):

- Guyed V Structure (Tangent): precast concrete foundation 9 by 9 feet by 24 feet deep (one per structure); additional 4 grouted or helical anchors for the guys. If dictated by engineering, 3 foot by 24-foot deep concrete piers could be utilized for guys. Guys would be located within the ROW limits and would include a 1-foot square footprint, typically. Guy anchors would add four 1-foot square disturbance footprints.
- H Frame Steel Lattice (Tangent): pier foundations 3 feet in diameter by 25 feet deep (eight piers per structure or four per tower leg).
- Self-supporting Tangent and Dead-end Structures: pier foundation 4 and 6 feet, respectively, in diameter by 38 feet deep (four per structure).
- Drilled pier (steel monopole): foundation 4 to 6 feet in diameter by 38 feet deep (one per structure).

Helicopter-only foundation construction may result in excavations that must be "hand dug" (i.e., jackhammers and shovels). Foundation dimensions increase when dug by hand due to shoring requirements, safety harness requirements, and retrieval equipment requirements. Additional information is provided in Appendix 2.

A short-term disturbance area of approximately 1.1 acres is estimated for each structure site. The number of structure sites for alternatives would be roughly proportional to the comparative length of each alternative route. Short-term disturbance associated with the Proposed Action, Action Alternative segments, and the Agency Preferred Alternative is detailed in Tables 2.2-11 through 2.2-13 in Appendix 2. Total short-term structure disturbance associated with the Proposed Action and Action Alternatives ranges from approximately 424 acres to 468 acres.

A long-term work area at the base of each structure would be required for long-term maintenance. These areas would be somewhat larger than the structure foundations. The dimensions of the long-term work area for each structure type would be:

- Guyed V Structure: 9 feet by 9 feet (81 square feet), 4 anchors: 1 foot by 1 foot (1 square foot) each;
- H Frame Lattice: two 12 by 18-foot foundation areas (432 square feet);
- Self-supporting Structure: 50 feet by 50 feet (2,500 square feet);
- Steel Monopole: 12 feet by 12 feet (144 square feet).

Each support structure would require the installation of foundations, which are typically drilled concrete piers. The foundation for the structures would be long-term disturbance for the life of the Project. The long-term work area at the base of each structure would be required for long-term maintenance. In addition to the long-term footprint and foundation of the proposed structure, each structure would require a separate permanent work area anticipated to be 50 by 50 feet (<0.1 acre). While revegetation would occur in these work areas, minimal contouring would be performed.

A typical short-term disturbance area of 200 feet by 200 feet (0.9 acre) has been assumed for each structure work area, which would be used for assembly, erection, and crane pads. Short-term disturbance estimates are based on this assumption; however, actual disturbance would be reduced to the minimum size required to the extent practicable, based on site-specific conditions, during field staking prior to construction (see BMP-MISC-02; Appendix 2A, Section 2A.14). Actual dimensions of the temporary area of disturbance may vary, depending on factors such as terrain, structure size, and vegetation but would disturb a maximum of 1.1 acres. Short-term disturbance areas would be specifically identified in conjunction with structure locations and the Access Road Plan in the final POD, which would receive final approval from the BLM prior to construction. Long-term disturbance associated with the Proposed Action, Action Alternative segments, and the Agency Preferred Alternative is detailed in Tables 2.2-11 through 2.2-13 in Appendix 2. Total long-term disturbance from structures associated with the Proposed Action and Action Alternatives ranges from approximately 33.4 to 36.9 acres (Table 2-11).

Appendix 2 contains details of:

- Structure foundations associated with the Project;
- Structure and Foundation Construction;
- Structure types and estimated disturbance for the Proposed Action segments (Table 2.2-11);
- Structure types and estimated disturbance for the Action Alternative segments (Table 2.2-12); and
- Structure types and estimated disturbance for the Agency Preferred Alternative segments (Table 2.2-13).

2.2.5.4 Conductors

The conductors are the wire cables strung between transmission line structures over which the electric current flows. The transmission line would consist of three phases for the single circuit, including a bundle containing multiple conductors per phase. The conductors are typically spaced approximately 18 inches apart in an equilateral triangle configuration. The bundle configuration would be designed to provide adequate current-carrying capacity while minimizing interference from audible noise and radio operations. The minimum conductor height above ground for the transmission line would be 36.25 feet for most of the route and 51.25 feet for the Colorado River crossing, based on NERC, NESC, CPUC GO 95, and DCRT's design standards.

In the process of conductor installation, insulators and stringing sheaves would be installed on the structures (short-term disturbance already accounted for at structure sites), pulling the pilot line through the sheaves, which would connect to and pull the conductor; and pulling/tensioning of the conductor. Short-term disturbance work areas for conductor, ground wire, and optical ground wire (OPGW) pulling, and snubbing sites (where a conductor is temporarily fixed or attached to the ground for conductor-sagging purposes) associated with the Proposed Action and Action Alternatives would range from approximately 152.6 to 176.1 acres.

Appendix 2 provides additional details regarding:

- Short-term disturbance and work areas for conductor, ground wire, and OPGW, pulling and snubbing sites, which are discussed;

- Estimated short-term disturbance for pulling and snubbing for the Proposed Action segments detailed in Table 2.2-14;
- Estimated short-term disturbance for pulling and snubbing for Action Alternative segments detailed in Table 2.2-15; and
- Estimated short-term disturbance for pulling and snubbing for the Agency Preferred Alternative segments detailed in Table 2.2-16.

2.2.5.5 Insulators, Grounding, and Other Hardware

Insulators, which are made of an extremely low conducting material such as porcelain, glass, or polymer, would be used to suspend the conductors from each structure to inhibit the flow of electrical current from the conductor to the ground, the structure, or another conductor.

To protect conductors from lightning strikes, two overhead ground wires would be installed on top of the structures. Current from lightning strikes would be transferred through the ground wires and structures into the ground.

Upon completion of each structure installation, DCRT would measure the structure footing resistance to determine whether its grounding target is met. If structure footing resistance is reached, ground rods would not be required. If the structure footing resistance is not reached, a 5/8-inch by 10-foot ground rod(s) would be installed until the target resistance is reached. If ground rods cannot be driven, or the target resistance cannot be achieved, alternate grounding procedures would be undertaken.

In addition to the conductors, insulators, and overhead ground wires, other hardware would be installed on the transmission structures as part of the insulator assembly to support the conductors and shield wires composed mostly of galvanized steel and aluminum. To the extent possible, electrical hardware would be specified as “corona-free” to reduce the effects of audible noise and electrical stress caused by corona in high-voltage applications.

Other hardware, such as bird flight diverters, not associated with the transmission of electricity may be installed as part of the Project, particularly in the Colorado River crossing area. This hardware may include aerial marker spheres, structure painting, or aircraft warning lighting, as required for the conductors or structures by Federal Aviation Administration (FAA) regulations. Structure proximity to airports and structure height are the main factors determining whether FAA regulations would apply, based on an assessment of wire/structure strike risk (Appendix 2).

2.2.5.6 Series Compensation Station and Distribution Line

A new SCS system would be located within the 200-foot-wide ROW parallel to the existing SCS associated with the DPV1 line and under the Proposed Action, approximately 47 miles from the APS Delaney Substation.

A general layout of the SCS is shown in Figure 2.2-16 (Appendix 7). In this design, the SCS is integrated into the footprint of the transmission line with a 200-foot by 315-foot (1.5 acre) fenced area. Any portion of the SCS disturbance that would be outside the 200-foot wide ROW would be separately authorized. Clearing of all vegetation would be required for the entire SCS area, including a distance of 10 feet outside the fence, for a total long-term disturbance of 1.7 acres. Under the Proposed Action, the new SCS would be connected to the same APS 12kV distribution line used for the existing DPV1 SCS within a 20-foot-wide ROW approximately 1,000 feet long.

Access roads for the transmission lines would be utilized for access to the SCS. The entire perimeter of the SCS would be enclosed with security fencing to protect equipment and prevent accidental contact with energized electrical equipment. A grounding system would be required at the SCS for fault protection and personnel safety. The SCS would not be lighted at night; however, it would have installed lighting to facilitate maintenance and repairs under emergency conditions during nighttime hours. Storm water runoff containment ponds may be installed to moderate the discharge of storm water offsite if determined to be necessary in the course of design.

Two alternative locations for the SCS have been identified. Both alternative locations would be on BLM-administered public land, as shown in Figure 2.2-17 (Appendix 7), less than 75 feet apart (due to scale, maps show one symbol for the alternative SCS location). Specifications for the SCS would be the same under the Proposed Action and Action Alternatives. Either alternative SCS site would be powered via a distribution line connecting to the existing APS 12kV distribution line near the town of Brenda, Arizona. The distribution line for either alternative location would be approximately 3.2 miles long with a 20-foot-wide ROW. A crossing of I-10 would be required for the distribution line. Appendix 2 contains additional details regarding:

- The design of the SCS;
- A description of SCS construction;
- The alternative SCS locations;
- A description of SCS 12kV distribution line construction.

2.2.5.7 Substation Upgrades

The equipment required to interconnect the Project to the Delaney and Colorado River substations is expected to be similar in type and size to the existing equipment at each substation. There would be no new disturbance associated with these installations. Appendix 2 contains additional details regarding the substation upgrades.

2.2.5.8 Access

Access to the ROW would be provided by existing roads and trails, such as those associated with the DPV1 transmission line and nearby pipelines, to the extent practicable. Access for the Project would be in accordance with an Access Road Plan that would be part of the final POD (listed in Appendix 2B).

For analysis purposes, access is divided into the following categories:

- Access Type A – Type A access roads would include existing public or private roads that are parallel to the ROW, or a patchwork of existing roads in the area that would provide access to or would be crossed by Project segments. These roads consist of well-maintained county dirt roads, private roads, and all paved roads. Improvements to Type A roads may include repairs to the roadbed on dirt roads without additional disturbance beyond the existing roadbed width. Surface improvements to the roadbed would only be completed to allow for safe travel conditions.
- Access Type B – Type B access roads would require some level of upgrade to allow sufficient access. In conditions required for construction passage, these roads may be bladed, compacted, and widened to a maximum of 18 feet for travel surface with up to 30 feet of total disturbance overall. This includes the 16-foot travel surface, 2-foot berms on either side, and 5 feet of material displacement on either side of the travel surface in steep terrain. In flat terrain with the exclusion of wash-crossings this total disturbance would be much less, with an approximate 18 feet of total disturbance. In moderate terrain, with the exclusion of wash-crossings, this total disturbance would be approximately 25 feet. In steep terrain with the exclusion of wash-crossings this total disturbance would be approximately 30 feet.
- Access Type C – Type C access roads consist of newly bladed access roads down either side of the centerline of the conductor but within the 200-foot ROW corridor as much as possible. These roads would consist of 16 to 22 feet of travel surface, 2-foot berms on either side, with a maximum of 50 feet of material displacement in steep areas. In areas of flat terrain, except in wash crossings, disturbance would most likely not exceed 22 feet total for travel surface, berms, and material displacement. In areas of moderate terrain, except in wash crossings, disturbance would most likely not exceed 50 feet total for travel surface, berms, and material displacement. Where possible, areas that can support construction activities by drive-and-crush and/or clear-and-cut practices would be implemented.
- Access Type D - Type D access spur roads would be constructed in areas where Type A, B, and C roads provide access to the vicinity of the ROW but are not adequate to provide access to structure locations. These roads would be new spur roads that would be bladed from the main access road to access the structure work areas. New spur roads would consist of native material displacement, and thus require larger disturbance areas in steeper terrain. Travel surfaces for new spur roads would range from 16 to 22 feet with 2-foot berms on either side excluding material displacement. For spur roads in flat terrain, material displacement would not exceed 3 feet on either side for a total of 22 feet if utilizing a 16-foot travel surface. For spur roads in moderate terrain, material displacement would not exceed seven feet on either side for a total of 30 feet if utilizing a 16-foot travel surface. In steep terrain, material displacement would not exceed 76 feet of total disturbance, this includes a 22-foot travel surface, 2-foot berms on either side, and 25 feet of cut/fill on either side. Steep terrain is defined as slopes greater than or equal to 15 percent. Long-term disturbance would consist of the cut, fill, and road base travel surface required for continued operation and maintenance of the line. Total disturbances are estimated and would be calculated during the reclamation period. Where terrain and soil conditions are suitable, non-graded overland access (“drive-and-crush”) would be

utilized. When drive-and-crush cannot be used, vegetation would be cleared, and roads would be cut as determined by terrain, soil, and vegetation ("clear-and-cut"). To the maximum extent possible, roads would cross drainages at grade (low-level crossing). In some cases, road cutting may be needed to drop access roads to the grade of the drainage bottom. Any material moved by road cutting would be cast upland and not deposited in washes.

- Access Type E – Helicopter Access – In areas of particular biological, topographical, archaeological, or visual concerns, a helicopter may be used to assist with Project construction. Areas where helicopters would be used would also include the use of the other types of access roads (Types B, C, D), as possible. Roads would be used by light pick-up trucks or OHV for crew and tool access, and/or equipment whose tracks can adequately stay within the confines of the road disturbance boundaries without risk of roll-over or equipment failure due to stress loading of slope. However, all activities required for transmission line construction that would require large vehicles and equipment such as semi-trucks, tractor-trailers, and lo-boys would be conducted by helicopter application. Currently helicopter construction is expected for Segments p-10, p-11, cb-01, and cb-02.

Access routes are displayed on Figures 2.2-18 through 2.2-21 (Appendix 7).

Appendix 2 contains additional details regarding:

- Access associated with the Project;
- Access types and associated widths provided in Table 2.2-17;
- Proposed Action segments access disturbance estimates provided in Table 2.2-18;
- Action Alternatives segments access disturbance estimates provided in Table 2.2-19;
- Agency Preferred Alternative segments access disturbance estimates provided in Table 2.2-20; and
- Helicopter access.

2.2.5.9 Induced Currents on Adjacent Facilities

AC transmission lines, such as the Project, have the potential to induce currents on adjacent metallic structures such as other transmission lines, railroads, pipelines, fences, or structures that are parallel to or cross the transmission line(s). Conducted currents on these facilities (directly to ground) occur during fault conditions. Prior to initiation of construction activities, an electrical study would be conducted to determine the extent and type of anti-corrosion mitigation that would be required. The gradient wires that may be required could be installed by different methods; trenching, ripping, or a combination of both. Appendix 2 contains additional detail regarding the induced currents, construction details for gradient control wires, and distribution supply lines for cathodic protection.

2.2.5.10 Temporary Use Areas

Temporary use areas would be required for material staging, laydown yards, and helicopter fly yards during construction. These areas would be selected based upon the final Project alignment and located in previously disturbed areas to the extent practicable. Material laydown yards and staging yards would be utilized during construction. An average of one material staging/crew

show-up area per 20 line-miles is expected for the Project, currently identified in Tonopah, Quartzsite, Salome, and Blythe. Material laydown areas, not to exceed four, would be within or adjacent the ROW. Staging areas would be fenced with locked gates and may have security. Temporary staging areas would be powered by local distribution lines if available and necessary, or by diesel generator; in California, renewable energy sources would be used where feasible and available. Some staging areas would also be used for concrete batch plant operations. Batch plants would be co-located with material staging and laydown yards to the extent feasible and would not require additional short-term disturbance.

Because the length of the Action Alternative routes is not substantially different from the Proposed Action route, there would not be a difference in disturbance from temporary use areas anticipated.

Appendix 2 contains additional details regarding:

- Temporary use areas associated with the Project.

2.2.5.11 Existing Utility Lines and ROW Crossings

A number of existing electric utility ROWs are present near the Project which would require spanning or encroachment. The Proposed Action would cross the Central Arizona Project (CAP), major roadways, including I-10, Arizona State Route (SR) 95, California SR 78, and local roads in Maricopa, La Paz, and Riverside Counties, where structures would need to be placed outside of existing ROWs.

Appendix 2 provides additional details regarding:

- Existing utility lines and ROW crossings;
- Estimated disturbance for guard structures for the Proposed Action segments in Table 2.2-21;
- Estimated disturbance for guard structures for the Action Alternative segments in Table 2.2-22; and
- Estimated disturbance for guard structures for the Agency Preferred Alternative segments in Table 2.2-23.

Figure 2.2-22 (Appendix 7) illustrates a typical guard crossing.

2.2.5.12 Construction Water Requirements

Water would be required for concrete structure foundation construction at the batch plants and dust control during construction. Water would be obtained from private wells and/or municipal supplies with permitted and allocated water rights. Foundation and concrete details pertaining to water use are provided in Table 2.2-24. Water requirements for the Proposed Action, Action Alternatives segments, and the Agency Preferred Alternative are estimated in Tables 2.2-25 through 2.2-27 in Appendix 2.

2.2.5.13 Disposal and Cleanup

Construction would generate non-hazardous solid wastes, including material packaging, concrete, hardware and scrap metal. However, the volume of these wastes is not expected to be substantial. Personal trash would be removed from the ROW on a daily basis. Construction waste (boxes, crates, etc.) would be removed from the transmission ROW shortly after each crew completes their specific task on site. The solid wastes generated during construction would be hauled away for recycling or disposal at approved disposal sites.

2.2.5.14 Construction Reclamation

Construction reclamation, including cleanup, soil stabilization, and revegetation would occur at the end of the construction process, as described in Appendix 2.

2.2.5.15 Construction Workforce and Schedule

The Project is expected to be constructed in two simultaneous work fronts with over 100 workers on each work front. The SCS construction effort would require approximately 40 workers. Crew parking would be located at one of the material storage yards closest to the work area. Appendix 2 includes the estimated number of workers and types of equipment required to construct the proposed transmission line and SCS, presented in Tables 2.2-28 and 2.2-29, and equipment trip estimates for construction and reclamation, presented in Table 2.2-30. DCRT would commence construction upon timely receipt of necessary permits and ROW approvals. Construction is estimated to require 585 days for the transmission and distribution lines; and 472 days for the SCS. Table 2.2-31 in Appendix 2 outlines the construction task, phase, and anticipated duration.

2.2.5.16 Project Construction Closeout

Upon completion of construction and commissioning for the Project, DCRT and the construction contractor(s) would coordinate with the Compliance Inspection Contractor (CIC), BLM, and other permitting agencies to conduct final on-the-ground inspections of Project conditions. After BLM's determination of successful construction completion on BLM-administered lands, the CIC would submit a final summary report to the BLM Authorized Officer documenting the construction process. When the BLM Authorized Officer determines that construction (including initial reclamation activities) has been completed in compliance with the ROW grant, ROD, POD, and any other applicable permits, the CIC, construction contractor(s), and DCRT's construction roles would be considered complete. This determination would initiate the post-construction monitoring phase for reclamation success for which DCRT would remain responsible.

2.2.5.17 Estimated Disturbance Summary

Tables 2-10 and 2-11 summarize the total disturbance acreages and water requirements for the Proposed Action and Action Alternative routes.

2.2.6 Project Operation and Maintenance

After construction, Project operation and maintenance would be an ongoing activity including ROW safety requirements, transmission line inspections, preventative and emergency maintenance, distribution line maintenance, vegetation management including trimming and removal of vegetation within the ROW (wire zone as shown in Figures 2.2-23 a and b, Appendix 7), SCS maintenance, substation maintenance, and long-term access to the ROW through general road maintenance and installation of signs and markers. More information on energy use during operations and maintenance, radio or television interference, contingency planning, emergency procedures, and compatible uses is provided in Appendix 2.

Table 2-10 Short-Term Disturbance by Alternative

SHORT-TERM[1] DISTURBANCE (ACRES)								
ALTERNATIVE	STRUCTURES	MATERIAL STAGING AREA	SCS DIST LINE	HELICOPTER STAGING	GUARD CROSSINGS	SNUBBING AND PULLING SITES	TOTAL SHORT-TERM DISTURBANCE	TOTAL WATER USE - CONSTRUCTION
Proposed Action	426.8	34.5	<0.1	33.4	42.8	171.5	709.1	56,803,096.2
Alternative 1	423.5	34.5	0.8	0	36.9	152.6	648.3	56,082,251.9
Alternative 2	469.7	34.5	0.8	33.4	49.0	167.4	754.8	59,760,221.8
Alternative 3	462.0	34.5	0.8	49.3	47.6	173.9	768.1	59,054,799.3
Alternative 4	455.4	34.5	0.8	56.9	37.6	175.2	760.4	56,744,282.2
Preferred Alternative	468.6	34.5	0.8	33.4	53.3	167.4	758.0	59,639,956.0

[1] Temporary use areas would be disturbed during construction, their use would be temporary, and the acreage reclaimed; however, due to the desert environment, the disturbance effects may be long-term.

Table 2-11 Long-Term Disturbance by Alternative

LONG-TERM DISTURBANCE (ACRES)						
ALTERNATIVE	LINE MILES	SCS	SCS DIST LINE	ACCESS ROADS	STRUCTURES	TOTAL LONG-TERM DISTURBANCE
Proposed Action	114.3	1.7	<0.1	375.2	33.1	410.0
Alternative 1	111.6	1.7	<0.1	354.9	33.6	390.3
Alternative 2	125.8	1.7	<0.1	424.5	36.5	462.8
Alternative 3	123.0	1.7	<0.1	429.2	35.4	466.4
Alternative 4	120.3	1.7	<0.1	435.1	31.2	468.1
Preferred Alternative	125.0	1.7	<0.1	430.8	41.1	473.7

2.2.7 Termination and Decommissioning

Should the ROW and facilities no longer be needed, the transmission lines and associated facilities would be decommissioned. Subsequently, conductors, insulators, concrete pads for the SCS and associated facilities, and hardware would be dismantled and removed from the ROW. Transmission structures would be removed, and foundations broken off at least 2 feet below ground surface. All areas of long-term disturbance on BLM-managed lands would be reclaimed in accordance with the Decommissioning Plan approved by the BLM prior to issuance of the ROW grant[1]. A performance and reclamation bond for BLM-managed lands, based on a reclamation cost estimate provided by the applicant and reviewed, modified as needed, and approved by the BLM, is required per BLM bonding policy.

Access routes and other sites disturbed during decommissioning would be reclaimed and revegetated in accordance with a Decommissioning Plan for BLM-managed lands to be approved by BLM. Additional details regarding termination and decommissioning are provided in Appendix 2.

2.2.8 Applicant Proposed Measures and BLM Best Management Practices

Design features for the Project include BMPs, standard operating procedures, APMs, and requirements from RMPs and BLM manuals. These design features would be applied to reduce and minimize impacts to resources from the Project.

Current BLM mitigation policy would be applied to address impacts of the Project that cannot be avoided or minimized to an acceptable level. Project APMs and BMPs are described in Appendix 2A.

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist. Those CMA measures that were determined to be applicable to the Project are described in Appendix 2C.

2.2.9 Alternative Segments Considered but Eliminated from Detailed Analysis

Alternative segments were identified by BLM through a combination of both internal and public scoping (Table 2.2-2, Appendix 2). Public scoping comments that resulted in alternative segments being identified included: segments that avoid the Town of Quartzsite, segments within BLM utility corridors, segments that avoid sensitive cultural resources, and segments that avoid Johnson Canyon and the Kofa NWR. Public scoping also raised other potential alternatives that did not result in alternative segments being identified, since the suggested alternative was either not applicable (i.e., the Proposed Action segments already avoided wilderness) or not relevant to the Project (i.e., development of a route and substation for the Brenda Solar Energy Zone).

[1] There would be reclamation of lands with long-term, Project disturbance, but the majority of reclamation would occur once construction is completed and the transmission line is energized (Section 2.2.5.14 and Appendix 2).

Screening of the alternative segments against screening criteria identified potential alternative segments, or portions thereof, that did not meet the criteria for reasonable alternatives, and therefore, these alternative segments will not be carried forward in the EIS. Reasons for elimination of alternatives included identification of known conflicts with a use or sensitive resource, redundancy with an alternative already included in the EIS for detailed study, and technical infeasibility. Additional information regarding the alternative segments considered but eliminated from detailed analysis is provided in the Project record. Appendix 2 provides a summary of alternative segments not carried forward for detailed analysis in Table 2.2-32 and these are shown on Figures 2.2-24 through 2.2-27 (Appendix 7).

2.3 COMPARISON OF IMPACTS OF ALTERNATIVES CONSIDERED

Table 2-12 provides a summary of the key resource (Section 4.1) impacts of the combined segments for the Proposed Action and each Action Alternative route, as well as the Agency Preferred Alternative, as presented in detail in Chapter 4.

Appendix 2 contains a comparison of impacts by segment, and by alternative and subalternatives, in Tables 2.2-33a-b, 2.2-34a-b, 2.2-35a-c, and 2.2-36a-d; and Tables 2.2-37 through 2.2-41, respectively.

Table 2-12 Comparison of Alternatives and Impacts

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
Land ownership (miles)	BLM	56.5	58.8	80.1	82.6	84.6	79.4
	Reclamation	1.5	6.4	1.7	0.7	0.8	1.7
	USFWS	24.9	0.0	0.0	0.0	0.0	0.0
	DOD	0.2	0.0	0.2	0.2	0.2	0.2
	Arizona State Trust	8.1	19.4	17.6	14.0	6.0	17.6
	Private	23.1	25.6	26.2	25.5	28.7	26.2
	Indian Lands	0.0	1.4	0.0	0.0	0.0	0.0
	Total Length	114.3	111.6	125.8	123.0	120.3	125.0
Ground disturbance	Short-term Acres	709.1	648.3	754.8	768.1	760.4	758.0
	Long-term Acres	410.0	390.3	462.8	466.4	468.1	473.7
BLM RMP Conformance	VRM	8 segments include amendments	1 segment includes amendment	5 segments include amendments	6 segments include amendments	7 segments include amendments	No amendments
	Corridors	Conform	3 segments with amendment	2 segments with amendment	5 segments with amendment	5 segments with amendment	3 segments with amendment
	RMP Amendments and Conformance	Amendments Included (Yuma RMP, CDCA Plan)	Amendments Included (Yuma RMP, CDCA Plan)	Amendments Included (Yuma RMP, CDCA Plan)	Amendments Included (Yuma RMP, CDCA Plan)	Amendments Included (Yuma and Lake Havasu RMPs, CDCA Plan)	Amendments Included (Yuma RMP, CDCA Plan)
Other Plan conformance (Federal, county, municipal)		USFWS Kofa NWR determined not appropriate; would conform with all others.	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan.	Same as Alternative 1.	Not consistent with La Paz County Zoning Plan.	Same as Alternative 3.	Same as Alternative 3.
Soil Resources	Soils disruption of sand transport and dunes	Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Uses Segments p-17 and p-18. Negligible disruption of sand transport or dunes during construction and operation.	Soil loss/erosion risk similar to Proposed Action. Uses Segments ca-07, ca-09, and x-19 which would have negligible to minor impact on sand transport and dunes during construction and operation.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.
	Total acres of soil disturbance	1,086.0	1,004.9	1,181.0	1,199.0	1,197.2	1,190.5
	Susceptibility to wind erosion	High west of Colorado River.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/ communities	Some minor long-term habitat loss for structures and access roads, but entire Project would occur in an area where linear facilities and roads already exist. Short- and long-term impacts from clearing of temporary use areas pending restoration but impacts reduced due to adjacency of existing disturbances. Microphyll wash habitat would not be affected.	Similar to the Proposed Action, but in areas where no linear facilities and few roads exist these impacts would be moderate. Up to 0.5 acre of microphyll wash would be crossed but there would be a 200-foot setback and would be spanned through micrositing.	Similar to the Proposed Action, but in areas where no linear facilities and few roads exist these impacts would be moderate. Up to 2.6 acre of microphyll wash would be crossed but there would be a 200-foot setback and would be spanned through micrositing.	Similar to the Proposed Action, but in areas where no linear facilities and few roads exist these impacts would be moderate. This route crosses more undeveloped areas, therefore the loss of native habitat/communities is greater than the other alternatives. Up to 0.5 acre of microphyll wash would be crossed but there would be a 200-foot setback and would be spanned through micrositing.	Same as Alternative 1.	Same as Alternative 2.
	Noxious weeds	Negligible to minor impact with APMs and BMPs but increased abundance of existing invasives that are already present.	Negligible to minor long-term impacts due to facilitating increased abundance of non-native plants, especially in dune habitats. APMs and BMPs would reduce impact.	Minor long-term impacts due to facilitating increased abundance of non-native plants, especially in dune habitats. APMs and BMPs would reduce impact.	Moderate long-term impacts due to facilitating spread and increased abundance of non-native plants into new areas, especially into the Dome Rock Mountains and dune habitats. APMs and BMPs would reduce impact.	Same as Alternative 3.	Same as Alternative 2.
	Special Status Plant Species	Approximately 0.6 mile of proposed access roads would cross suitable Harwood's eriastrum habitat; in total, approximately 3.3 acres of suitable habitat would be impacted by Project activities. Negligible to minor impact with APMs and BMPs.	Approximately 5.6 mile of proposed access roads would cross suitable Harwood's eriastrum habitat; in total, approximately 27.3 acres of suitable habitat would be impacted by Project activities. Minor to moderate impact with APMs and BMPs.	Similar to Alternative 1.	Similar to Alternative 1.	Similar to Alternative 1.	Similar to Alternative 1.
	Increased avian electrocution risk	Electrocution risk for raptors reduced by APMs, BMPs, and APLIC standards. Increased hazard of collision at the Colorado River crossing and over agricultural lands would be reduced by matching structure spacing and conductor heights with existing facilities.	Similar to the Proposed Action. However, the collision risk at the Colorado River crossing is higher than under the Proposed Action because the crossing is not adjacent to existing facilities.	Similar to the Proposed Action.	Similar to the Proposed Action. However, the collision risk at the Colorado River crossing is higher than under the Proposed Action because the crossing is not adjacent to existing facilities.	Similar to the Proposed Action.	Similar to the Proposed Action.

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
	Increased predation potential from artificial perches	Increased predation on desert tortoise and small mammals, reptiles, and invertebrates from raptors due to artificial perch sites; minimized by use of APMs and BMPs.	Similar to the Proposed Action.	Similar to the Proposed Action.	Similar to the Proposed Action.	Similar to the Proposed Action.	Similar to the Proposed Action.
	Displacement via construction	Loss of habitat, small mammal and tortoise burrow crushing under vehicles, displacement due to disturbance for tortoise. Minor short-term construction displacement impact to bighorn sheep in Copper Bottom Pass. Impacts minimized through use of APMs and BMPs.	Similar to the Proposed Action. Negligible impacts to bighorn sheep.	Similar to the Proposed Action.	Similar to the Proposed Action. quality habitat.	Similar to the Proposed Action. Route would be close to a wildlife water in Johnson Canyon.	Similar to the Proposed Action.
	Increased access to remote areas resulting in displacement via human activity including increased recreation access	Negligible long-term impacts to wildlife and habitats; area already impacted by transmission lines and pipeline corridors.	Negligible long-term impacts to wildlife and habitats by facilitating increased recreational access to remote areas.	Similar to Alternative 1.	Major long-term impacts to bighorn sheep in the Dome Rock Mountains by facilitating increased recreational access to remote areas.	Major long-term impacts to bighorn sheep in the Dome Rock Mountains by degrading high quality habitat and facilitating increased recreational access to remote areas.	Similar to Alternative 1.
	Impacts to native wildlife habitat and designated management areas	Project would cross approximately 25 miles of quality habitat for Sonoran desert tortoise, 0.6 mile of Mojave fringe-toed lizard habitat, and is within habitat used by reintroduced Sonoran pronghorn. Passes through Cunningham Peak, a bighorn sheep lambing area. Impacts to wildlife habitats minimized through use of APMs and BMPs. According to USFWS, major, unmitigable, adverse effect to management of Kofa NWR for wildlife, including Sonoran pronghorn and bighorn sheep.	Project would cross only a minor amount of mostly degraded habitat for Sonoran desert tortoise and is not within Sonoran pronghorn habitat. Negligible impacts to bighorn sheep. Minor short- and long-term impact to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts on 4 miles of habitat.	Minor impact on Sonoran desert tortoise habitat, and negligible impact on Sonoran pronghorn. Avoids Mojave desert tortoise habitat. Passes through Cunningham Peak, which is nearly pristine bighorn sheep habitat and a bighorn sheep lambing area (major impact). Impacts to wildlife habitats minimized through use of APMs and BMPs.	Minor impact on Sonoran desert tortoise habitat, and negligible impact on Sonoran pronghorn. Passes through Cunningham Peak, which is nearly pristine bighorn sheep habitat and a bighorn sheep lambing area (major impact). Impacts to wildlife habitats minimized through use of APMs and BMPs.	Minor impact on Sonoran desert tortoise and Sonoran pronghorn habitat. Passes through Cunningham Peak, which is nearly pristine bighorn sheep habitat and a bighorn sheep lambing area (major impact). Impacts to wildlife habitats minimized through use of APMs and BMPs.	Same as Alternative 2.

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
	Migratory birds	Negligible to minor impacts from noise of construction causing displacement, increased predation from raptors, loss of nests, risk of collision with towers and lines (especially at Colorado River crossing and over agricultural lands); minimized by use of APMs and BMPs.	Similar to Proposed Action. Additional hazard at the Colorado River crossing because there are no existing structures to match.	Similar to Proposed Action.	Similar to Proposed Action. Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines, and additional hazard at the Colorado River.	Similar to Proposed Action.	Similar to Proposed Action.
	Special Status Animal Species	Sonoran pronghorn potential major impact on Kofa NWR. Crosses Mojave and Sonoran desert tortoise habitat, Mojave fringe-toed lizard potential impacts (crushing, displacement) from construction and increased predation by ravens; minimized by APMs and BMPs.	Similar to Proposed Action, except impacts to special status species on Kofa NWR would not occur.	Similar to Alternative 1. Increased, minor short- and long-term impact to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts on 4 miles of habitat.	Similar to Alternative 1.	Similar to Alternative 1.	Similar to Alternative 1. Increased, minor short- and long-term impact to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts on 4 miles of habitat.
Cultural Resources	Damage or loss of a cultural site or potential site under federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains. Note: Continued consultation with Native American tribes and/or other interested parties potentially may identify additional resources of concern.	Known National Register of Historic Places (NRHP)-eligible sites and sites requiring NRHP evaluation: 66 (cultural resources survey coverage: 39.3%). Known site density: 11.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 164. Key resources include trails, intaglios, and prehistoric habitation sites with potential human remains, particularly along Segments p-17 and p-18 that cross the eastern base of the Palo Verde Mesa. Areas of tribal concern (NRHP-listed Ripley Intaglio Site, NRHP-listed Mule Tank Discontinuous Rock Art District, Limekiln Wash Intaglio Site, and	Known NRHP-eligible sites and sites requiring NRHP evaluation: 23 (cultural resources survey coverage: 30.7%). Known site density: 5.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 75. Key resources projected to occur include trails and intaglios.	Known NRHP-eligible sites and sites requiring NRHP evaluation: 50 (cultural resources survey coverage: 32.5%). Known site density: 7.8 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 150. Key resources projected to occur include trails and intaglios. Areas of tribal concern (NRHP-listed Ripley Intaglio Site and Limekiln Wash Intaglio Site) are in the vicinity of this alternative route.	Known NRHP-eligible sites and sites requiring NRHP evaluation: 35 (cultural resources survey coverage: 24.4%). Known site density: 9.4 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 134. Key resources projected to occur include trails.	Known NRHP-eligible sites and sites requiring NRHP evaluation: 41 (cultural resources survey coverage: 23.2%). Known site density: 10.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 170. Key resources projected to occur include trails. Areas of tribal concern (NRHP-listed Ripley Intaglio Site, NRHP-listed Eagle tail Petroglyph Site, and Limekiln Wash Intaglio Site) are in the vicinity of this alternative route.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 49 (cultural resources survey coverage: 30.0%). Known site density: 8.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 132. Key resources projected to occur include trails and intaglios. Areas of tribal concern NRHP-listed Ripley Intaglio Site and Limekiln Wash Intaglio Site) are in the vicinity of this alternative route.

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
		Indian Well Site) are in the vicinity of this proposed route.					
Issues of Concern to Indian Tribes	Existing and new access	Potential impacts to areas of Indian tribal concern due to new access or access restrictions will be studied in an access analysis that will be a required stipulation of the Programmatic Agreement (PA; Appendix 2D).	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
	Native infrastructure* and the interconnectedness of the landscape.	10 segments contain relevant concerns, including trails.	4 segments contain relevant concerns, including trails and intaglios.	12 segments contain relevant concerns, including trails.	13 segments contain relevant concerns, including trails.	11 segments contain relevant concerns, including trails.	12 segments contain relevant concerns, including trails.
	Places of elevated spiritual importance	5 segments contain relevant concerns, including intaglio or petroglyph sites. Two segments pass through a prehistoric cultural landscape that include the Mule Tank Discontinuous Rock Art District.	4 segments contain relevant concerns, including intaglios.	2 segments contain relevant concerns including intaglios.	1 segment contains relevant concerns.	3 segments contain relevant concerns.	2 segments contain relevant concerns, including intaglios.
	Colorado River	1 segment crosses the Colorado River; concerns were expressed about the Colorado River, and its influence on their spiritual belief and cultural history.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
	Treatment of human remains	1 segment includes a site with calcined bone consistent with a human cremation.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.
	Intrusion on pristine landscapes	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	3 segments would be an intrusion on pristine landscapes.	3 segments would be an intrusion on pristine landscapes.	1 segment would be an intrusion on pristine landscapes.

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
Land Use	Land use authorizations and ROWs and other Plan compliance	Short-term conflict with access to ROWs during construction; minor with Quartzsite; noncompliant with Kofa NWR Plan.	Same as Proposed Action except Alternative 1 would avoid the Kofa NWR and the YPG, would cross through more ASLD land. It would not be consistent with Town of Quartzsite or La Paz County plans.	Same as the Proposed Action except inconsistent with La Paz County Zoning Plan and the Quartzsite General Plan. Avoids the Kofa NWR.	Same as the Proposed Action except avoids Kofa NWR. Inconsistent with La Paz County Zoning Plan.	Same as the Proposed Action except would not cross Kofa NWR. Inconsistent with La Paz County Zoning Plan.	Same as the Proposed Action except avoids Kofa NWR; non-compliant with La Paz County Zoning Plan.
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Negligible to minor effects to recreation areas short-term due to access restrictions; negligible effects long-term as already impacted by DPV1 line. Negligible to moderate effects to OHV routes and Arizona Peace Trail short-term, and negligible long-term, with MMs. Negligible effects to hunting.	Greater impacts to long-term recreation where route varies from Proposed Action as power lines would be new and may impact the quality of the recreation experience. Minor to major effects to La Posa long-term visitor area (LTVA), Dome Rock Camping Area, and the Ehrenberg Sandbowl OHV area. Kofa NWR would not be crossed. Otherwise the Same as Proposed Action.	Long-term recreation quality similar to Proposed Action except in Quartzsite area where powerline would be new to the landscape (negligible to minor). Two Alternative 2 segments would cross the La Posa LTVA (minor to moderate impact), but, by comparison to Alternative 1, Dome Rock Camping Area would not be crossed by Alternative 2.	Long-term recreation quality similar to Proposed Action except where powerline would be new to the landscape (negligible to minor). Would not cross the La Posa LTVA, Dome Rock Camping Area, Kofa NWR, Copper Bottom Pass, or Johnson Canyon. Otherwise similar to the Proposed Action.	Long-term recreation quality similar to Proposed Action except where powerline would be new to the landscape (negligible to minor). Would run adjacent to the La Posa LTVA but would avoid Dome Rock Camping Area and Kofa NWR. Would run through Johnson Canyon. Otherwise similar to the Proposed Action.	Negligible to minor effects to recreation areas short-term due to access restrictions; negligible effects long-term as already impacted by DPV1 line. Avoids LTVA. Negligible to moderate effects to OHV route and Arizona Peace Trail short-term, negligible long-term, with MMs. Negligible effects to hunting.
Socioeconomics & Environmental Justice (EJ)	Employment; Tax collection & revenue; Population or population displacement; Non-market values and ecosystem services; Revenue from recreation sector; Local economy; Reductions in property values; EJ Populations; disproportionate adverse impacts to EJ populations.	Short-term increase in employment; increased revenue from taxes short and long-term; short-term negligible impacts to recreation sector, non-market values. Short-term negligible impacts to property values. Negligible long-term impact to population. Local economic impacts would include short-term increase in employment and long-term facilitation of renewable energy generation facilities. EJ populations present but would not experience disproportionate adverse impacts.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.

CHARACTERISTIC OR RESOURCE IMPACT		PROPOSED ACTION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	AGENCY PREFERRED ALTERNATIVE
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations.	The Proposed Action route would avoid visual impacts to the Town of Quartzsite. Additionally, the Proposed Action route would avoid direct visual impacts to CRIT land and to sensitive recreational users of Johnson Canyon. This route would not meet VRM Class objectives and would include amendment of the Yuma RMP for Segments p-13 through p-16. In California, this route would follow the existing transmission line across private agricultural lands and cross BLM lands into the Colorado River Substation, meeting VRM Class objectives.	The Alternative 1 route would consolidate disturbance and development along I-10, large portions of which would be within BLM utility corridors. This route would have greater visual impacts to the Town of Quartzsite and would have the greatest visual impact to numbers of viewers in the Project Area, due to proximity along I-10. However, a greater portion of the route on BLM-administered lands would meet VRM Class objectives, with only Segments i-03 through i-06 including amendment of the Yuma RMP to ensure conformance with VRM Class objectives. In California, this route would cross private agricultural lands north of the existing transmission line, impacting a new set of residential viewers and road users. On BLM lands, VRM Class objectives would be met.	The Alternative 2 route would visually impact the portion of the Project east of Quartzsite similar to Alternative 1, and the portion of the Project west of Quartzsite similar to the Proposed Action. Views of recreationists in the LTVA and travelers on SR 95 would be impacted by the Project paralleling SR 95; however, the portion of the route in this area would be within a BLM utility corridor. This alternative would include an amendment of the Yuma RMP for Segments x-07 and p-09 through p-13 to ensure conformance with VRM Class objectives. In California, this route would follow the existing transmission line across private agricultural lands and cross BLM lands in utility corridors into the Colorado River Substation, meeting VRM Class objectives.	The Alternative 3 route would impact the portion of the Project east of Quartzsite similar to Alternative 1; except it would reduce the visual effects to travelers along I-10. The Project would avoid visual impacts to the Town of Quartzsite and minimize visual impacts to recreationists in the LTVA. West of US 95, visual impacts would be similar to the Proposed Action, except it would include an amendment of the Yuma RMP for Segments cb-01, cb-04, and cb-05 to ensure conformance with VRM Class objectives. In California, this route would shift the visual impacts of the Colorado River crossing north and would visually impact a different set of local residents and road users. Segments located on BLM-administered land would meet the VRM Class objectives and be within utility corridors.	Alternative 4 would minimize visual impacts to travelers on I-10. However, the route would follow the boundary of the LTVA, impacting the views of recreationists in that area West of US 95, visual impacts would be similar to the Proposed Action, except the Project would be routed through Johnson Canyon, impacting the views of recreationists in that area. This alternative would include amendment of the Yuma RMP for Segments x-06 and p-13 to ensure conformance with VRM Class objectives. In California, the visual impacts would be the same as the Proposed Action, until the Alternative 4 route turns north on Segments x-12 and 13, connecting to Segment ca-06. This portion of the route would not follow other existing transmission infrastructure and would be on private land visually impacting a different set of local residents and road users. Impacts from Segments ca-07, ca-09, and x-19 would meet the VRM Class objectives within utility corridors.	East of Quartzsite, the Agency Preferred Alternative would have the same impacts as Alternatives 1 and 2. The Agency Preferred Alternative would avoid visual impacts to the Town of Quartzsite, the LTVA, and travelers along US 95. This alternative would follow the Proposed Action route and have the same visual resource impacts through the Copper Bottom Pass area. Impacts for the remainder of the route would be the same as those described for Alternative 2. This alternative does not include any RMP amendments for VRM Class. Instead, for management consistency the corridor would remain VRM Class III and impacts to visual resources would be addressed through application of APMs, BMPs, and MMs. These measures would serve to reduce impacts to visual resources to the extent practical. However, in some areas the VRM Class may not be met, especially for sensitive viewers.

Sources: Jurisdiction from Table 2-1, and Appendix 2 – Tables 2.2-1 and 2.2-2; Disturbance from Appendix 2 - Tables 2.2-37 through 2.2-41.

* Native infrastructure: Elements of the landscape, either cultural or natural, important to Indian tribes. Elements of Native infrastructure on the landscape may include, but are not limited to, prehistoric trail networks and cultural resources sites, natural landmarks, and areas used for resource procurement.

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2.4 MONITORING AND MITIGATION

Appendix 2A provides Project design features, the APMs proposed by DCRT, and BMPs provided by BLM, which are included as part of the Proposed Action and any Action Alternative; however, additional monitoring and MM would be necessary (Appendix 2, Section 2.4). These MM are in response to potential environmental impacts identified in Chapter 4 or Appendix 4 and are above and beyond identified APMs and BMPs. They would be included and apply to the Agency Preferred Alternative (Section 2.2.4). Additionally, WAPA would require a Mitigation Action Plan (to be completed before the NTP is issued), if impacts were not addressed through implementation of BMPs, APMs, and MMs.

Those CMAs that are addressed by MMs are provided in parenthesis following the measures.

No mitigation would be required by the BLM for: air quality and greenhouse gases; geology, minerals, or soil resources; paleontological resources; land use; special designations, management allocations, or wilderness resources; noise; socioeconomics; environmental justice; and water resources. The APMs and BMPs would adequately address these resources.

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Chapter 3 Affected Environment

CHAPTER 3 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

Detailed information specifically referenced in the sections below is located in Appendix 3. All figures with in-text references with three-digit figure numbers (i.e., 3.X-X) not shown in this chapter are contained in Appendix 7. All figures with two-digit in text references (3-X) are contained within this chapter. References, Acronyms, Abbreviations, Glossary, and Index are located in Appendix 6. Additional baseline data is provided in the TES available on the BLM's ePlanning website.

3.1.1 General Setting of Project Area

The Project Area extends across southwestern Arizona into southeastern California. It is within the North American Deserts Ecoregion (Level I division) (Commission for Environmental Cooperation n.d. [no date]) and the Sonoran Basin and Range subdivision (Level III division) (EPA 2013a), which is distinguished by palo verde-cactus vegetation including saguaro, cholla, and agave cacti. This region has large tracts of Federally owned lands. Winter rainfall decreases from west to east, while summer rainfall decreases from east to west (EPA 2013b). The climate is characterized by being the driest in the US.

The Project Area is within the Basin and Range Physiographic Province, Sonoran Desert subdivision, with approximately 20 percent mountains and 80 percent plains. The topography is characterized by mountain ranges that are roughly parallel. The basins between the ranges are relatively flat with gentle slopes next to the mountains (Fenneman 1931) that vary from hills and buttes up to mountains rising 4,000 feet above sea level (asl). The desert plains mostly lie below 2,000 feet elevation (Fenneman 1931).

The economy of the region has historically been based on irrigated agriculture, livestock grazing, and mining (Commission for Environmental Cooperation 1997). Federal and state trust lands include commercial, recreational, range, and undeveloped lands. Private land includes residential, commercial, industrial, and undeveloped areas. The primary types of land within the study areas and adjacent to the Project Area are undeveloped lands and rural areas. The Project location is shown in Figure 1-1.

3.1.2 Resources Brought Forward for Analysis

Based on internal (agency and cooperator) and external (public) scoping, or issue identification, a number of issues and concerns were identified for analysis in this EIS (Appendix 1, Table 1.9).

The study area varies by resource value or use, depending on the geographic extent of the resource or use and the extent of the effects of the Proposed Action and Action Alternatives on a resource or use.

Current conditions are characterized within the study areas. The study areas were determined to allow routing flexibility for final design, to allow adequate geographic coverage for where direct and indirect impacts could occur, and to characterize the broader environment where the Project would be located.

While all resources identified for analysis in the EIS are required to be addressed, some resources are "key" to distinguishing between alternatives and to the decision-making process: soil resources, biological resources, cultural resources, concerns of Indian tribes, land use, recreation, socioeconomics, environmental justice, and visual resources. Brief summaries of baseline conditions for "non-key" resources follow in the section below (Section 3.2), while more detailed descriptions of "key" resources are provided in the sections that follow (Sections 3.3 through 3.11).

3.2 NON-KEY RESOURCES

3.2.1 Air Quality and Climate Change

The air quality study area is a 31-mile (50 kilometer [km]) radius around the Proposed Action and Action Alternatives. A 31-mile radius was chosen to be consistent with minimum air quality analyses required by the EPA's Prevention of Significant Deterioration regulations. For purposes of greenhouse gas assessment, the existing conditions in each state are described. Current air quality conditions in the study area were obtained from the EPA's AirData website for the nearest monitor locations for each pollutant considered (carbon monoxide [CO], nitrogen oxides [NO_x], ozone, particulate matter less than 10 micrometers [PM_{10}], particulate matter less than 2.5 micrometers [$PM_{2.5}$], and sulfur dioxide [SO_2]). Given the rural, unpopulated nature of the study area, concentrations of most pollutants are well below the National Ambient Air Quality Standards (NAAQS). The exception is ozone; the eastern portion of the study area near Phoenix is in a nonattainment area. EPA estimated that Arizona greenhouse gas (GHG) (CO_{2e}) emissions were approximately 92.3 million metric tons per year for calendar year 2000. The California Air Resources Board estimated 440.4 million metric tons of CO_{2e} emissions in that state in 2015 (CARB 2017a).

3.2.2 Geology and Minerals

The study area for geology and mineral resources is a 4,000-foot corridor encompassing the Proposed Action and Action Alternatives. The study area for geologic hazards is 50 miles from the Project Area for historic seismicity, 20 miles from the Project Area for Quaternary faulting, and a 2-mile corridor encompassing the Proposed Action and Action Alternative segments for other geologic hazards. The study area extends from the Mojave Desert Province of southern California and into the Basin and Range Province. The Mojave Desert Province is a broad interior region of isolated mountain ranges separated by expanses of desert plains. The Basin and Range Province is characterized by northwest-trending, block-faulted mountain ranges separated by deep, alluvium-filled basins. The basins generally consist of sedimentary deposits and the mountain ranges consist of granitoid and metamorphic rock. The surface geology of the study area crosses both alluvial deposits and sedimentary, metamorphic, and igneous bedrock formations, with approximately 85 percent of the area consisting of unconsolidated surficial deposits and approximately 15 percent of the area consisting of bedrock. No unique geologic features are within the study area.

Potential geologic hazards in the study area include seismic-related hazards (earthquakes, faults, and soil liquefaction) and landslides, land subsidence, and flooding. Earthquake hazard values range from a relatively low risk at the Delaney Substation in Maricopa County, Arizona, to a moderate risk at the Colorado River Substation in Riverside County, California. No Quaternary-age active faults are mapped within the study area. Liquefaction hazard has been mapped in California and most of the study area west of the Colorado River has a very high to moderate liquefaction risk. Liquefaction hazard maps are not available for the Arizona portion of the study area. Based on changes in topography east of the Palo Verde Valley, greater depths to groundwater, and lower seismic risk, the liquefaction hazard is likely less overall in the Arizona portion of the Project area. The US Geological Survey (USGS) landslide risk database indicates that the relative risk for landslides in the study area is low, but locally there may be potential for slope movement in areas of steep topography depending on site-specific conditions. Land subsidence from groundwater withdrawal or karst dissolution has not been known to occur or been reported in the study area. While underground mines and mine shafts are present in the study area, it is not known whether any have collapsed.

Mineral resources in the study area include gold, silver, copper, marble, limestone, tungsten, and aggregates, although none of the instances reported appear to be active. For leasable minerals, there is potential for geothermal, oil, and gas development in the future, but no current development. Locatable metallic and nonmetallic minerals are known to occur in the study area, with much of the area having moderate to high potential. Additional mining activities could occur within the study area based on market conditions. Saleable minerals such as aggregate, sand, gravel, or crushed stone have a moderate to high potential to occur in most of the study area. There are numerous borrow or gravel pits (inactive, active, or proposed) within the Arizona part of the study area.

3.2.3 Paleontological Resources

The study area for paleontological resources is a 2-mile corridor that encompasses the Proposed Action and Action Alternatives. The Potential Fossil Yield Classification (PFYC) system (BLM Instruction Manual 2016-114) was utilized for identifying fossil potential in the study area. The geologic units crossed by the Proposed Action and Action Alternatives were reviewed to determine which units could potentially contain sensitive paleontological (fossil) resources. Paleontological resources may occur in sedimentary rocks and unconsolidated sediments greater than 10,000 years old. No previously recorded paleontological localities are located directly within the study area; however, at least six significant fossil localities have been recorded nearby or in geologic units that underlie the study area (Applied Earthworks 2018). Most of the geologic units in the study area have a very low to low or unknown paleontological sensitivity with some areas of high sensitivity (Figure 3.2-1, Appendix 7). Therefore, fossil potential in the study area, for all Action Alternative routes, varies from very low to high and unknown.

3.2.4 Grazing and Rangeland

The grazing and rangeland study area is a 4,000-foot-wide corridor encompassing the Proposed Action and Action Alternatives. There are five available BLM grazing allotments in the study area, all of them in Arizona. Four additional allotments present in the study area have been made unavailable by land use planning decisions. There are also a number of parcels administered by the ASLD and leased for multiple purposes, including grazing. The BLM also manages portions

of its land as wild horse and burro (WHB) herd areas and herd management areas (HMAs) under the Wild Free-roaming Horses and Burros Act of 1971; the Cibola-Trigo HMA overlaps the study area.

3.2.5 Special Designations, Management Allocations, and Wilderness Resources

The special designations, management allocations, and wilderness resources study area includes a 4,000-foot-wide corridor encompassing the Proposed Action and Action Alternatives. Specially designated areas are those lands that are managed for specific conservation, preservation, or recreational uses, and are typically public lands managed by a governmental entity. Wilderness Areas (WAs), Wildlife Habitat Management Areas (WHMAs), and lands with wilderness characteristics are the types of federal specially designated areas, management allocations, or wilderness resources found in the special designations, management allocations, and wilderness resources study area. Development Focus Areas (DFAs) are a management allocation in California that identifies areas for renewable energy development.

3.2.5.1 Wilderness Areas

There are three designated WAs (Figures 3.2-2a through 3.2-2c, Appendix 7) within the study area: Big Horn Mountains; Kofa; and Eagletail Mountains. A fourth WA (New Water Mountains) is outside of the study area but adjacent to the Kofa WA.

3.2.5.2 Wildlife Habitat Management Areas

WHMAs have been established in the study area for habitat type (i.e., riparian) and for specific species (i.e., Sonoran desert tortoise, Sonoran pronghorn, and bighorn sheep). Designated WHMAs in the study area include the Colorado and Gila River Riparian Area, Desert Mountains, Palomas Plain, the Wildlife Movement Corridor, and the Lake Havasu Field Office WHMAs (Figures 3.2-2a through 3.2-2c, Appendix 7).

3.2.5.3 Lands with Wilderness Characteristics

Lands with wilderness characteristics is not a special or administrative designation but rather a description of areas that have been inventoried and identified as possessing wilderness characteristics. Lands with wilderness characteristics are generally roadless BLM-administered public land areas greater than 5,000 acres (or less if they adjoin a designated WA or a Wilderness Study Area) that have maintained their natural character and are primarily undeveloped; they have the presence of wilderness character. Additionally, they may provide outstanding opportunities for solitude and for primitive and unconfined recreation. After an evaluation of the study area for potential lands with wilderness characteristics, six polygons were identified that have wilderness characteristics (Figure 3.2-3, Appendix 7). All of these areas are within the BLM Yuma Field Office, and none of them have been identified in the Yuma RMP to be managed to maintain wilderness characteristics.

3.2.5.4 Development Focus Areas

The DRECP land use plan amendment (LUPA) included land use allocations that supported the DRECP's overall renewable energy and conservation goals, as well as measures designed to protect other values and uses of the public lands. One key allocation is that DFAs are public lands that are available for solar, wind, and geothermal development and ancillary facilities (Figure 3.2-2c, Appendix 7). Applications benefit from a streamlined permitting process with predictable survey requirements and simplified mitigation measures.

3.2.6 Noise

The noise study area includes a 4,000-foot-wide corridor encompassing the Proposed Action and Action Alternatives. Existing noise sources in the study area include highways, roadways, OHV use, agricultural activities, population centers, and natural noise-producing sources such as wind, insects, and other animals. Another low-level source of noise is from existing transmission lines that emit corona noise under certain atmospheric conditions. Corona is an electrical discharge associated with transmission lines produced by the ionization of fluid (most often humidity in the air) surrounding an electrically charged conductor. Corona is not a steady source of noise; rather, it varies with humidity conditions. Based on the rural nature of most of the study area, proximity to major surface transportation corridors and population density, existing noise levels are very low in the noise study area, although areas in and around Blythe are projected to have slightly higher noise levels.

A noise-sensitive receptor is defined as a single home, mobile home, or building that could include a nursing home, church, hospital, school, or day care center. Residents or users of those buildings are not counted individually as receptors. Most of the noise-sensitive receptors in the study area are residential, which includes long term visitor areas (LTVAs) or mobile home parks. Noise-sensitive receptors were identified within the study areas encompassing the Proposed Action and Action Alternatives; they are located in and around the Town of Quartzsite, including the La Posa LTVA, and the City of Blythe.

3.2.7 Hazards and Hazardous Materials

The hazardous materials study area is defined as a 1-mile-wide corridor encompassing the Proposed Action and Action Alternatives, which encompasses the extent of potential new Project-related access roads and any other construction-related disturbance areas. The Proposed Action and Action Alternatives would traverse lands classified under a variety of land uses, including open space, recreation and preserve, agricultural, commercial, military, and rural and suburban residential uses. Current or historical land use activities provide indicators of potential hazardous materials use and storage. Agricultural lands, both active and inactive, are within and adjacent to the Proposed Action and Action Alternatives. There is potential for encountering contaminated soils in these areas based on the storage, transport, and use of pesticides and herbicides in the study area. Identified sites of potential environmental and human health concerns due to the possible presence of hazardous materials or waste include utility infrastructure, aboveground storage tanks and underground storage tanks, historical mining sites, past and present agricultural use, and industrial/commercial facilities known to store, generate, transport, or dispose of hazardous materials. Generally, the number of identified sites of concern

increases in the area of Blythe because of agricultural operations using pesticides, herbicides, and fuels used for aircraft, industrial equipment, and vehicles.

3.2.8 Public Health and Safety

The study area for general public health and safety is a 4,000-foot-wide corridor encompassing the Proposed Action and Action Alternatives, which is sufficient to capture the potential health and safety issues that may come into play due to the Project. The study area for the assessment of fire and fuels management includes areas within 1 mile of the Proposed Action and Action Alternatives. The study area for the assessment of electromagnetic fields (EMF) is based on an analysis of electric and magnetic field strengths at the center and at the edge of the proposed 200-foot-wide ROW as well as an area extending 100 feet on each side of the ROW. In relation to public health and safety, a sensitive receptor is defined as a single home, mobile home, or building that could include a nursing home, hospital, or daycare center, as well as schools and churches. No sensitive receptors were identified for most of the study area, except around Quartzsite and west of the Colorado River in California. Public health and safety hazards related to the Project include fire, EMF, radio interference with military operations, and dust-related illness (i.e., valley fever [*coccidioidomycosis*]).

The risk of wildland fire is related to weather conditions, potential fire ignition sources, the presence and condition of fuels (vegetation), and associated fire regimes. Fire management and protection responsibility in and near the study area is assigned to Federal, tribal (on Federal and tribal land), state (on state and most unincorporated county land), or local jurisdiction.

Extremely low frequency EMF is the type associated with transmission lines. Extremely low frequency EMF are invisible lines of force that surround electrical equipment, power cords, wires that carry electricity, and outdoor power lines. Electric and magnetic fields can occur together or separately and are a function of voltage and current. On a daily basis people around the world are exposed to extremely low frequency EMF as a result of using electricity.

Noticeable radio and TV interference may occur in close proximity to an AC transmission line due to corona or gap discharges. This interference is typically limited to AM radio and analog TV. FM radio frequencies and cable TV are not sensitive to transmission line interference (Radio Noise Subcommittee 1971).

Intentional destructive acts include acts of sabotage, terrorism, vandalism, and theft that sometimes occur at power facilities, including transmission lines and substations; these acts have the potential to create health and safety hazards. Vandalism and thefts are the most common intentional destructive act, especially theft of metal and other materials that can be sold when the price of construction materials is high on the salvage market. The majority of the study area is within sparsely populated rural or undeveloped terrain with the most common adjacent developed areas or infrastructure limited to transportation and utility infrastructure.

Valley fever is a naturally occurring potential public health hazard in the study area. Valley fever spores survive in soils in many parts of Arizona and California.

3.2.9 Traffic and Transportation

The traffic and transportation study area includes a 5-mile buffer on either side of the Proposed Action and Action Alternative segments to create a 10-mile-wide corridor, which allows for the identification of roadways and facilities that could potentially be affected by the Project from the perspective of traffic and roadway operations and provides some flexibility of Project routing and design. There are no active railroad facilities within the study area, but there are many roads of various types. The roadway network in the study area includes I-10, US 95, US 60, SR 95, SR 78, Business Route 10, roads and streets in the Town of Quartzsite and the City of Blythe, utility/recreation access roads, and various local roads and dirt trails on BLM-administered land and private property. I-10 extends from Tonopah, Arizona, on the eastern end of the study area through Quartzsite and across the Colorado River through Blythe, California, to the Colorado River Substation at the western end of the study area; it is the major freight facility in the area. US 95 and SR 95 travel north-to-south through the study area, crossing through the Town of Quartzsite. SR 78 travels north-to-south through Blythe. Business Route 10 travels east to west through the study area in Quartzsite parallel to and on the north side of I-10. Much of the study area is characterized by rural and uninhabited areas served by maintained local roads, most of which are lightly traveled one- or two-lane gravel or dirt roads. These roads have various types of vehicle usage, levels of service, and traffic counts.

Most of the aviation facilities within the study area are used for general aviation and non-primary commercial service airports. Requirements for vertical and horizontal clearances for runways at public airports vary by airport class and physical characteristics, which in turn control the setback distance of transmission line structures that the FAA requires. The Blythe Airport is the only public airport in the study area and there are plans for its northward expansion. There are also several privately-owned airports, airstrips, and airfields in the study area; these are regulated differently than public airports.

The AGFD utilizes helicopters and fixed-wing aircraft to conduct aerial wildlife surveys in the Plomosa and Dome Rock Mountains. Also, the YPG has restricted portions of airspace in the study area for training flights in low-altitude conditions, which are conducted along military training routes (MTRs). One of these generally parallels the entire Project Area, while others cross it (Figure 3.2-4, Appendix 7).

3.2.10 Water Resources

The water resources study area includes a 4,000-foot-wide corridor encompassing the Proposed Action and Action Alternative segments. There is one perennial surface water (the Colorado River, Figure 1-1) and numerous ephemeral washes, canals (including the CAP canal, Appendix 7 Figure 2.2-24), irrigation ditches, stock ponds, wetlands, floodplains, groundwater basins, wells, springs, and water rights in the study area. Waters used by wildlife are presented on Figure 3.4-3 (Appendix 7). Except for the Colorado River, channels are generally dry for long periods of time; streamflow results from high-intensity, short duration summer thunderstorms and during less intense, longer duration winter storms; and runoff is typically erratic and sediment-laden; in addition, springs are few and limited in extent; and wetlands and shallow groundwater are localized.

3.3 SOIL RESOURCES

3.3.1 Study Area

The study area for soils is a 2-mile wide corridor encompassing the Proposed Action and Action Alternatives. Sources of data and inventory methods are provided in the Geology, Mineral Resources, Soils, and Paleontology Baseline Technical Report (HDR 2017b).

3.3.2 Existing Conditions

3.3.2.1 Soils

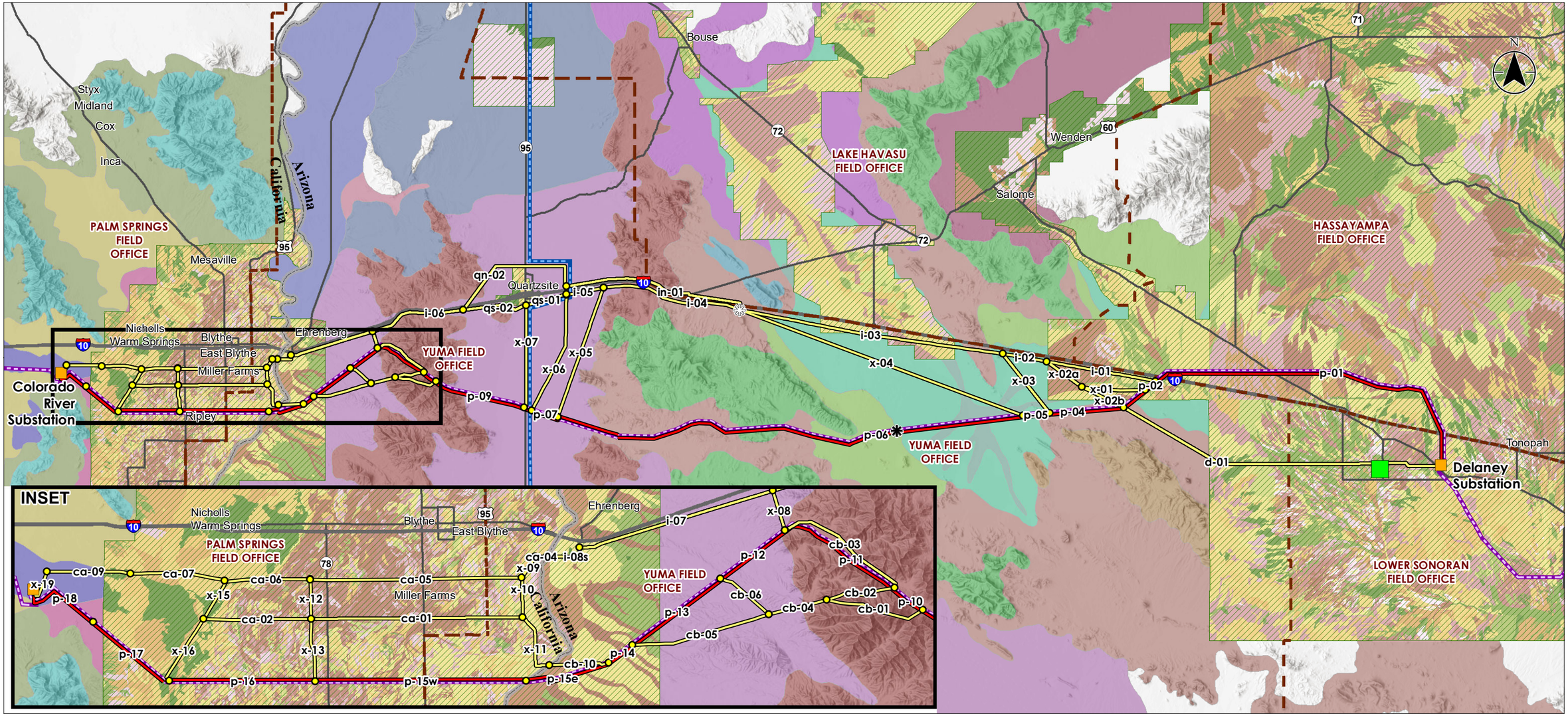
The soils in the study area are associated with a variety of climates, vegetative cover, topography, and geology (BLM 2008a). Their properties vary depending on environmental conditions, but area soils were typically developed under hot, dry conditions characterized as having thermic or hyperthermic temperature regimes and arid or semi-arid moisture regimes.

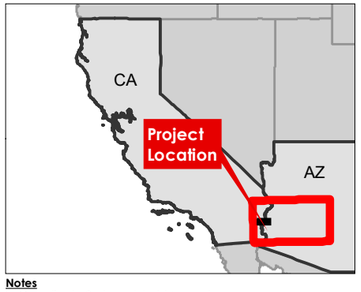
The Natural Resource Conservation Service (NRCS) develops and maintains several soil geographic databases. The relatively general State Soil Geographic Data Base (STATSGO) data is being used in this EIS, and where available, the more detailed Soil Survey Geographic Data Base (SSURGO) data is also used. STATSGO soil associations within the study area (Figure 3-1; Table 3.3-1 in Appendix 3) are generally characterized as having moderate to severe water erosion potential and slight to high wind erosion potential.

Sensitive soils in the study area include desert pavement, biological soil crusts, calcareous soils, and wetland soils (BLM 2008a). Sand dunes are mapped along the western end of the study area near the Colorado River Substation and are described further under the active windblown sand, dunes, and sand transport corridors subheading, below. Wetland soils in the study area are limited to only small areas along the Colorado River and across several low-lying basins associated with agricultural fields near the towns of Tonopah and Blythe. Similarly, alluvial soils can be found in the alluvial bottom lands associated with rivers and ephemeral drainage channels.

3.3.2.2 Segment-Specific Soil Conditions

Figure 3-1 maps the STATSGO soils described below, by Proposed Action and Action Alternative segments. Additional details are provided in Appendix 3, Table 3.3-1.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: USGS, NGA, NASA, CGIAR,N Robinson,NCEAS,NLS,OS,NMA,Geodatastyrelsen and the GIS User Community

- Proposed Action*
- Alternative Route Segment
- Route Segment Node
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible locations; ~75 feet apart)
- Existing WAPA 161kV Transmission Line
- Existing DPV1 500kV Transmission Line*
- Substation
- Harquahala Power Plant
- BLM Field Office Boundary
- Detailed Soil Survey (SSURGO)

Soil Units (STATSGO)

- Carrizo-Brios-Antho (s274)
- Hyder-Coolidge-Cipriano-Cherioni (s289)
- Ligurta-Gunsight-Cristobal (s290)
- Momoli-Denure-Carrizo (s281)
- Pahaka-Estrella-Antho (s299)
- Pahaka-Mohall-Laveen-Denure (s280)
- Rillito-Gunsight (s1140)
- Rillito-Gunsight-Denure-Chuckawalla (s288)
- Rock outcrop-Lehmans-Gran (s316)
- Rock outcrop-Quilotosa-Hyder-Gachado (s294)
- Rock outcrop-Quilotosa-Momoli (s293)
- Rositas-Dune land-Carsitas (s1136)
- Rositas-Orita-Carrizo-Aco (s1041)
- Rositas-Ripley-Indio-Gilman (s275)
- Schenco-Rock outcrop-Laposa (s295)
- Superstition-Rositas (s301)
- Tecopa-Rock outcrop-Lithic Torriorthents (s1126)
- Tres Hermanos-Pajarito-Mohave (s306)
- Vaiva-Quilotosa-Hyder-Cipriano-Cheri... (s1141)
- Valencia-Estrella-Cuerda (s300)

* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

0 9 18 Miles

1:570,240 (At original document size of 11x17)

Figure 3-1
Ten West Link
STATSGO Mapped Soils in the Study Area

Proposed Action Route Segments p-01 through p-06

Two of the eight STATSGO soil associations (Ligurta-Gunsight-Cristobal, Schenco-Rock outcrop-Laposa) mapped along Segments p-01 through p-06 include deep, well drained to somewhat excessively drained, soils. Generally, the soils are on fan terraces, stream terraces, floodplains, mountains, and hills.

Several other soil associations (Hyder-Coolidge-Cipriano-Cherioni, Momoli-Denure-Carrizo, Pahaka-Estrella-Antho, Valencia-Estrella-Cuerda, Rock outcrop-Quilotosa-Hyder-Gachado, Rock outcrop-Lehmans-Gran) include very shallow and shallow to moderately deep, well drained to somewhat excessively drained soils formed in slope alluvium from schist, granite, gneiss, rhyolite, and eolian deposits. The soils are on hill slopes, hills, and mountains. The remaining soil association (Rillito-Gunsight-Denure-Chuckwalla) is also very shallow and shallow, well drained soils formed in slope alluvium-colluvium from volcanic rock, generally located on pediments, hill slopes, and mountain slopes.

Of these soil associations, the Momoli-Denure-Carrizo, Valencia-Estrella-Cuerda, and Rillito-Gunsight-Denure-Chuckwalla have a moderate susceptibility to wind erosion.

Alternative Segments d-01, i-01 through i-04, in-01, and x-01 through x-04

The STATSGO soils mapped along the above-noted Action Alternative segments are the same as the Proposed Action Segments p-01 through p-06.

Proposed Action Route Segments p-07 and p-08

The STATSGO soils (Ligurta-Gunsight-Cristobal) mapped for Segments p-07 and p-08 consist of very deep, well drained to somewhat excessively drained, strongly saline soils that formed in fan alluvium weathered from a wide variety of rocks. The soils are on fan terraces or stream terraces. Susceptibility to wind erosion is low to moderate.

Alternative Segments qn-01 and qn-02, qs-01 and qs-02, i-05, x-05, x-06 and x-07

Two STATSGO soils (Ligurta-Gunsight-Cristobal and Schenco-Rock outcrop-Laposa) are mapped for these segments. The Ligurta-Gunsight-Cristobal association is very deep, well drained to somewhat excessively drained, strongly saline soils that formed in fan alluvium weathered from a wide variety of rocks. The soils are on fan terraces or stream terraces. The Schenco-Rock outcrop-Laposa consists of very shallow and shallow to moderately deep, well drained to somewhat excessively drained soils formed in slope alluvium from schist, granite, gneiss, rhyolite, and aeolian deposits. The soils are on hill slopes, hills, and mountains. Susceptibility to wind erosion is low. In addition, Rock outcrop-Lehmans-Gran is mapped along Segment x-05 and consists of very shallow and shallow, well drained soils formed in slope alluvium-colluvium from volcanic rock. The soils are on pediments, hill slopes, and mountain slopes. Of these soils associations, none have a high susceptibility to wind erosion.

Proposed Action Segments p-09 through p-14

Two STATSGO soil associations (Ligurta-Gunsight-Cristobal and Schenco-Rock outcrop-Laposa) are mapped for Segments p-09 through p-14. The Ligurta-Gunsight-Cristobal association is very deep, well drained to somewhat excessively drained, strongly saline soils that formed in fan alluvium weathered from a wide variety of rocks. The soils are on fan terraces or stream terraces. The Schenco-Rock outcrop-Laposa consists of very shallow and shallow to moderately deep, well drained to somewhat excessively drained soils formed in slope alluvium from schist, granite, gneiss, rhyolite, and aeolian deposits. The soils are on hill slopes, hills, and mountains. These soil associations have a low to moderate susceptibility to wind erosion.

Alternative Segments cb-01 through cb-06, i-06, i-07, i-08s, and x-08

The STATSGO soil associations mapped for the Action Alternative segments are the same as the Proposed Action route segments.

Proposed Action Segments p-15e through p-18

Five of the STATSGO soil associations (Rositas-Ripley-Indio-Gilman, Rositas-Orita-Carrizo-Aco, Rillito-Gunsight, Rositas-Dune land-Carsitas, and Ligurta-Gunsight-Cristobal) mapped along Segments p-15e through p-18 generally include very deep, well, or moderately well to excessively drained soils that formed in stratified stream alluvium, alluvium from mixed rock sources, or from sandy aeolian material. The soils are on floodplains and alluvial fans, fan remnants and terraces, lacustrine basins, floodplains, dunes or sand sheets. The Vaiva-Quilotosa-Huder-Cipriano-Cherioni soil association consists of very shallow and shallow, well drained to somewhat excessively drained soils formed in slope alluvium from granite and gneiss, and alluvium from rhyolite and related volcanic rocks. The soils are on hills and mountains, or fan terraces.

Of these soil associations, Rositas-Ripley-Indio-Gilman, Rositas-Orita-Carrizo-Aco, and Rositas-Dune land-Carsitas have a high susceptibility to wind erosion.

Alternative Segments ca-01, ca-02, ca-04 through ca-07, ca-09, cb-10, i-08s, x-09 through x-16, and x-19

The Rositas-Ripley-Indio-Gilman, Rositas-Orita-Carrizo-Aco, Rositas-Dune land-Carsitas, and Ligurta-Gunsight-Cristobal STATSGO soil associations mapped along the segments listed above generally consist of very deep, well, or moderately well to excessively drained soils that formed in stratified stream alluvium, alluvium from mixed rock sources or from sandy aeolian material. The soils are on floodplains and alluvial fans, fan remnants and terraces, lacustrine basins, floodplains, dunes or sand sheets, and valley fills. Other soils (Vaiva-Quilotosa-Huder-Cipriano-Cherioni) consist of very shallow and shallow, well drained to somewhat excessively drained soils formed in slope alluvium from granite and gneiss, and alluvium from rhyolite and related volcanic rocks. The soils are on hills and mountains, or fan terraces.

Of these soil associations, Rositas-Ripley-Indio-Gilman, Rositas-Orita-Carrizo-Aco, and Rositas-Dune land-Carsitas have a high susceptibility to wind erosion.

Active Windblown Sand, Dunes, and Sand Transport Corridors

The Chuckwalla Valley of the Mojave Desert, located along I-10 between Blythe and Desert Center, contains several sand transport corridors. This valley supports sand dune habitats that depend upon delivery of fine sand from aeolian (wind-driven) and fluvial (river-driven) processes. These sand dunes have an active layer of mobile sand and exist in a state of dynamic equilibrium as they continuously lose sand downwind and gain sand upwind. Dunes move within sand transport corridors, as wind direction and other factors change. Active sand dunes also provide important habitat for species that rely on regular supply of wind-blown sand (BLM 2015a).

The DRECP (BLM 2015a) identifies the entire western portion of the Project Area on BLM-administered land west of Blythe as dune systems and aeolian sand transport corridors. Figure 3-2 identifies the areas of active windblown sand as Qe and Qe/Qal. Sand transport corridors and sand dunes move over time (Philip Williams & Associates [PWA] 2011), so the figure is approximate. PWA (2011) concludes that sand transport corridors and areas of active windblown sand, such as the one just north of the Colorado River Substation, are sensitive to development.

3.4 BIOLOGICAL RESOURCES

3.4.1 Study Area

The biological study area includes a corridor 2 miles to each side of the Proposed Action and Action Alternative Segments (a 4-mile wide corridor). This biological study area was selected to identify biological resources that could be directly affected by the transmission line (for example, by ground disturbance and the presence of workers) or that could be indirectly affected by noise or other stressors.

3.4.2 Existing Conditions

3.4.2.1 Vegetation Resources, Including Special Status Plants, and Noxious and Invasive Weeds

Introduction

The study area is in the northern part of the Sonoran Biogeographical Province (Brown et al. 1988; Lowe and Brown 1994; Weinstein et al. 2003). Vegetation typical of the Sonoran Desert is present there from about 100 to 4,000 feet in elevation (Lowe 1964; Turner and Brown 1994).

The Sonoran Desert has a bimodal rainfall pattern, with rain from frontal systems occurring in the late fall and winter, and convection systems causing thunderstorms during the summer. Average annual rainfall across the Project Area is generally less than 5 inches. Average monthly temperatures range from a low of about 52 degrees Fahrenheit (°F) in December and January to a high of 93°F in July and August (ADWR 2009).

The vegetation associations and other land cover types along the Proposed Action and Action Alternative segments in Arizona are illustrated in Figure 3.4-1 (Appendix 7).

To describe patterns of vegetation distribution along Proposed Action route and Alternative Segments in California, a fine-scale map of vegetation alliances in portions of the Mojave and Sonoran deserts was used (Menke et al. 2013) (Figure 3.4-2, Appendix 7).

Vegetation Communities and Habitat Features

The entire Project Area is included within two subdivisions of the Sonoran Desert: Lower Colorado River Valley and Arizona Uplands, represented by various plant associations and habitat types (including physical features).

The Proposed Action and Action Alternative segments do not cross any BLM-designated Vegetation Habitat Management Areas or Areas of Critical Environmental Concern identified in an RMP (BLM 2010a, Figure 2-5; BLM 2010b; BLM 2012a; BLM 2007).

Sand dunes

The Colorado River Substation and the routes that approach the substation are in or near a series of sand sheets and dunes (Section 3.3.2) Recent research has posited that over the last several thousand years the dune system has become increasingly stable and in places, degrading (Kenney 2017). Dune vegetation can strongly influence sand transport by providing surface and subsurface roughness that helps to stabilize dunes. The dominant vegetation in these sand dunes includes creosote bush (*Larrea tridentata*.), white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), white ratany (*Krameria grayi*), cheesebush (*Hymenoclea salsola*), big galleta (*Pleuraphis rigida*), and birdcage evening primrose (*Oenothera deltoides*) (CPUC 2011, Section D.2.1 and Figure D-2; HDR 2017c). Sahara mustard (*Brassica tournefortii*) is a persistent, dominant non-native invasive weed. Numerous rare plants and animals, such as the plant Harwood's eriastrum (*Eriastrum hardwoodii*) and the Mojave fringe-toed lizard (*Uma scoparia*), are found on sand dunes.

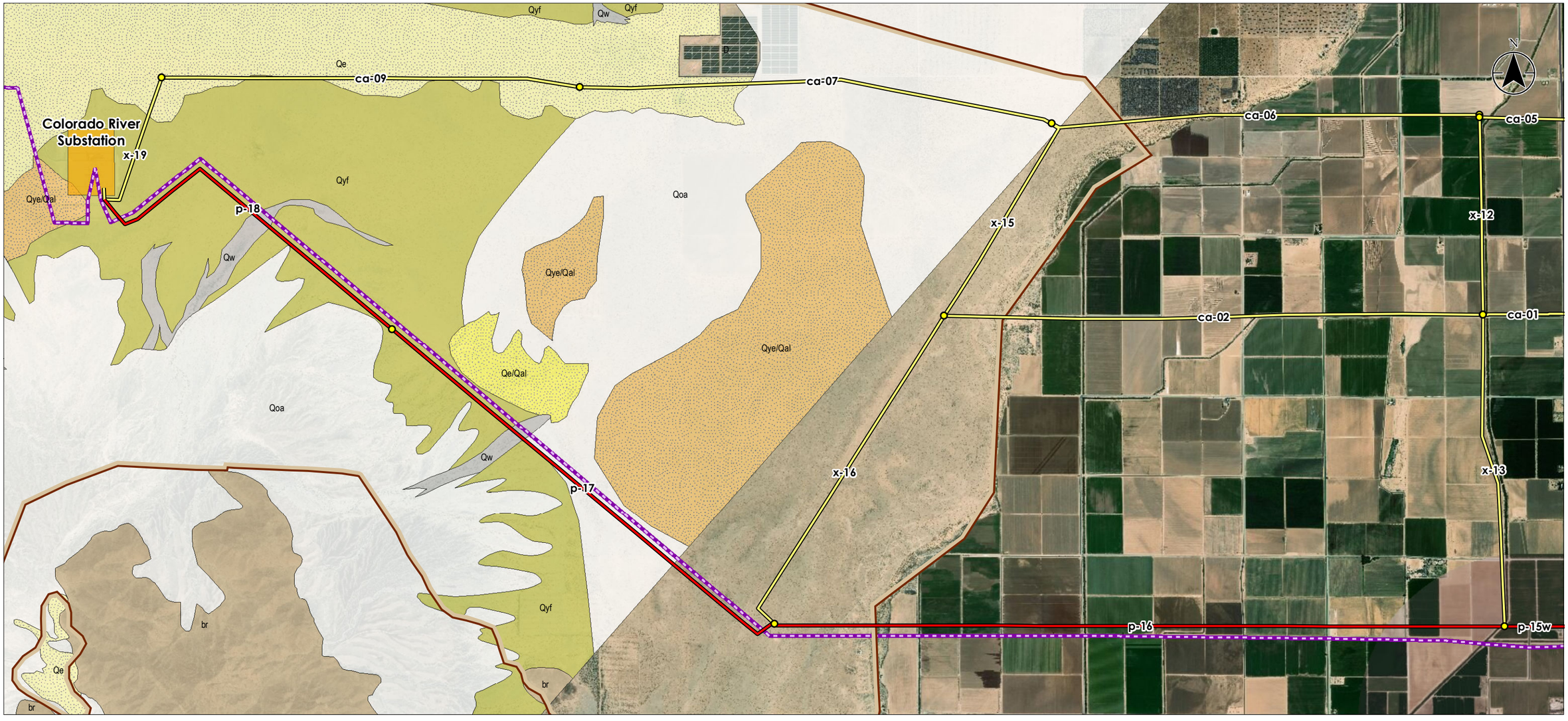
Springs and other watering sites

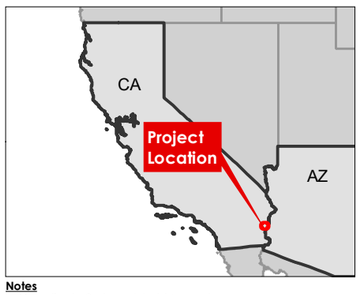
Numerous wildlife species depend on maintained or natural water sources during dry periods, and vegetation is often more abundant and diverse along the outflows of springs. Figure 3.4-3 (Appendix 7) shows the location of wildlife waters in Arizona within the biological study area (AGFD 2016a). Table 3.4-1 in Appendix 3 lists the approximate distance from the route segments to wildlife waters that are within the 4-mile-wide (2 miles to each side of the corridor) biological study area. No wildlife waters are within the biological study area in California.

Special Status Plant Species

ESA Threatened, Endangered, and Proposed Plant Species

No plant species currently listed or proposed for listing under the ESA have been documented or would be expected to be present in the Project Area.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Aeolian System Mapping - Lancaster 2014
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Proposed Action*
- Alternative Route Segment
- Route Segment Node
- Existing DPV1 500kV Transmission Line*
- Substation
- Sand and Dune Systems (DRECP)

Aeolian System Mapping for the DRECP, California Geological Survey

- D - Developed areas
- Qe - Active windblown deposits > 1.5 m thick
- Qe/Qal -Active windblown deposits < 1.5 m thick
- Qoa -Pleistocene alluvial deposits
- Qw -Alluvial wash deposits
- Qye/Qal - Stabilized windblown deposits
- Qyf - Alluvial fan deposits
- br - Bedrock

0 1 Miles

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* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 3-2
Ten West Link
Aeolian System Map of Palo Verde Mesa

Other Special Status Plant Species – Arizona

The Arizona Department of Agriculture (ADA) maintains a list of plants protected under the Arizona Native Plant Law. That list includes four categories of protected plants: Highly Safeguarded, Salvage Restricted, Salvage Assessed, and Harvest Restricted. Highly Safeguarded plants include rare species; many of the species under other classifications are widespread throughout the Project Area. Seven plants classified as sensitive by the BLM are present in the BLM Yuma Planning Area and elsewhere in southwestern Arizona. The seven species listed are either unlikely or not expected to be present in the Project Area. Table 3.4-2 in Appendix 3 lists plants protected under the Arizona Native Plant Law and Arizona BLM Sensitive plants and their potential to be present in the Project Area.

Table 3.4-3 in Appendix 3 lists BLM Yuma Field Office priority plant species and the likelihood that they may be found in or near the Project Area. The majority of the route segments in Arizona are in the BLM Yuma Planning Area. Of the ten listed species, six are present in the Project Area.

Other Special Status Plant Species – California

In addition to BLM designated sensitive plant species (BLM 2015b), the BLM confers sensitive status on California State endangered, threatened, and candidate species, and rare plant species with a California Rare Plant Rank of 1B (rare, threatened, or endangered in California and elsewhere) that are on BLM-administered land or affected by BLM actions (LUPA).

Of the sixteen special status plant species identified in Table 3.4-4, Appendix 3, two have been found during surveys and an additional ten could be present in the Project Area or in the surrounding region. However, none of those species are classified as endangered, threatened, or rare by the California Fish and Game Commission (California Department of Fish and Wildlife [CDFW] 2016a, CDFW 2016b).

Noxious and Invasive Weeds

Invasive annual and perennial plant species have become widespread throughout the Sonoran Desert and are common in some parts of the biological study area. Common invasive plants found in the area include Mediterranean grass (*Schismus* spp.), cheatgrass (*Bromus tectorum*), buffelgrass (*Pennisetum ciliare*), red brome (*Bromus madritensis* spp. *rubens*), fountain grass (*Pennisetum alopecuroides*), wild oat (*Avena fatua*), prickly Russian thistle (*Salsola tragus*), and Sahara mustard (BLM 2002, 2006, 2008a; Weinstein et al. 2003; YPG 2017). BLM's Land Use Plan Amendments (BLM 2002 and 2008a) have identified salt cedar (*Tamarisk* sp.) as a pernicious and widespread invasive species in riparian areas. This nonnative tree is the dominant riparian plant species where route segments would cross the Colorado River.

The ADA (2005) and the California Department of Food and Agriculture (2016) maintain lists of noxious weeds in those states. The Arizona classification system for noxious weeds identifies the 14 species (Table 3.4-5, Appendix 3) on those lists that are known to be present in the BLM planning areas that are crossed by route segments.

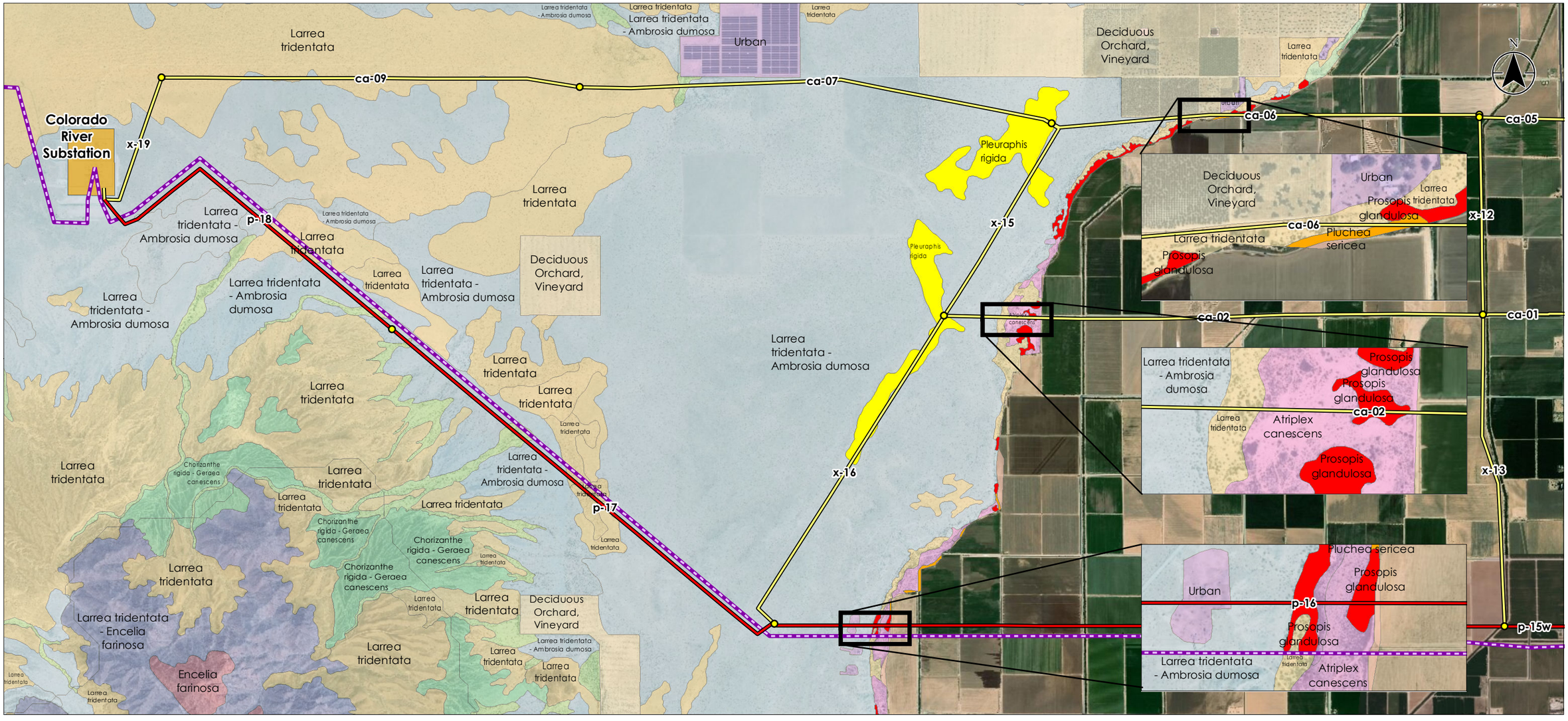
Rare and Sensitive Vegetation Alliances

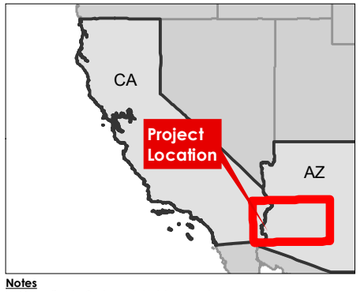
For California, the California Department of Fish and Wildlife (CDFW) has assigned state-level rarity rankings to many vegetation alliances that are dominated by native species (CDFW 2010). The DRECP classifies vegetation alliances (an alliance is defined by one or a group of diagnostic plant species) on BLM land with a state ranking of S1, S2, or S3 (critically imperiled, imperiled, and vulnerable, respectively) as rare vegetation alliances, and provides protection measures in the LUPA. CDFW rankings and DRECP classification of vegetation alliances show three rare plant alliances on the Palo Verde Mesa that are crossed by one or more route segments (Figure 3-3): *Pleuraphis rigida* (big galleta) Alliance (S2, imperiled); *Prosopis glandulosa* (honey mesquite) Alliance (S3, vulnerable); and *Pluchea sericea* (arrowweed) Alliance (S3, vulnerable). The *Prosopis glandulosa* (honey mesquite) Alliance, *Pluchea sericea* (arrowweed) Alliance, *Parkinsonia florida–Olneya tesota* (blue paloverde-ironwood) Alliance (S3, vulnerable but not rare), and *Suaeda moquinii* (bush seepwood) Alliance (S3, vulnerable but not rare) are also crossed by one or more route segments and are included in the semi-desert wash woodland riparian vegetation type, often referred to as microphyll woodlands. These rare vegetation alliances and dry desert wash woodland communities are considered sensitive in the California BLM planning area (BLM 2015a). Appendix 3, Table 3.4-6 identifies the Project segments and distance, in miles, of intersection for rare vegetation alliances on the Palo Verde Mesa.

Palo Verde Mesa

West of the agricultural fields, the route segments cross areas with very sandy soil on Palo Verde Mesa to reach the Colorado River Substation. The amount of sand in the soil increases, and the stability of the soil surface decreases from east to west. Segments ca-07, ca-09, and x-19 cross an area of active windblown sand deposition where Harwood's eriastrum appears to be present in relatively high numbers; Segments p-17 and p-18 cross sparse stands of creosote and white bursage (*Larrea tridentata* and *Larrea tridentata–Ambrosia dumosa* Alliances) and a small number of protected washes with blue paloverde, mesquite, smoketree (*Psorothamnus spinosus*), and ironwood. The north-to-south-oriented Segments x-15 and x-16 and the west end of Segment ca-02 along the eastern edge of the Palo Verde Mesa cross a band of vegetation dominated by big galleta (*Pleuraphis rigida* Alliance), classified as imperiled and protected under the LUPA. Segments p-17 and p-18 do not cross soils classified as having active aeolian deposits, although a small area of active deposition is adjacent to Segment p-17, and dune obligate species have been recorded along a portion of Segment p-18.

On the Palo Verde Mesa, segments cross vegetation alliances within vegetation types that have a state ranking of S2 or S3 (imperiled or vulnerable) (Figure 3-3). In addition, the semi-desert wash woodland vegetation type is considered sensitive by BLM (BLM 2002). The *Parkinsonia florida–Olneya tesota* Alliance (blue palo verde–ironwood woodland) and *Prosopis glandulosa* Alliance (mesquite bosque, mesquite thicket) are both included in the Coloradan semi-desert wash woodland/scrub vegetation type and have a state ranking of 3.2 (vulnerable). Specifically, Segments p-17 and p-18 cross 0.3-mile of these washes. Segment ca-02 crosses 0.1-mile of narrow bands of mesquite near the western edge of cultivated lands at the edge of the Palo Verde Mesa.





- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Existing DPV1 500kV Transmission Line*
- Substation

NVCS Name (Of Interest)

- Pleuraphis rigida
- Pluchea sericea
- Prosopis glandulosa

NVCS Name (Other)

- Atriplex canescens
- Atriplex polycarpa
- Chorizanthe rigida - Geraea canescens
- Deciduous Orchard, Vineyard
- Encelia farinosa
- Irrigated Row and Field Crops
- Lacustrine
- Larrea tridentata
- Larrea tridentata - Ambrosia dumosa
- Larrea tridentata - Encelia farinosa
- Parkinsonia florida - Olneya tesota
- Suaeda moquinii
- Urban

0 0.75 1.5 Miles

1:48,000 (At original document size of 11x17)

Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Vegetation Alliances - Menke et al 2013
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

* = Existing DPV1 follows Proposed Action. DPV1 is cartographically offset for display purposes.

Figure 3-3
Ten West Link
Palo Verde Mesa
Vegetation Alliances

Sahara mustard, an invasive plant species, is scattered about the Palo Verde Mesa and is locally abundant in the more-sandy areas. No ESA-listed plant species, or plant species classified as endangered, threatened, or rare by the CDFW (2016c) in California. Harwood's eriastrum, a BLM sensitive species, and Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*), a California Native Plant Society (CNPS) rare plant, are most common on dunes and other areas with loose sandy soils, and either one or both species have been documented within Segments ca-07, ca-09, p-16, p-17 p-18, x-16, and x-19, especially in areas that include active windblown sand deposits (Figure 3-2 and Figure 3-4).

Two special status plants with a CNPS rare plant ranking of 1 or 2 have been found along segments on the Palo Verde Mesa. Harwood's eriastrum and Harwood's milkvetch, considered rare by the CNPS but not a BLM sensitive species, occur in sand dunes and other sandy soils (BLM 2012b, Appendix G; BLM and Riverside County Planning Department 2015, Appendix C1; Power Engineers 2012). Surveys of Proposed Action route segments in 2016 did not locate these species (HDR 2016a), but in 2017, a total of 2,975 Harwood's milkvetch plants and 94 Harwood's eriastrum plants were recorded during surveys of route segments on the Palo Verde Mesa. Figure 3-4 shows where rare plants were located during 2017 surveys (Transcon Environmental 2017); these surveys were restricted to a 200-foot-wide corridor centered on route segments. Both of these species are herbaceous annuals with highly variable year to year germination rates, generally dependent on rainfall; winter precipitation in 2016/2017 was well above average resulting in ideal conditions for surveys conducted in spring 2017 (Transcon Environmental 2017). Plant locations may shift among years reflecting scattered rainfall events and shifting sand dune habitat. Other projects have previously documented 3,402 Harwood's eriastrum plants from deep sandy soils on the Palo Verde Mesa, and over 25,000 Harwood's milkvetch plants (Ironwood Consulting Inc. 2016).

Harwood's eriastrum has special management requirements. A habitat model for this species was developed as part of the DRECP (BLM 2016c), and much of the Palo Verde Mesa is included as suitable for the species (Figure 3-5). However, the DRECP model is based on general habitat conditions and includes areas where the plant is not expected to be found. When known locations of Harwood's eriastrum on the Palo Verde Mesa from California Natural Diversity Database (CNDDB) and occurrences documented by Project surveys are plotted with the California Geologic Survey surficial geology map (Figure 3-2), there is a close correlation with active wind-blown sand deposits. But some locations do not fall within the mapped dune system, perhaps reflecting the dynamics of sand sediment and the patchy nature of these habitats not evident due to the mapping scale. In an effort to more accurately map suitable Harwood's eriastrum habitat on the Palo Verde Mesa, the locations from the CNDDB of Mojave fringe-toed lizards, another sand dune obligate species, was plotted with the plant occurrences and surficial geological data. These data tended to cluster observations and polygons of presumed suitable Harwood's eriastrum habitat (Figure 3-5). This map was used to calculate the linear distance of potentially suitable Harwood's eriastrum habitat that would be crossed by each route segment on the Palo Verde Mesa (Table 3.4-7 in Appendix 3).

3.4.2.2 Wildlife, Including Special Status Wildlife and Migratory Birds

Wildlife in the Arizona portions of the Project Area is generally similar to wildlife in the California portion of the biological study area.

Amphibians and Reptiles

More than 40 species of reptiles are present in southwestern Arizona. Lizards and snakes are common, and some of the more common and widespread species are desert iguana (*Dipsosaurus dorsalis*), western whiptail (*Aspidoscelis tigris*), Great Basin collared lizard (*Crotaphytus bicinctores*), long-nosed leopard lizard (*Gambelia wislizenii*), zebra-tailed lizard (*Callisaurus draconoides*), desert spiny lizard (*Sceloporus magister*), desert horned lizard (*Phrynosoma platyrhinos*), common side-blotched lizard (*Uta stansburiana*), coachwhip snake (*Masticophis flagellum*), gopher snake (*Pituophis catenifer*), common kingsnake (*Lampropeltis getula*), western diamondback rattlesnake (*Crotalus atrox*), and Mojave rattlesnake (*Crotalus scutulatus*). Sonoran desert tortoises (*Gopherus morafkai*) are found primarily on rocky slopes and upper bajadas in the Arizona Upland subdivision, and the nonnative spiny softshell turtles (*Apalone spinifera*) are found in the Colorado River.

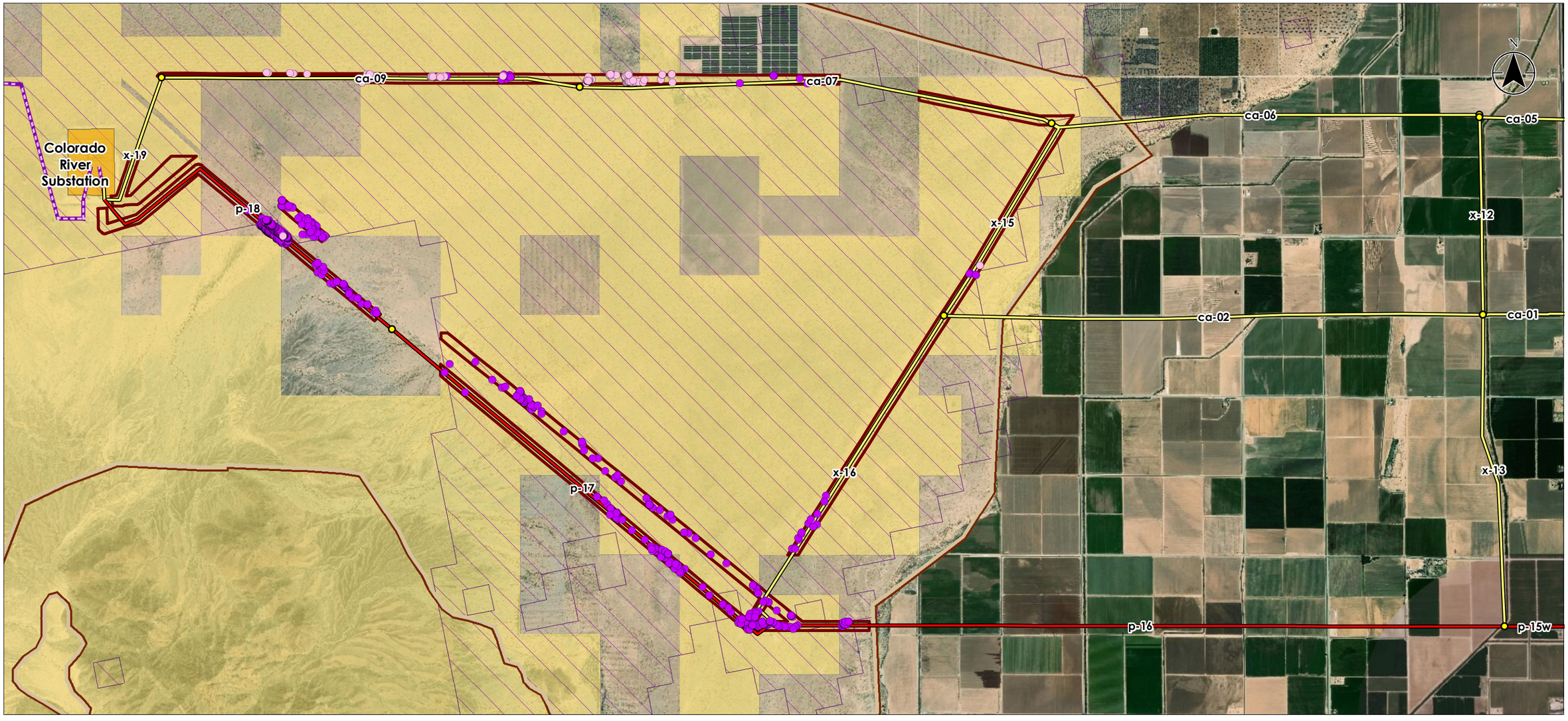
Couch's spadefoot toad (*Scaphiopus couchii*) is found in uplands throughout much of the Project Area and generally is active after summer rains. Other amphibians, such as the Sonoran desert toad (*Incilius alvarius*), Woodhouse's toad (*Anaxyrus woodhousii*), and red-spotted toad (*Anaxyrus punctatus*) are more common near water sources.

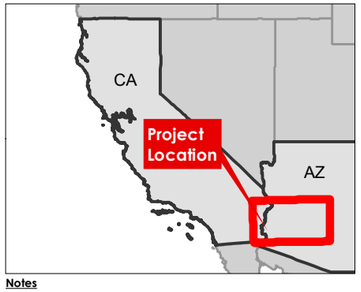
Birds

More than 350 species of birds have been documented in southwestern Arizona (BLM 2006, 2008a; YPG 2017). Most of those species are protected under the Migratory Bird Treaty Act (MBTA). Many species of raptors are known to nest in the region, as well as several wintering migrant raptor species (BLM 2008c; YPG 2017). There are three major habitats for the conservation of birds that are present in or near the Project Area: Sonoran desertscrub, low-elevation riparian habitat (including xeroriparian washes), and freshwater marshes. Sonoran desertscrub and xeroriparian washes are found throughout the Project Area; riparian habitat and freshwater marshes are present only along the Colorado River.

Mammals

More than 60 mammalian species are present in southwestern Arizona (BLM 2008a). Desert bighorn sheep are present in Arizona in mountain ranges throughout the region, including the Saddle, Big Horn, Eagletail, Little Harquahala, Plomosa, New Water, and Dome Rock Mountains (AGFD 2016a; BLM 2008a, 2008b, 2011). Bighorn sheep depend on and are found near permanent water during dry and hot months. There are numerous water sources within the biological study area (Figure 3.4-3, Appendix 7) within or near habitat for bighorn sheep (AGFD 2016a). Lambing occurs year-round but peaks in January through April (BLM 2002, 2008a). Important lambing areas in the region include rugged and isolated areas in the Plomosa Mountains, Livingston Hills, and New Water Mountains, within the Kofa NWR, and in the Dome Rock Mountains in the area surrounding Copper Bottom Pass (BLM 2008a; USFWS 1996; Weinstein et al. 2003). No known bat roosts or abandoned mines occur within Project's segments; however, bats may use nearby cliffs and crevices for roosting.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Rare Plant Surveyed Points - Transcon Environmental 2017
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Substation
- Harwood's Eriastrum Surveyed Points (Transcon 2017)
- Harwood's Milkvetch Surveyed Points (Transcon 2017)
- Rare Plant Survey Area
- Harwood's Eriastrum - Species Distribution Model (DRECP)
- Sand and Dune Systems (DRECP)

Land Status
- Bureau of Land Management
- Private

* = Existing DPV1 follows Proposed Action. DPV1 is cartographically offset for display purposes. Route segments were updated after rare plant survey.

0 0.75 1.5 Miles

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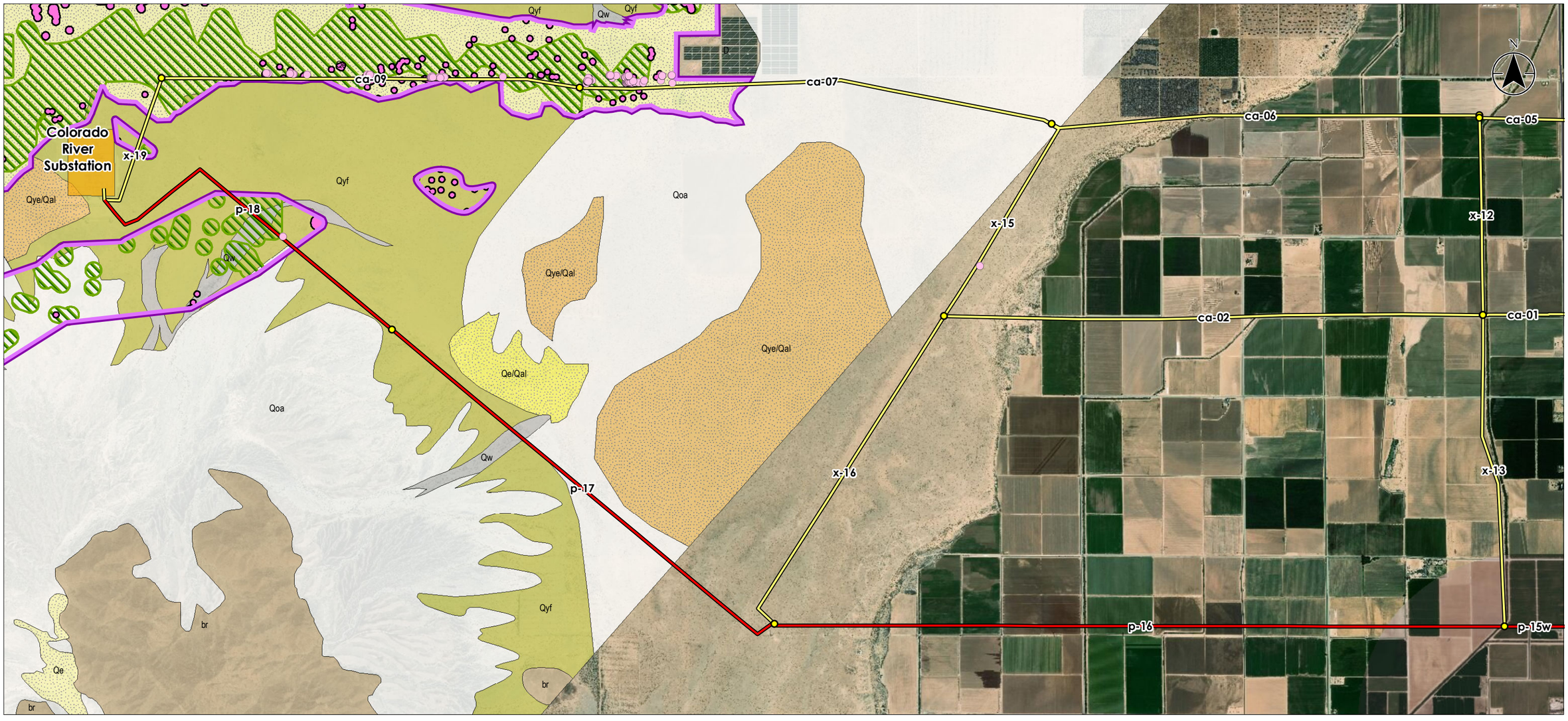
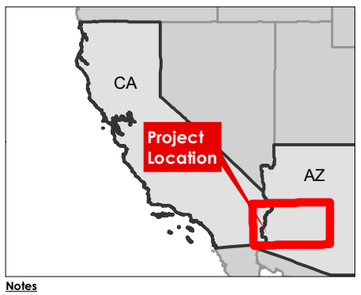
Figure 3-4
Ten West Link
Rare Plant Locations, DRECP Modeled Habitat for Harwood's Eriastrum, and Land Ownership on Palo Verde Mesa





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Aeolian System Mapping - Lancaster 2014
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Substation
- Harwood's Eriastrum Surveyed Points (Transcon 2017)
- Boundary of Presumed Harwood's Eriastrum Habitat

California Natural Diversity Database (CNDDB) Species
- Harwood's Eriastrum
- Mojave Fringe-toed Lizard

Aeolian System Mapping for the DRECP, California Geological Survey
- D - Developed areas
- Qe - Active windblown deposits >1.5 m thick
- Qe/Qal -Active windblown deposits < 1.5 m thick
- Qoa -Pleistocene alluvial deposits
- Qw -Alluvial wash deposits
- Qye/Qal - Stabilized windblown deposits
- Qyf - Alluvial fan deposits
- br - Bedrock

0 0.75 1.5 Miles

1:48,000 (At original document size of 11x17)

* = Existing DPV1 follows Proposed Action. DPV1 is cartographically offset for display purposes.

Figure 3-5
Ten West Link
Presumed Harwood's Eriastrum Habitat

Segments p-01 and p-04 cross an area near habitat for desert bighorn sheep in the Big Horn and Eagletail mountains, and Segment d-01 passes near bighorn habitat in the Eagletail Mountains. Segment p-01 also crosses an important wildlife dispersal corridor south of the Big Horn Mountains.

Segment p-06 crosses through and is near an extensive area of habitat for desert bighorn sheep in the Livingston Hills and New Water Mountains on the Kofa NWR, as well as crossing through a wildlife dispersal corridor in the northwestern corner of the refuge. Segments in-01 and i-04 cross desert bighorn sheep habitat and a dispersal corridor along I-10 through the Plomosa Mountains. Segment x-05 also crosses a dispersal corridor through the La Posa Plain between the New Water and Dome Rock mountains.

The following route segments cross important dispersal corridors for desert bighorn sheep and are important linkages among blocks of undisturbed wildlife habitat in the region (AGFD 2016a; BLM 2008a, 2008b; Weinstein et al. 2003):

- Segments i-01 and i-04 are located along I-10 through the Plomosa Mountains;
- Segment i-07 along I-10 through the Dome Rock Mountains;
- Segment p-01 between Burnt Mountain and Saddle Mountain to the south and the Big Horn Mountains to the north;
- Segment p-06 through Livingston Hills and the New Water Mountains in the northwestern corner of Kofa National Wildlife Refuge; and
- Segment x-05 through the La Posa Plain between the New Water and Dome Rock mountains.

Special Status Wildlife Species

ESA Threatened, Endangered, and Proposed Wildlife Species

Seven threatened and endangered species were identified that are known to be present or that could be present in or near the Project Area (Table 3.4-8 in Appendix 3**)**. All species protected under the Federal ESA are classified as special status species by the BLM.

Sonoran pronghorn occupy desert plains and bajadas, and occasionally rocky hills and mountainous habitats. These animals are nomadic and require large expanses of land to survive as localized droughts are frequent and summer rains are sporadic. They must be able to move across the landscape during all seasons to locate areas with sufficient food and water. Sonoran pronghorn are very wary, capable of seeing long distances across the open desert, and flee the area when disturbed.

Sonoran pronghorn are classified as endangered, and a nonessential experimental population has been established to reintroduce this subspecies in the Kofa NWR and a large surrounding area (USFWS 2011). When evaluating the effects of Federal actions as required under Section 7 of the ESA, Federal agencies must treat nonessential experimental populations on national wildlife refuges or units of the National Park Service (NPS) as they would treat threatened species, and as a proposed species elsewhere. The route segments in Arizona south of I-10 are within that

designated nonessential experimental population area. The Sonoran pronghorn is classified as a Species of Great Conservation Need (SGCN) in Arizona.

A nonessential experimental population of Sonoran pronghorn (endangered) is being established in King Valley on the Kofa NWR. About 70 Sonoran pronghorn were released into King Valley on the Kofa NWR from 2013 through January 2016. Most of those animals have remained in that valley on the Kofa NWR and the YPG, more than 10 miles south of the route segments. About ten individuals have been found outside of the Kofa NWR west of US 95, and a small number of other individuals have moved outside of the Kofa NWR and into or through the Palomas Plain, the southern Ranegras Plain, and north of and near the Little Horn and Eagletail mountains (AGFD 2014, 2015, 2016b).

Potential route segments in the eastern portion of the study area south of I-10 are within the experimental nonessential population area established for the Sonoran pronghorn. Though reintroductions are occurring in the King Valley on the Kofa NWR and most animals remain many miles from Project segments, some animals have moved long distances, possibly as far as the Harquahala Plain, and have repeatedly been documented within portions of the proposed ROW (USFWS 2017). As the number of animals increase through augmentation and reproduction, the range of the population would be expected to expand and perhaps regularly encounter portions of the Project.

On the Cabeza Prieta NWR and in Sonora, Mexico, Sonoran pronghorn are present in open valley bottoms during cool and wetter months and in areas closer to dense vegetative cover during summer. Little has been written about the habitat use and movements of Sonoran pronghorn in the introduced population on and near the Kofa NWR.

Three bird species, the western yellow-billed cuckoo (threatened), the southwestern willow flycatcher (endangered), and the Yuma Ridgway's rail (endangered), are known to be present around waterways in the western portion of the Project Area. There is no suitable nesting habitat for the western yellow-billed cuckoo or southwestern willow flycatcher in the Project Area, and only small stands of suitable nesting habitat (too small to provide nesting) for the Yuma Ridgway's rail is present. The razorback sucker fish (endangered) is now found in Lake Mohave, Lake Mead, and the mainstream river channel below Lake Havasu, including the section of the Colorado River to be crossed by the Project (LCRMSCP 2016). Hatchery reared bonytail chub (endangered) have been released into backwater channels near the Project crossing of the Colorado River.

The Mojave desert tortoise is known to be present on the Palo Verde Mesa around the Colorado River substation. Mojave desert tortoises occur on the Palo Verde Mesa west of the agricultural areas. Though the sandiest areas are typically not well suited to support Mojave desert tortoise burrows, sign of Mojave desert tortoises representing a low-density population have been found in the vicinity of the Colorado River Substation and elsewhere on the mesa. Habitat conditions tend to improve closer to the Mule Mountains, about 2 miles south of the substation.

Other Special Status Wildlife Species – Arizona

Tables 3.4-9 through 3.4-13 in Appendix 3 provides information on special status wildlife species (not including Federal ESA-listed species) that are present or could be present in and near the Project Area in Arizona.

Amphibians and Reptiles

Sonoran desert tortoises are found in southwestern Arizona, primarily in the Arizona Upland subdivision on rocky slopes, canyons, bajadas, and other rugged terrain. They are less common or absent from valley bottoms dominated by creosote-bursage. Sonoran desert tortoises are managed in accordance with the Candidate Conservation Agreement for the Sonoran Desert Tortoise in Arizona (USFWS 2015). Habitat for the Sonoran desert tortoise on land managed by the BLM has been mapped and classified into three categories (BLM 2008a, Map 3-11) (Figure 3-6):

- **Category 1**: Habitat area essential to maintenance of large, viable populations, where conflicts are resolvable; there are medium- to high-density or low-density populations contiguous with medium- or high-density populations and increasing, stable, or decreasing population.
- **Category 2**: Habitat area may be essential to maintenance of viable population, where most conflicts are resolvable; there are medium- to high-density or low-density populations contiguous with medium- or high-density populations and stable or decreasing population.
- **Category 3**: Habitat area not essential to maintenance of viable populations, where most conflicts are not resolvable; there are low- to medium-density populations not contiguous with medium- or high-density populations and stable or decreasing population.

The route segments located on land managed by the BLM do not cross any Category 1 Sonoran desert tortoise habitat.

The only Category 2 habitat crossed by the Project is in the Ranegras Plain and in the Plomosa Mountains just north of I-10. Route segments cross Category 3 habitat in the Harquahala Plain at the southern end of the Big Horn Mountains, in the Ranegras Plain at the southern end of the Little Harquahala Mountains, in the La Posa Plain west of Quartzsite, and throughout the Dome Rock Mountains. Route segments through the Kofa NWR cross good-quality Sonoran desert tortoise habitat in the New Water Mountains and Livingston Hills, but habitat on the refuge has not been classified based on BLM rankings. Segment p-06 crosses areas on the refuge that has a habitat potential index as high as 0.8 (Nussear et al. 2009) (Figure 3-6).

Birds

At least 36 special status bird species, in addition to the threatened and endangered birds could be present in or near the Project Area. Golden eagle nest locations are widely scattered across the region in Arizona (Figure 3.4-4, Appendix 7) and have been documented nesting in the New Water, Eagletail, and Plomosa mountains, and potential nest sites have been identified elsewhere near the Project Area (G. Ritter, AGFD, personal communication. February 10, 2016). No known nest sites are within 1 mile of Project segments; the entire study area is considered potential foraging habitat.

Mammals

There is a total of 21 special status mammal species present in or near the Project Area (Table 3.4-9, Appendix 3).

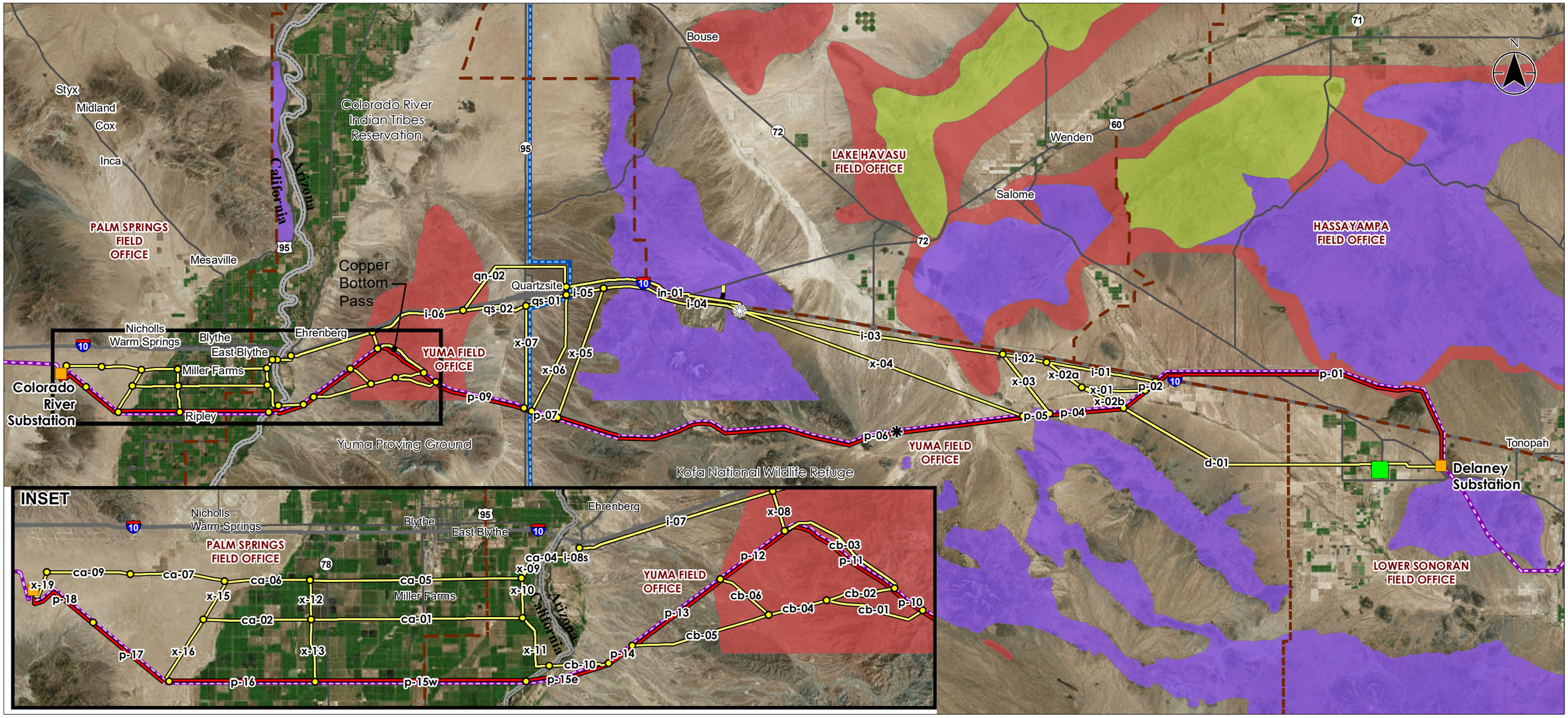
Other Special Status Wildlife Species – California

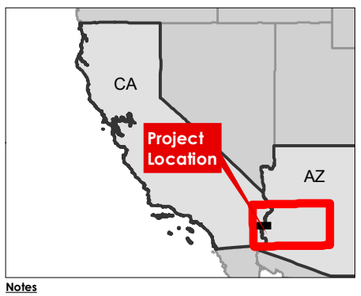
Special status wildlife species are listed at Tables 3.4-14 through 3.4-16 in Appendix 3 (not including Federal ESA-listed species) that are present or could be present in and near the Project Area in California.

The Mojave fringe-toed lizard, a BLM sensitive species and DRECP LUPA focus species, is only found in habitats with loose sand, and is considered common on the Palo Verde Mesa. The habitat model developed for the DRECP maps most of the Palo Verde Mesa as potentially suitable habitat for the Mojave fringe-toed lizard. However, the DRECP model is based on general habitat conditions and includes areas where the Mojave fringe-toed lizard is not expected to be found. To refine the model, documented occurrence records and habitat maps from the CNDDB were plotted with the California Geologic Survey surficial geology map (Figure 3-2) showing a close correlation with active wind-blown sand deposits. However, some locations do not fall within the mapped dune system, perhaps reflecting the dynamics of sand deposits and the patchy nature of these habitats not evident due to the mapping scale. In an effort to more accurately map suitable Mojave fringe-toed lizard habitat on the Palo Verde Mesa, the locations from the CNDDB of Harwood's eriastrum, another sand dune obligate species, was plotted with the Mojave fringe-toed lizard occurrences and surficial geology data. These data tended to cluster, and polygons of presumed suitable Mojave fringe-toed lizard habitat were mapped (Figure 3-7). This map was used to calculate the linear distance of potentially suitable Mojave fringe-toed lizard habitat that would be crossed by each route segment on the Palo Verde Mesa (Table 3.4-17 in Appendix 3).

Wildlife Corridors and Wildlife Management Areas

The length of wildlife corridors and Wildlife Habitat Management Areas (WHMAs) crossed by segments in the study area are listed in Table 3.4-18 in Appendix 3 and are shown on Figure 3.4-5 (Appendix 7).





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Proposed Action*
- Alternative Route Segment
- Route Segment Node
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible locations; ~75 feet apart)
- Alt SCS 12 kV Distribution Line
- Substation
- Harquahala Power Plant
- Devers-Palo Verde 500kV Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Field Office Boundary

Tortoise Habitat on BLM-Managed Land

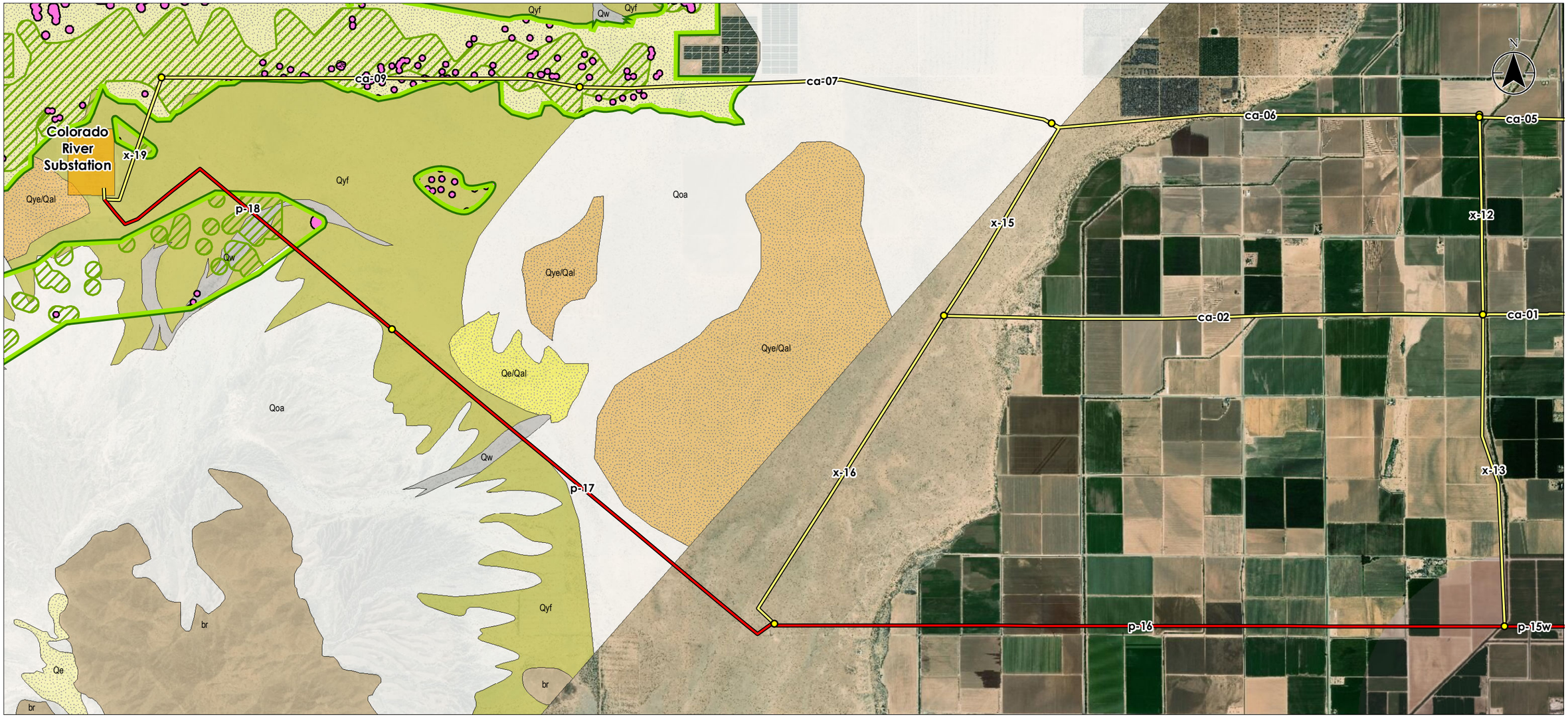
- Category 1
- Category 2
- Category 3

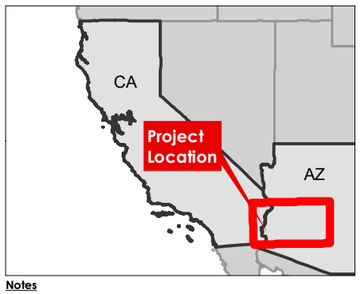
0 9 18 Miles

1:570,240 (At original document size of 11x17)

* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 3-6
Ten West Link
Sonoran Desert Tortoise
Habitat Classification on BLM Land





Notes
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- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Substation
- Boundary of Presumed Fringe-toed Lizard Habitat

California Natural Diversity Database (CNDDB) Species
- Harwood's Eriastrum
- Mojave Fringe-toed Lizard

Aeolian System Mapping for the DRECP, California Geological Survey
- D - Developed areas
- Qe - Active windblown deposits > 1.5 m thick
- Qe/Qal -Active windblown deposits < 1.5 m thick
- Qoa -Pleistocene alluvial deposits
- Qw -Alluvial wash deposits
- Qye/Qal - Stabilized windblown deposits
- Qyf - Alluvial fan deposits
- br - Bedrock

0 0.75 1.5 Miles

1:48,000 (At original document size of 11x17)

* = Existing DPV1 follows Proposed Action. DPV1 is cartographically offset for display purposes.

Figure 3-7
Ten West Link
Presumed Mojave Fringe-toed Lizard Habitat

3.5 CULTURAL RESOURCES

Cultural Resources are defined as including archaeological sites; historic buildings, structures, or places; and places of traditional cultural or religious significance.

Information contained in this section is largely summarized from Brodbeck et al. (2017).

3.5.1 Analysis Area

The analysis area for the Project consists of a 200-foot-wide corridor where direct and indirect effects to cultural resources may occur. Direct effects are defined by areas where ground disturbance would be required for Project construction, such as structure locations, access roads, lay down areas, and spur roads. Indirect effects, such as visual, auditory, or atmospheric changes, were also considered in the development of the cultural resources analysis area. The Area of Potential Effects (APE) under Section 106 differs from the cultural resources analysis area discussed in this FEIS.

Cultural resources site information collected and compiled for this Project by the Class I inventory are presented in two tiers: (1) an area measuring 1 mile (0.5 mile on either side of the centerline) encompassing the Proposed Action and Action Alternatives; and (2) a 200-foot-wide corridor (measuring 100 feet on either side of the centerline) encompassing the Proposed Action and Action Alternatives. This level of investigation was considered to provide the most useful quantification of existing cultural resources data for analyses.

The analysis area for indirect effects to known places of tribal concern includes 5 miles on either side of the Proposed Action and Action Alternative segments.

3.5.1.1 Class I Inventory

The Class I inventory includes the type, number, and NRHP status of previously recorded cultural resources; the presence of NRHP-listed historic properties; and areas of cultural significance to tribal communities with ties to the Project Area. The Class I inventory provides data on the nature and density of existing cultural resources so that likely effects of new ground disturbance can be evaluated as part of the basis for recommending further cultural resource work.

Cultural Resources Sensitivity Analysis

The Class I inventory data available for the California portion of the Project has been compiled into a sensitivity analysis (Kline 2017). The results of the sensitivity analysis are discussed in association with relevant Action Alternatives and subalternatives. The sensitivity analysis is a specific Project requirement for compliance with the CDCA Plan as amended (BLM 1980) and the DRECP PA (BLM 2016a). The sensitivity analysis is included in the Project record.

3.5.1.2 Indirect Effects Assessment Methodology

As a Federal agency, BLM is required to consider all effects of the Project to historic properties, including indirect auditory, atmospheric, and visual effects.

3.5.2 Existing Conditions

3.5.2.1 Cultural History

The cultural history is provided in Section 3.6.3.1 of the TES.

3.5.2.2 Project-Specific Conditions

A total of 919 cultural sites were identified by the Class I investigations (607 in Arizona and 312 in California). The NRHP status of these sites is detailed in Tables 3.5-1 and 3.5-2 in Appendix 3. Previously recorded prehistoric site types include artifact scatters of different compositions (lithics, ceramics, and groundstone), quarries, rock rings and alignments, cairns, hearths, milling stations, ceramic scatters/pot drops, intaglios, petroglyphs, and trails. Previously recorded historic sites include trash dumps/scatters, historic campsites, agricultural canals and drains, a check dam, roads, transmission lines, railroad grade, military sites, mine pits and waste piles, mining camps, and structural remnants.

The information on cultural resources provided for Segments cb-03, i-06, i-07, and x-08 does not include any potential cultural resources or project data from the CRIT. Tribal data is sensitive information and can only be accessed through the Tribe.

Proposed Action

A total of 66 NRHP-eligible or unevaluated sites have been previously recorded within the 200-foot analysis corridor of the Proposed Action. Sensitive sites known to occur in the study area include trails, intaglios, and prehistoric habitation sites with human remains. Segments p-17 and p-18 of the Proposed Action cross the eastern base of the Palo Verde Mesa, a culturally sensitive area (AECOM 2012). Known cultural features in this area include plants of medicinal value, seasonal cultural habitation sites, calcined bone consistent with cremated human remains, trails, and important natural resource collection areas (Bean and Vane 1978). Of particular importance are mineral sources and plants used for medicinal purposes and basketry.

Alternative 1

A total of 23 NRHP-eligible or unevaluated sites have been previously recorded within the 200-foot analysis corridor of Alternative 1. Sensitive sites known to occur in the study area include prehistoric trails and intaglios.

Alternative 2

A total of 50 NRHP-eligible or unevaluated sites have been previously recorded within the 200-foot analysis corridor of Alternative 2. Sensitive sites known to occur in the study area include prehistoric trails and intaglios.

Alternative 3

A total of 35 NRHP-eligible or unevaluated sites have been previously recorded within the 200-foot analysis corridor of Alternative 3. Sensitive sites known to occur in the study area include prehistoric trails.

Alternative 4

A total of 41 NRHP-eligible or unevaluated sites have been previously recorded within the 200-foot analysis corridor of Alternative 4. Sensitive sites known to occur in the study area include prehistoric trails.

Agency Preferred Alternative

A total of 49 NRHP-eligible or unevaluated sites have been previously recorded within the 200-foot analysis corridor of the Agency Preferred Alternative. Sensitive sites known to occur in the study area include prehistoric trails and intaglios.

Cultural Resources of Concern to Indian Tribes

Petroglyph sites are recorded along Segment i-06.

Site AZ-050-0764 is located within the 200-foot-wide corridor of Segment i-07. The site consists of an intaglio and has not been evaluated for NRHP significance.

Site AZ R:7:55(ASM)/Limekiln Wash Intaglio, is located within the 200-foot-wide corridor of Segment p-13. The site consists of an intaglio and has been determined eligible for inclusion in the NRHP.

An anthropomorphic intaglio present at site AZ-050-0822 is located within the 200-foot-wide corridor of Segment p-13. This site has not been evaluated for NRHP significance.

One site of particular concern along Segment p-17 is CA-RIV-1821 (also identified as CA-RIV-1821/H), which includes calcined bone consistent with cremated human remains. The site was originally recorded in 1980 by the BLM during the Southern California Edison Devers–Palo Verde cultural resources survey (Day et al. 1980) and was subsequently revisited and updated several times. Applied EarthWorks revisited the site in 2017 during the survey for this Project (Gardner et al. 2018). The boundaries of the site were expanded significantly to incorporate 18 smaller previously recorded cultural resources, including a continuous scatter of prehistoric and historic artifacts and numerous associated prehistoric and historic features. The calcined bone reported by previous researchers (Lerch et al. 2016; Way and Eckhardt 2004) was not identified by the Gardner et al. (2018) fieldwork.

Another cultural resource of special note near Segment p-17 is the Mule Tank Discontiguous Rock Art District, containing archaeological sites CA- RIV-504 and CA-RIV-773. The district is listed on the NRHP and is of known significance to Indian tribes. It is located outside the 1-mile-wide corridor but is close enough for consideration of potential indirect and cumulative effects.

Cultural Resources Sensitive to Indirect Effects

Specific cultural resources were identified as resources that the Project could potentially affect indirectly because of their sensitivity to visual changes.

On Segment p-06, the Indian Well Site, AZ-050-1445 consists of two groups of petroglyphs near a spring or seep. Petroglyph sites associated with natural water sources are typically places of

elevated cultural significance to Indian tribes. The other is an area of previously undocumented rock rings just west of site AZ-0502592.

The Eagletail Petroglyph Site, an NRHP-listed property, is located within the 5-mile indirect effects analysis area of Segment d-01 in the Eagletail Mountains. The site's NRHP eligibility and cultural significance to Indian tribes may include a visual component.

A recorded intaglio, site AZ-050-1887, is located within the 1-mile-wide corridor of Segment qn-02. The site has not been evaluated for NRHP eligibility.

Site AZ-050-1309 exhibits an intaglio, and prehistoric and historic petroglyphs. This site has been recommended eligible for inclusion in the NRHP and is within the 1-mile-wide corridor of Segment qs-02.

Petroglyph sites are recorded within the 1-mile-wide corridor of Segment i-08s.

Site AZ R:10:1(ASM)/Ripley Intaglio Site, is listed in the NRHP (#75000368; 11/20/1975). It is situated on the terraces overlooking the Colorado River on the Arizona side of the state line (Ezzo 1993; Holmlund 1993). In this zone, the site is located within the 5-mile indirect effects analysis area of Segment p-15e and includes a set of large anthropomorphic, geometric, and abstract figures etched into the desert surface.

Mule Tank Discontiguous Rock Art District, containing archaeological sites CA- RIV-504 and CA-RIV-773, is located in the northern Mule Mountains to the southwest of Segments p-17 and p-18. It consists of an archaeological district that is listed in the NRHP and is culturally significant for the Indian tribes along the Colorado River. The district includes a natural water catchment and was/is an important junction of indigenous travel routes and a focal point of human activity. Numerous trails extend away from this district and are related to the intaglios and petroglyphs.

Site CA-RIV-000661 is a multicomponent site that consists of a cobble rock alignment and possible intaglio. It is located within the 1-mile corridor of Segments ca-07 and ca-09. The status of the site's NRHP eligibility is unknown.

Site CA-RIV-000662 consists of a cobble rock alignment and possible intaglio. It is located within the 1-mile corridor of Segment ca-09 and has not been evaluated for NRHP eligibility.

One previously unrecorded cultural resource is the Salome Emergency Airfield along Segment x-03. Identified on historic aerials, the airfield was built by American Airlines as an emergency landing strip for its Phoenix-Los Angeles route sometime in the 1920s or early 1930s. The airfield is listed in the 1934 US Department of Commerce, Bureau of Air Commerce *Description of Airports and Landing Fields in the United States,* as an "American Airline Field, auxiliary." Such sites would be evaluated under historic contexts related to early air transportation.

Previously recorded cultural resources that contain prehistoric trail segments are located on Proposed Action Segments p-04, p-06, p-07, p-09, p-10, p-11, p-12, p-13, p-14, p-15e, and p-17, as well as Action Alternative Segments d-01, i-03, i-07, i-08s, qn-02, qs-01, cb-01, cb-02, cb-03, cb-05, cb-06, cb-10, x-02, x-04, x-05, x-06, x-07, x-08, x-15 and x-16.

3.6 CONCERNS OF INDIAN TRIBES

Government-to-government consultation with tribes, as well as Section 106 consultation with interested communities and parties is currently ongoing to identify properties of concern and other issues. The BLM, as the lead Federal agency, is conducting these consultation efforts.

3.6.1 Analysis Area

The analysis area for concerns of Indian tribes is the same as that described in Section 3.5.1.

3.6.2 Existing Conditions

The Project is within ancestral lands of Indian tribes, and tribal communities have maintained a spiritual stewardship and cultural connection to the landscape. The numerous natural and cultural resources in and around the Project Area contain cultural and spiritual significance for Indian tribes, and continues to play fundamental roles in cultural traditions, group identities, and ongoing religious and ceremonial traditions. Consultation and coordination with several of the tribes suggests that the Project Area is both a traditional cultural landscape and there may be traditional cultural properties (TCPs) present.

Information provided by tribes about areas of specific tribal concern has been and will continue to be identified during Section 106 and government-to-government consultation processes and considered during the evaluation and assessment of effects under Section 106 and NEPA. An ethnographic overview has been prepared to present baseline information on tribal cultural connections within the Project Area. As the Project develops, new cultural sites and places become known, and input from Indian tribes is gathered and integrated into Project planning; the resulting information has been and will continue to be incorporated into resource assessments.

Given the physical length of the Project, several Indian tribes with affiliation to the greater Project Area have been identified during the initial consultation process (Section 3.6.2.2).

3.6.2.1 Potential Resource Types of Cultural Significance

In addition to more traditionally defined sites that may be evaluated under the NRHP criteria for eligibility (Section 3.5), other types of cultural resources that may be of cultural and religious significance to Indian tribes within the Project Area are addressed and evaluated. Tribal cultural resources can include a site, feature, place, cultural landscape, sacred place, or an object of cultural value. The following cultural resources types are borrowed from AECOM's (2012) ethnographic assessment for the McCoy Solar Energy Project. Though cultural resources of these types may not qualify as eligible under the NRHP, or sometimes even as archaeological sites, certain types of cultural resources may still be considered significant. Such cultural resource types significant to Indian tribes include, but are not limited to:

A. *Traditional Origin and Mythological Places.* Such places are locations associated with beliefs concerning tribal origins and mythology or the nature of the world. Physical archaeological evidence may not exist at such locations and they may consist only of geographic features.

B. *Ceremonial Locations.* Ceremonial locations include places where religious practitioners go, either in the past or present, to perform ceremonial activities based on the traditions of the culture. Examples could include rock art sites, dance sites, hot springs, and places where objects have been ritually placed. These locations may or may not show evidence of archaeological use; and, even if archaeological remains are present, the function of the site may not be readily apparent.

C. *Historical Tribal Locations.* Historical tribal locations are places where an important historical event has occurred relating to particular Indian tribes. This category might include battle sites, sites associated with historic tribal members, or locations where treaties were negotiated.

D. *Ethnohistoric Habitation Sites.* These are habitation sites known to have been used by a particular tribe or culture. The location of such sites may be known through either written or oral histories. Most of these sites will likely contain archaeological evidence.

E. *Trails.* Trails, particularly those associated with migration or traded routes, are considered culturally significant by many Indian tribes. Trails represent links between various tribes and regions and may also lead to places of spiritual significance. The act of following a trail can be a spiritual journey in itself.

F. *Burial Sites.* Burial sites are culturally significant to Indian tribes. The exact locations of burial sites are not always known or divulged.

G. *Resource Collection Areas.* Resource collection areas include a wide variety of places from which plants, animals, minerals, and water are gathered for medicinal or other subsistence purposes. It is sometimes difficult to establish concise boundaries for these locations. Examples of resource collection areas include groves of ethnobotanically important plant materials, quarries, lakes, and springs.

Given the nature of cultural resources of these types, it can be concluded that not all of these sites are tangible or observable locations and, as such, may or may not be readily identifiable during an archaeological survey or meet NRHP eligibility. Nevertheless, such site types may be culturally significant to Indian tribes, regardless of NRHP eligibility, and therefore should be taken into consideration. Certain locations may only be known through oral traditions or recorded through ethnographic work.

3.6.2.2 Project-Specific Concerns of Indian Tribes

Based on communications with Indian tribal representatives from the CRIT, Quechan Tribe of the Fort Yuma Indian Reservation, Twenty-Nine Palms Band of Mission Indians, and the Gila River Indian Community, several issues of tribal concern were identified. These are not all inclusive, and other areas of tribal concerns may be identified during continued Section 106 consultation.

- Existing Access: Tribal representatives from the CRIT, Quechan Tribe of the Fort Yuma Indian Reservation, and the Twenty-Nine Palms Band of Mission Indians all expressed concerns regarding construction of the Project limiting existing access into areas of spiritual use, especially in the Mule Mountains.

- New Access: Tribal representatives from the CRIT, Quechan Tribe of the Fort Yuma Indian Reservation, and the Twenty-Nine Palms Band of Mission Indians all expressed concerns regarding construction of the Project providing new access into areas that were previously inaccessible. Concerns were expressed that new access routes would lead to increased OHV use and lead to the damage and vandalism of historic properties.
- Native Infrastructure and the Interconnection of the Cultural and Natural Environment: the CRIT, Quechan Tribe of the Fort Yuma Indian Reservation, the Torres Martinez Desert Cahuilla Indians, and Twenty-Nine Palms Band of Mission Indians all expressed concerns regarding the interconnectedness of cultural resource sites, natural features of the landscape, and prehistoric trail networks. Concern was expressed regarding the cumulative effects of projects erasing the ancestral footprint of the tribes from the landscape.
- Places of Elevated Spiritual Importance to Tribes: the CRIT, Quechan Tribe of the Fort Yuma Indian Reservation, and Twenty-Nine Palms Band of Mission Indians all expressed concerns regarding specific culturally-sensitive areas, especially in the Mule Mountains. Concern was expressed regarding visual impacts to other areas of elevated spiritual importance to tribes, such as the Ripley Intaglio Site. Formal evaluation and consultation on these specific areas as TCPs would need to be conducted by BLM. In consultation (Madrigal [Twenty-Nine Palms Band of Mission Indians] to MacDonald [BLM], 5/12/2017), the Twenty-Nine Palms Band of Mission Indians additionally noted that the Project may cross into a culturally sensitive area, and that a culturally sensitive site not previously identified by the background research was located within or near the Project. Formal consultation would need to be conducted by the BLM to identify and evaluate these locations, as applicable.
- The Colorado River: the CRIT, the Quechan Tribe of the Fort Yuma Indian Reservation, and the Twenty-Nine Palms Band of Mission Indians all expressed concern about the Colorado River, and its influence on their spiritual belief and cultural history. As such, the Colorado River crossing and the indirect and direct effects of its siting on the landscape and potential impact to historic properties are of great concern to Indian tribes.
- Treatment of Human Remains: The CRIT expressed concern regarding the treatment of human remains and mortuary items. It is their belief that if human remains are encountered, they should not be removed but avoided entirely and left in place.
- Intrusion on Pristine Landscapes: The CRIT, the Quechan Tribe of the Fort Yuma Indian Reservation, and the Twenty-Nine Palms Band of Mission Indians all expressed desire to restrict Project disturbance to areas already disturbed in order to limit impacts to pristine landscapes. Pristine and undisturbed landscapes are important to Tribal spiritual life and are high-energy places that should be preserved.

3.6.2.3 Project-Specific Conditions

The following is not a comprehensive list of cultural resources of tribal concern; it is expected that additional resources would be identified during the life of the Project through ongoing Section 106 consultation.

Intaglio/Rock Art/Petroglyphs

Intaglio, petroglyph, and rock art sites are often of significance to tribal groups. Several such sites are within the study area.

One site located along Segment p-06 is reported as containing petroglyphs. Petroglyph sites may have a ceremonial function and are typically places of elevated cultural importance to Indian tribes.

Eagletail Petroglyph Site

The Eagletail Petroglyph Site is located in the Eagletail Mountains within the 5-mile indirect effects analysis area of Segment d-01. The Eagletail Mountains are a culturally important feature of the environment, and the petroglyph site is of particular importance as a node of cultural activity (Berry 1978). Information on the Eagletail site is restricted; however, the site is well-known among the general public for its impressive collection of petroglyphs, which number in the thousands. The visual setting could be an integral component of the site's importance.

Indian Well Site

The Indian Well Site, AZ-050-1445, consists of two groups of petroglyphs near a spring or seep. Petroglyph sites associated with natural water sources are typically places of elevated cultural importance to Indian tribes. It is located within the 5-mile indirect effects analysis area of Segment p-06. Little information about the site was included in the Class I data.

Limekiln Wash Intaglio

Site AZ R:7:55(ASM)/Limekiln Wash Intaglio, is located within the 200-foot-wide corridor of Segment p-13. The site consists of an intaglio.

Ripley Intaglio Site

Site AZ R:10:1(ASM)/Ripley Intaglio Site is situated on the terraces overlooking the Colorado River on the Arizona side of the state line (Ezzo 1993; Holmlund 1993). The site is located within the 5-mile indirect effects analysis area of the Proposed Action and includes a set of large anthropomorphic, geometric, and abstract figures etched into the desert surface. The Ripley Intaglio Site may represent a healing dance area (Johnson 1985).

Other Sites

Site AZ-050-1887, an unevaluated intaglio site, is within the 1-mile corridor of Segment qn-02.

Site AZ-050-1309 exhibits an intaglio, and prehistoric and historic petroglyphs. This site is within the 1-mile corridor of Segment qs-02.

Site AZ-050-0764 is located within the 200-foot-wide corridor of Segment i-07. The site consists of an intaglio.

Petroglyph sites are also recorded along Segments cb-05 and i-08s.

Site CA-RIV-000661 is a multicomponent site that consists of a cobble rock alignment and possible intaglio. It is located within the 1-mile corridor of Segments ca-07 and ca-09.

Site CA-RIV-000662 consists of a cobble rock alignment and possible intaglio. It is located within the 1-mile corridor of Segment ca-09.

Trails

Trails are of potential significance to Indian tribes as part of traditional native infrastructure associated with travel across the landscape. The significance of specific trails can be understood in their relationship to specific geomorphological settings, connection to known resource areas, and habitation sites in the regional settlement pattern. These occur along Proposed Action Segments p-04, p-06, p-07, p-09, p-10, p-11, p-12, p-13, p-14, p-15e, p-16, and p-17; and along Action Alternative Segments d-01, i-03, qn-02, qs-01, cb-01, cb-02, cb-03, cb-05, cb-06, cb-10, i-06, i-07, i-08s, ca-01, ca-02, x-02, x-04, x-05, x-06, x-07, x-08, x-15, and x-16.

The Coco-Maricopa Trail

The Coco-Maricopa Trail was a heavily traveled east-west trade route connecting the Los Angeles Basin with the Colorado River at the Palo Verde Valley. It also continued eastward to the Maricopa villages on the Gila and Salt rivers in the Phoenix area. The trail was first noted by Euro-Americans in the early 1800s as a route used by the Halchidhoma (Lerch et al. 2016). The physical location of the entire trail is not known and only a few segments have been recorded.

Unnamed North-South Trails

While the Coco-Maricopa Trail is the most well-known trail through the area, AECOM (2012) also notes the likely presence of north-south running trails through the Palo Verde Mesa. North-south trails have been associated with a specific mourning ritual, or *keruk*, that involved following the path between two spiritual peaks: *Akikwalal* at Pilot Knob near Yuma and *Avikwami* in the Newberry Mountains near Needles. This trail is also referred to as *Xam Kwatcan* Trail (Lerch et al. 2016).

Salt Song Trail

In addition to these known and recorded trail systems, the Project Area is within the general area described by the Salt Song Trail (Lerch et al. 2016; AECOM 2012). The Salt Song Trail is considered to be the path to the afterlife used by the Chemehuevi, Southern Paiute, and Hualapai. The Salt Song Trail is described in the Salt Songs, which are a series of songs sung at funerals. The path is metaphysical and the locations identified in the Salt Songs can be considered to be Traditional Origin and Mythological Places. While the trail itself is not considered an on-the-ground cultural resource, consultation received from the Twenty-Nine Palms Band of Mission Indians notes that locations named in the Salt Songs may be tied to physical locations of importance in or around the Project (Madrigal [Twenty-Nine Palms Band of Mission Indians] to MacDonald [BLM], 5/12/2017).

CRIT Cultural Resources

Cultural resources located on CRIT lands have not been identified, as their locations are confidential, and the distribution of confidential data requires special consideration from the CRIT Tribal Council. For segments that include CRIT lands, more information would be required to ensure the identification of cultural resources and potential historic properties. Further information on CRIT cultural resources or historical properties was not provided by the CRIT; therefore, the affected environment of these resources on CRIT lands is unknown and cannot be evaluated further.

Colorado River

Many of the most sensitive tribal cultural resources are located around the Colorado River. The high density of known cultural resource sites in the Mule Mountains and on the Palo Verde Mesa indicates that this area was significant in the prehistoric past and continues to be important to Indian tribal communities today. Significant known cultural resources include trails and intaglio/petroglyph/rock art sites. The types of prehistoric sites, their distribution and density, as well as the environmental setting of this area offers an insight into the regional settlement and land use pattern operating during prehistory and demonstrate the interconnectedness of the cultural and natural environment. Two cultural properties, AZ R:10:1(ASM)/Ripley Intaglio Site and the Mule Tank Discontiguous Rock Art District, containing archaeological sites CA-RIV-504 and CA-RIV-773, are located in this area.

The Mule Mountains

The Mule Mountains are south of the Project Area within line-of-sight of Segments p-17 and p-18. Previous research has suggested that the Mule Mountains contain sensitive archaeological sites including trails and ceremonial sites (AECOM 2012, AECOM 2016). The mountains also form the center of a regional trail network (Leard and Brodbeck 2017). Bean and Vane (1978) describe “A rock tank in this area stores up water when it rains and may have been a permanent water source in past years. Consequently, this is a site where travelers, traders, and ritualists probably stopped off regularly.”

The Mule Tank Discontiguous Rock Art District, containing archaeological sites CA-RIV-504 and CA-RIV-773, is located in the northern Mule Mountains southwest of Segments p-17 and p-18. The district includes a natural water catchment and was—and is—an important junction of indigenous travel routes and a focal point of human activity. Numerous trails extend away from this site district and are related to the intaglios and petroglyphs (Brodbeck et al. 2017).

Government-to-government consultation with tribes for this Project have identified the Mule Mountains and surrounding area as a traditional cultural landscape. The consulting tribes’ consider natural resources to be cultural resources, and that together these resources constitute a cultural landscape that provide a sense of place and identity and are important to their cultural heritage. In addition, the Project analysis area is within the ancestral territory of the consulting tribes' that contains multiple, linked features that have cultural and historical meanings attached to them by the peoples who have traveled, used, and interwoven these places into generations of practice that are integral to their way of life.

Palo Verde Mesa

While not a specific property, AECOM (2012) describes the eastern base of the Palo Verde Mesa as a culturally and biologically sensitive area of great importance. Known features in this area include plants, seasonal habitation sites, graves, trails, and important natural resource collection areas (Bean and Vane 1978). Of particular importance are mineral sources and plants used for medicinal purposes and basketry. Mineral resources can include clay for ceramic production and crystal sources for ceremonial purposes.

CA-RIV-1821, an artifact scatter with thermal features and cremated human remains, is a known area of sensitivity to the CRIT and Quechan Tribe of the Fort Yuma Indian Reservation. It is located along an existing access road in Segment p-17.

3.7 LAND USE

3.7.1 Study Area

The general land use study area is a 4,000-foot corridor encompassing the Proposed Action route and Action Alternative segments. A 2-mile-wide study area was used for military land because typically the DOD requests large buffers around their properties to both protect the public and provide secure grounds for military uses. The land use study area also encompasses 200-feet on either side of the alternative SCS 12kV distribution line.

3.7.2 Existing Conditions

3.7.2.1 Land Jurisdiction and Plans

Federal land use plans that govern federal land in the Arizona portion of the land use study area are identified in Section 1.7.1.2.

In California, Federal land in the land use study area is governed by the Yuma RMP and the 1980 CDCA Plan (BLM 1980), as amended by the DRECP (BLM 2016a). The DRECP (BLM 2016a) LUPA uses land use allocations. The Project would cross a land use allocation called a DFA identified in the DRECP (Figure 3.2-2c, Appendix 7). Each land use allocation has CMAs, as do certain types of use. CMAs are the specific set of avoidance, minimization, and compensation measures, and allowable and non-allowable uses for siting, design, pre-construction, construction, maintenance, implementation, operation, and decommissioning activities on BLM land. DFAs are available for energy transmission outside of utility corridors and streamline development through consistent and predictable mitigation requirements identified in the CMAs.

The USFWS and the BLM developed the Kofa National Wildlife Refuge and Wilderness and New Water Mountains Wilderness Interagency Management Plan and Environmental Assessment to describe the management objectives for the refuge (USFWS and BLM 1997). The Kofa NWR utilizes USFWS policies on appropriateness (USFWS 2006a) and compatibility (USFWS 2000) when processing ROW applications.

The La Paz County Comprehensive Plan (La Paz County 2005) does not expressly identify utility corridors for transmission infrastructure, it states that “[a]ny new industrial development

should be located along a major arterial corridor, rail connection, [or] state highway, or in close proximity to the Interstate corridor."

The Town of Quartzsite General Plan (Town of Quartzsite 2014) does not identify particular corridors for utilities, the strategy supporting this goal is to coordinate infrastructure improvement with existing and projected development activity and, therefore, place utilities in areas that are beneficial to the community and complement the plan.

3.7.2.2 Land Uses

The land use study area includes mainly rural, sparsely populated lands under Federal management (Figures 3.7-1 through 3.7-4, Appendix 7).

Where the Proposed Action and Action Alternative segments cross Federal lands, they are mostly within designated utility corridors. Of the 58.3 miles of Proposed Action segments that fall on BLM or Reclamation land, 98 percent also overlap designated utility corridors. Of the 183.3 miles of Action Alternative segments that fall on BLM or Reclamation land, 62 percent also overlap designated utility corridors. Where the Proposed Action segments cross non-Federal lands, or lands managed by the USFWS or DOD, they are entirely located parallel to the existing DPV1 ROW. While some of the Action Alternative segments are located parallel to existing utility ROWs, several Action Alternative segments cross outside designated utility corridors between the Proposed Action and Action Alternative segments routed along I-10.

Residential

The land use study area as a whole includes large areas of public land and relatively little private residential land. Residences are typically scattered on large lots (1 to 40-plus acres) and generally increase in density in the vicinity of cities and towns within the Project Area.

Agriculture including Williamson Act Lands

Agricultural lands are present throughout the land use study area. The BLM and ASLD have authorized grazing on their rangelands, and ASLD also leases some state trust land for agricultural purposes (Figures 3.7-5 and 3.7-6, Appendix 7).

Other Land Uses in the Study Area

Commercial land uses are typically assigned to areas that are used or planned for general commerce. Industrial land use in the study area includes several existing and approved, but not yet constructed, solar energy facilities.

The YPG is the only military installation within the military land use study area. The YPG is a center for testing military equipment including vehicles, unmanned aerial systems, air delivery, electronic warfare, artillery, rockets and other weapon systems. Testing on the YPG consists of both developmental testing for new equipment and operational testing to prepare equipment for fielding by military units. The Army's Free Fall School is also located on the YPG. Land use within the YPG is not entirely restricted to military equipment and artillery testing. General Motors operates a test track on the YPG under an Enhanced Use Lease. Different regions within the YPG are used for different purposes (YPG 2017). Where compatible with the military

mission, for example, in coordination with the AGFD, the YPG administers public access for hunting in certain parts of the installation by permit.

Colorado River Indian Tribes Land

The study area for land use includes the southeastern tip of the CRIT reservation (Figure 1-1).

Public Facilities, Utilities, and Rights-of Way

Federal and state roads are public facilities located within the land use study area. A variety of existing utilities are present in the land use study area, including water, oil, natural gas pipelines and smaller distribution lines; underground and aboveground electricity transmission lines; and buried fiber optic cables. These utilities may or may not utilize designated corridors. Utilities that occur on BLM land are generally authorized under a ROW grant.

3.7.2.3 Land Use Study Area Overview

High level land use issues associated with the Proposed Action and Action Alternative segments are listed below.

- Segment p-06 crosses Kofa NWR for about 24 miles, crossing about 2 miles south of the northern boundary of the refuge and adjacent to the DPV1 ROW.
- Segments qn-01, qn-02, qs-01, and qs-02 pass through the Quartzsite incorporated boundaries north and south of the most developed part of town.
- Portions of the land use study areas (4,000-foot corridor) for Proposed Action Segment p-11 and Action Alternative Segments cb-03, i-06, i-07, and x-08 overlap with the CRIT reservation.
- As the majority of Proposed Action Segments p-15e through p-18 and Action Alternative Segments ca-01, ca-02, ca-04 through ca-07, ca-09, i-08s, x-09 through x-14, and x-19 are on privately owned land, they do not coincide with designated utility corridors. However, the majority of Action Alternative Segments ca-07, ca-09, and a portion of x-19 overlap with the WWEC 30-52 west of Blythe.
- BLM-administered land in California crossed by Proposed Action Segments p-16 through p-18 and Action Alternative Segments ca-02, ca-05 through ca-07, ca-09, x-09 through x-16, and x-19 are classified as a DFA (Figure 3.2-2c, Appendix 7), where activities associated with solar and wind development and operation will be allowed, streamlined, and incentivized (BLM 2016a). There is one existing solar energy facility in these land use study areas: the NRG Blythe solar energy facility.

3.8 RECREATION

3.8.1 Study Area

The recreation study area is a 2-mile-wide corridor encompassing the Proposed Action and Action Alternative segments. However, the area used for the description of the affected environment for recreational resources includes the entirety of recreation areas intersected by the

Proposed Action and Action Alternative segments, adjacent recreation areas (within 1 mile), and areas that could be directly or indirectly affected by the Project.

3.8.2 Existing Conditions

Recreational activities in the recreation study area include camping, nature viewing, amateur geology (i.e., rockhounding), team sports, water sports, OHV use, hiking and backpacking, rock climbing, and hunting.

3.8.2.1 Recreation Management

The BLM uses a planning tool known as the Recreation Opportunity Spectrum (ROS) to inventory, classify, and map public lands according to their suitability for various types of recreational activity based on the presence of physical setting characteristics. The system defines six classes of recreation opportunity ranging from natural, low-use areas to highly developed, intensive use areas: these include Rural Natural, Rural Developed, Urban, Suburban, and Semi-Primitive. The classes are defined by setting, the types of recreational activities appropriate to that setting, and the types of recreation experience the setting offers to visitors. BLM designates Special Recreation Management Areas (SRMAs) to help direct management priorities in areas with a high amount of recreational activity and increased resource values and public concern (Figure 3.8-1, Appendix 7). BLM also issues Special Recreation Permits (SRPs) for LTVA use (Section 3.8.2.3).

3.8.2.2 Recreation Areas

Recreation areas are used by the public for both dispersed and developed recreation and are managed by a Federal, state, or municipal agency. There are many recreation areas located within the study area.

3.8.2.3 Long-term Visitor Areas

LTVAs are specially designated areas on BLM-administered land that allow visitors to stay for longer periods of time than are typically spent camping on Federal lands. Only one LTVA is located within the recreation study area: the La Posa LTVA near Quartzsite.

3.8.2.4 Hunting

The AGFD manages hunting within seven game management units (GMUs) in the recreation study area in Arizona (Figure 3.8-2, Appendix 7). The CDFW manages hunting in the study area in California within its Inland Desert Region.

3.8.2.5 Off-Highway Vehicles

OHV use is popular in both Arizona and California in the recreation study area. Use is generally classified as “heavy” use in the BLM’s route inventory for the study area. OHV activities include day use and multiday overnight trips along historic routes and in remote natural areas, such as the proposed Arizona Peace Trail.

In managing OHV use on BLM-administered land, lands are designated as “Open”, “Open to All Uses”, “Limited to Authorized Use”, or “Closed”. The BLM does not maintain specific data regarding unauthorized or illegal OHV use of BLM lands, but some problems exist with illegal OHV use (Personal Communication, Ron Morfin, 8/6/2016).

3.8.2.6 Recreation Study Area Overview

Recreation facilities associated with the Proposed Action and Action Alternative segments are shown on Figures 3.8-1 through 3.8-6 (Appendix 7), highlights include:

- The proposed Arizona Peace Trail is crossed by Proposed Action Segments p-06 and Action Alternative Segments i-03 and x-04. Proposed Action Segments p-10 through p-13 run parallel to a portion of the proposed Arizona Peace Trail, just north of the YPG.
- The La Posa SRMA is crossed by Proposed Action Segments p-07, p-08, p-09, p-10, and p-11, as well as Action Alternative Segments p-13 and i-06.
- Action Alternative Segments i-05, qn-01 and qn-02, qs-01 and qs-02, x-05, x-06 and x-07 pass through the La Posa Destination SRMA and Action Alternative Segments qs-01, qs-02, x-06, and x-07 are along or within the La Posa LTVA.
- Action Alternative Segments cb-01 through cb-06, i-06, i-07, and x-08 cross the La Posa Destination and Colorado River Destination SRMAs.
- The proposed Arizona Peace Trail is crossed by Action Alternative Segment qn-02 north of Quartzsite. In addition, while the proposed Arizona Peace Trail is within the La Posa LTVA, it runs along Action Alternative Segment qs-01 for less than 1 mile and is crossed by Action Alternative Segments x-07 and qs-02.
- Action Alternative Segment cb-02 runs parallel to a portion of the proposed Arizona Peace Trail and Johnson Canyon, and the trail is crossed by Action Alternative Segment cb-05.
- Action Alternative Segments qn-02, qs-02, and i-06 pass through the Dome Rock 14-Day Camping Area.
- The Proposed Action and Action Alternative segments cross the proposed Arizona Peace Trail, including Johnson Canyon, in the Copper Bottom Zone at various points, with the greatest parallel length to Johnson Canyon being with Segment cb-02.
- Proposed Action Segments p-11 through p-14 cross the Colorado River Destination SRMA.
- The Mule Mountains ACEC is 0.8 mile from Proposed Action Segment p-17.
- The Colorado River Corridor Destination SRMA is 0.5 mile from Action Alternative Segment x-11.
- The alternative SCS 12kV distribution line would run adjacent to the Ramsey Mine Road dispersed camping area.

3.9 SOCIOECONOMICS

3.9.1 Study Area

The study area for the socioeconomics resource analysis is the entirety of the three counties (Maricopa and La Paz Counties, Arizona; Riverside County, California) containing the Proposed Action and Action Alternative segments. Socioeconomic data are readily available for counties and most urban areas but are sometimes not readily available for rural areas. Some elements of the analysis look at socioeconomic resources (i.e., population, age distribution, and housing units) specifically in the US Census block groups that are within 0.5 mile of the route segments or resources in municipalities or census designated places (CDPs). This latter area is called the block group study area.

3.9.2 Existing Conditions

3.9.2.1 Population

Table 3.9-1 in Appendix 3 presents the population of the socioeconomics study area by US, state, county, and block group for 2000, 2010, and 2014. Figure 3.9-1 (Appendix 7) shows the block groups analyzed. As of 2014, the three counties in the socioeconomics study area had a total population of 6.2 million. More than 63 percent of this population resides in Maricopa County, and Riverside County accounts for just over 36 percent of the total population in the study area. La Paz County accounts for the smallest share, with 20,348 residents, or about 0.3 percent of the total for the socioeconomics study area, but it is more representative of the rural nature of the Project Area. As of 2014, the population in the block group study area was 21,710.

While the population of the overall socioeconomics study area increased from 2010 to 2014, the population of the block group study area decreased by 0.9 percent (203 residents). Within the block group study area, the block groups in Maricopa and La Paz Counties lost residents overall, while the block groups in Riverside County gained residents overall. Although this percentage change is small compared to the trends in the counties, states, and US, the size of the population in the block group study area is very small to begin with, so even small changes could be substantive locally.

The population data do not reflect the winter visitors and part-time residents in the socioeconomics study area, notably important for Quartzsite in La Paz County. However, much like the declining population of permanent residents in La Paz County, the Quartzsite area has also seen a decline in long-term winter visitors.

Local governments provide public services such as police, fire, and emergency medical services; education; and waste management services to the permanent residents, as well as the winter tourists and temporary residents. These services are primarily based out of the Town of Quartzsite and the City of Blythe for the residents within the socioeconomics study area.

In 2014, the median age in Maricopa County was 35.3 years, while in Riverside County it was 34.2 years. However, in La Paz County, the median age was much higher at 54.6 years. Given that the US median age was 37.4 years, the population in La Paz County is much older than the national average, while the populations in Maricopa and Riverside Counties are slightly younger

than the national average. Again, these figures do not reflect the long-term winter visitors, many of whom are above the average age for La Paz County.

From 2000 to 2014, the median age increased in all jurisdictions and the median age in the socioeconomics study area increased faster than in the US as a whole. In Maricopa and La Paz Counties, it increased by 7.0 percent and 16.7 percent, respectively, while in Riverside County it increased by 3.3 percent. This compares with an increase of 5.9 percent in the US overall, a rate that is lower than in the Arizona counties but higher than in Riverside County.

Population age distribution and its change over time in the socioeconomics study area, in the block group study area, and across the US is illustrated in Table 3.9-2 in Appendix 3. The table demonstrates that, except for La Paz County, the largest population group in both 2010 and 2014 was younger working adults ages 18 to 44, while seniors 65 years and older were the smallest population age group. Similar to La Paz County as a whole, the block group study area has a relatively higher share of older population and smaller shares of younger working adults and children than the comparison areas. Since the 2010 Census, the share of the population in the block group study area under age 18 has decreased, while the share of the population 65 years or older has increased. This trend toward an older population decreases the size of the workforce available in this rural area.

3.9.2.2 Housing

From 2000 to 2014, the number of housing units in the socioeconomics study area increased from 1.85 million to about 2.46 million, which is an increase of about 34 percent. The largest portion of this increase occurred in Maricopa and Riverside Counties, which also account for the larger shares of housing units. This increase, however, occurred outside of the vicinity of the Project Area.

As of 2014, there were 13,750 permanent housing units in these block groups in the block group study area. This accounts for 0.55 percent of the total housing units in the socioeconomics study area, an indication of the rural nature of the socioeconomics study area. The number of housing units in the block group study area declined from 2010 to 2014. Details are provided in Table 3.9-3 in Appendix 3.

Trends in housing stock are frequently compared against trends in household formation. The relative magnitude and changes in the two series can provide some insight regarding the housing market situation and possible pressures on the demand (buying) or supply (selling) sides. Table 3.9-4 in Appendix 3 shows the number of households in 2000, 2010, and 2014. During this time, the number of households in the US and in the block group study area declined, while the number of households in Arizona, California, and the three counties increased slightly. The decline in the number of households nationally despite the increased population is likely due to an increase in the average household size, which suggests that, on average, dwelling units had more people living in them in 2014 than in 2010. In the block group study area, the average household size has generally decreased during this time, as has the overall population.

Table 3.9-5 in Appendix 3 shows trends in the average property prices (ownership residential housing units) in the socioeconomics study area as well as overall trends in the US. The table shows that Riverside County had the highest property values in the study area, followed by

Maricopa County. These property values tended to be much higher than the US average. The higher property values in both Riverside and Maricopa Counties are skewed by areas that are outside of the immediate Project Area and closer to Los Angeles and Phoenix, respectively.

From 2007 to 2014, property values declined in all of the areas examined here; however, the socioeconomics study area had much greater declines than did the US on average. In Riverside County, property values fell by more than 40 percent; in Maricopa County, they fell by more than 29 percent. La Paz County had a smaller decline of 4.3 percent (though from a much lower base price). This latter decline is similar to the average reduction of 3.4 percent across the US.

Housing vacancy rates were examined separately for ownership housing and for rental housing, though both rates consider seasonally vacant properties as vacant. The vacancy rates for both property types in Quartzsite and La Paz County are noticeably higher than the state and national averages, due at least in part to the seasonal nature of housing occupancy in the area.

3.9.2.3 Employment

The following data is drawn from the Bureau of Labor Statistics and the Bureau of Economic Analysis (BEA; BEA 2016) at the county level. The county-level data presented likely does not reflect the exact local conditions in the socioeconomics study area adjacent to the Proposed Action and Action Alternatives. The information for La Paz County is likely to best represent the overall study area conditions, since the parts of Maricopa and Riverside Counties in the study area are rural and are more similar to La Paz County than to the urban centers that dominate the Maricopa and Riverside data.

In all three counties, using data from 2001 through 2014 (Table 3.9-6 in Appendix 3), employment peaked in 2007 and declined from 2008 to 2010. Employment started increasing again in 2011. La Paz County, which is the most representative of the study area, has added a net of more than 800 new jobs compared to 2001, but that is still 275 fewer jobs than the peak in 2007 of 8,173. Employment in La Paz County has not yet returned to pre-recession levels. The annual data compiled by the BEA do not include the seasonal fluctuations associated with Quartzsite and its seasonal economy. As further shown in the table, from 2001 to 2014, employment increased more in Arizona and California (by 21.9 percent and 13.5 percent, respectively) than in the US as a whole (12.3 percent). La Paz County was the only area that had lower employment growth (11.5 percent) than the national level.

Trends in unemployment rates in the socioeconomics study area are given in Table 3.9-7 in Appendix 3. From 2000 to 2015, Maricopa County had the lowest unemployment rate (below the national rate). The unemployment rates in La Paz and Riverside Counties exceeded the relevant state averages and the national average. These study area trends were broadly consistent with national trends, with La Paz County exceeding the state and national unemployment rates. During the economic recession, unemployment rates in all of Riverside County exceeded 10 percent, with a peak of 13.8 percent in 2010, compared with rates of less than 10 percent in Maricopa County and the US. The Riverside County unemployment rate declined to 6.7 percent in 2015, but still remains above the US average and the Maricopa County rate. The La Paz County unemployment rate ran around 8 percent during the economic recession of 2008 and rose to a high of about 10 percent in 2010. Since 2010, the unemployment rate in La Paz County has dropped to 7.6 percent, which is higher than the US average and the Arizona average.

Table 3.9-8 in Appendix 3 and associated text show total employment by industry in the socioeconomics study area in 2001 and 2014. The tables demonstrate that the industrial structure of employment and trends in the socioeconomics study area are broadly consistent with the structure and trends in the US overall. The key characteristics of this structure are the following:

- Government or retail trade is the largest employment source in every area examined, with health care and social assistance the second or third largest employment source.
- Except for Maricopa County and the three-county socioeconomic study area, the largest share of employment is in government (Federal, state, and local).
- The second-largest share of employment was in retail trade and/or health care services, at over 10 percent of total employment (for each geographic area in the table).
- The share of the manufacturing industry in the socioeconomics study area is smaller than the US average (about 5 percent versus 7.5 percent in 2014).
- The number of construction jobs also declined from 2001 to 2014 in all areas.
- The share of the finance and insurance industry in Maricopa County is larger than the share in the other counties and larger than the Arizona share and the US average share. This share increased from 2001 to 2014. The many finance and insurance industry jobs in Maricopa County are likely in the Phoenix area rather than the part of the county along the Proposed Action and Action Alternative segments.
- Farm employment plays a larger role in La Paz County than in the other counties, Arizona, and the US as a whole. As of 2014, farm employment accounted for 4 percent of the total La Paz County employment.

3.9.2.4 Income

Average personal income data (including earnings, dividends, interest, rent, and transfer payments[1]) per capita in the socioeconomics study area is provided in Table 3.9-9 in Appendix 3. The data show that, from 2001 to 2014, average per-capita personal income in the study area was, with the exception of Maricopa County in 2006, lower than the average for the US overall. The data for Maricopa County reflect the well-paying jobs in the Phoenix metropolitan area, with Maricopa County exceeding the Arizona average every year, while the average for rural La Paz County was consistently well below both the Arizona and US averages. California consistently had higher average per-capita personal income than the US average, but Riverside County's average fell short of both the California and US averages.

In 2014, Maricopa County had the highest average per-capita personal income in the three-county socioeconomic study area at $41,222, followed by Riverside County at $33,590 and La Paz County at $29,219. For the same year, the US average was $46,049. This is an income difference between the US average and averages in the socioeconomics study area of about $4,800 for Maricopa County, about $12,460 for Riverside County, and $16,830 for La Paz County. The per-capita income gap between the counties in the socioeconomics study area and the US has grown over time, from a difference of $13,808 for La Paz County in 2001 to $16,830

[1] Transfer payments are government redistribution programs and include Social Security, the Supplemental Nutrition Assistance Program, Women Infants and Children, and other similar programs.

in 2014. The gap in Riverside County has doubled from $6,057 in 2001 to $12,459 in 2014. The gap in Maricopa County has grown from $1,118 in 2001 to $4,827 in 2014, even though the county exceeds the state average.

Earnings generate the largest share of personal income in all geographic areas evaluated here, and the breakdown of per-capita personal income composition (earnings; dividends, interest, and rent income; and transfer payments) is included in Appendix 3, Table 3.9-10 and associated text. Of the counties, states, and US, La Paz County has the lowest share of income from earnings (44.7 percent) and the highest share from transfer payments (36.4 percent). This is a much higher share of transfer payments than in Arizona (20.4 percent) and the US (17.2 percent).

3.9.2.5 Tax Revenues

Similar to employment and income data, tax revenues cannot readily be examined below the county level. For this reason, this information is presented at the county level only, with the information for La Paz County being the most relevant to the study area.

The key components of tax revenues available to local governments are property taxes and sales taxes. Details on each of these are included in Table 3.9-11 in Appendix 3 in this section shows that, in Maricopa and Riverside Counties, tax distributions increased initially (from 2006 to 2007). However, from 2008 to 2010, they decreased each year compared to the previous year. In 2011, tax distributions started increasing again. However, in Maricopa County, they have not fully recovered to the pre-recession 2007 peak. In La Paz County, tax distributions also decreased over the same period but recovered more quickly to the pre-recession level. Municipal distributions to Quartzsite have not recovered to the pre-recession level, while those to Blythe exceeded their pre-recession levels two of the last three years.

Property tax revenues and assessed property values as used for tax calculations in the socioeconomics study area from 2006 to 2015 are also provided in Tables 3.9-12 and 3.9-13 in Appendix 3. In La Paz County, tax revenues remained stable or increased over this period; in Maricopa and Riverside Counties, property tax revenues increased until 2009 and then started decreasing. In Maricopa County, property tax revenues reached a bottom minimum in 2013 and increased in 2014 and again in 2015. However, they have not fully recovered to the 2009 peak. In Riverside County, property tax revenues fluctuated somewhat from 2010 to 2013, and by 2015 they exceeded the pre-recession 2009 peak. Assessed property values increased until 2008–2010 (with some differences across the three counties) and then started decreasing. In Maricopa and Riverside Counties, property values started increasing again within the last 2 years with available data (that is, 2014 and 2015), but they have not fully recovered to the pre-recession level.

While the majority of the Proposed Action and Action Alternative segments avoid incorporated and other populated areas, they are located near the Town of Quartzsite, Arizona and the City of Blythe, California. The Town of Quartzsite General Plan details growth areas out to the year 2035 and beyond. None of the Proposed Action segments cross Tier II growth areas, which are indicated in the plan to be used for water, sewer, and roadway expansion. Segment qn-02 crosses a Town of Quartzsite General Plan Tier III growth area, which is slated for development and town growth in the year 2035 and beyond.

Payments in Lieu of Taxes from the Federal Government

Payments in lieu of taxes (PILT) are payments made to certain counties by the Federal government to account for losses in property taxes due to the presence of Federally-owned land within the county. Federally-owned lands are not taxable. The PILT program, which is administered by the US Department of the Interior's (DOI's) Office of the Secretary and PILT amounts paid to each county between 2000 and 2016. Federal land accounts for 68 percent of the land base in the Project Area in La Paz, Maricopa, and Riverside Counties. As such, the PILT received by each of the counties in the Project Area is important. PILT payments totaled $1,848763, $2,434,825, and 2,389,185 in 2016 for La Paz, Riverside, and Maricopa Counties, respectively (Table 3.9-14 in Appendix 3).

3.9.2.6 Nonmarket Values and Ecosystem Services

Non-Market Values

The Proposed Action and Action Alternative segments were designed to minimize impacts to urban areas and population centers, though the construction of any new transmission line would alter the natural landscape. These changes in the natural landscape may be noticeable for residents and visitors who place a high value on the natural beauty of the environment, including the beauty of the natural landscape and access to hunting, fishing, and other recreational opportunities, as part of their quality of life. These are considered non-market value resources – those that are not easily quantified or monetized but may contribute to and affect the economic success of the region.

Ecosystem Services

The nature of the non-market resources in the study area substantially overlaps with the topic of recreation opportunities, which are discussed in Section 3.8. The Proposed Action and Action Alternative segments are within the diverse ecosystem of the Colorado River Basin. Construction of any new infrastructure may alter production or delivery of current levels of ecosystem services to the population, both locally and regionally. Ecosystem services drive much of the recreation-based economy in the study area, including OHV usage, camping, hiking, wildlife viewing, and hunting. The availability of these resources is critical to the regional economy in the study area, in addition to farther-reaching functions such as carbon cycling, air quality, water quality, and wildlife habitat. As with non-market values, it is difficult to place a monetary value on many ecosystem services. Further, while not labeled as such, the current conditions of these ecosystem services are discussed at length in their resource sections of this EIS and respective baseline technical reports (HDR 2016b-d, 2017a-k).

3.9.2.7 Tourism and Recreation's Contribution to Local Economies

All three counties in the socioeconomics study area have a range of tourism and recreation uses and resources including hunting, fishing, wildlife watching, OHV use, and recreation on the Colorado River and its tributaries. Statistics on the total number of visitors to the socioeconomics study area and their impact on the local economy have been estimated in several studies. Some of the studies are targeted on specific forms of recreation (i.e., hunting, fishing, wildlife

watching, OHV use) and include both residents and non-residents. Other studies focus on non-residents, regardless of their motivation for visiting.

Tourism-related visitor spending and tax revenues for 2014 (Arizona Office of Tourism 2016; Visit California 2016), shown in Table 3.9-15 in Appendix 3 shows that spending ranged from about $137 million in La Paz County to $6.6 billion in Riverside County to $9.5 billion in Maricopa County. In La Paz County, this equates to visitor spending per resident of nearly $6,800. In Maricopa and Riverside Counties, this per-resident spending was much lower but still well above $2,000 per resident.

Tourism-related tax collections ranged from about $10 million in La Paz County to $557.6 million in Riverside County to $946 million in Maricopa County. Table 3.9-15 in Appendix 3 provides sales tax information and demonstrates that these tourism-related tax receipts by the states are substantially larger than the taxes distributed to each county by the state government. La Paz County receives just under 30 percent of the sales taxes that are levied and Riverside County receives just under 45 percent of the sales taxes collected.

Employment in 2014 in tourism-related industries that could be directly attributed to serving visitors is tabulated in Table 3.9-16 in Appendix 3 and shows that this employment amounted to 1,385 jobs in La Paz County, 94,200 jobs in Maricopa County, and 72,800 jobs in Riverside County.

3.9.2.8 Summary

Overall, the block group areas along the Proposed Action and Action Alternative segments are economically depressed when compared with the county, state, and country as a whole. The Proposed Action and Action Alternative segments have generally been designed to follow existing ROWs and avoid population centers and sensitive socioeconomic areas, though some of the Action Alternative segments cross near population centers in the Town of Quartzsite and City of Blythe.

Winter tourism and recreation play a substantial role in the economy of the socioeconomics study area, particularly in La Paz County, which is the most representative of the Project Area out of the three counties. Although precise data are difficult to locate, the RV parks and the BLM's LTVAs house thousands of temporary residents during the winter months (Wolinsky 2016). These visitors are essential to the local economy; however, they are not included in population estimates due to their temporary presence in the area.

3.10 ENVIRONMENTAL JUSTICE

3.10.1 Study Area

The environmental justice (EJ) study area is a 1-mile corridor encompassing the Proposed Action and Action Alternative segments. The study area includes all census block groups crossed by the Proposed Action and Action Alternative segments. This study area was designated due to the linear nature of the Proposed Action and is intended to include all adjacent and nearby communities that may be impacted.

3.10.2 Existing Conditions

3.10.2.1 Block Groups

The block groups within 0.5 mile on either side of the Proposed Action and Action Alternative segments comprise the EJ study area, as shown on Figure 3.9-1 (Appendix 7).

3.10.2.2 Minority Populations

Population and minority data are presented Table 3.10-1 in Appendix 3 for the two states, three counties, relevant cities and CDPs, census county division (CCD) areas, the EJ comparison area, and the individual block groups. The data in this table will be used for comparison purposes to determine whether the individual block groups have potential EJ populations.

In Maricopa County, Arizona, based on aerial imagery, it does not appear that there are any residential, commercial, or industrial uses within a 1-mile corridor along the Proposed Action and Action Alternative segments.

In La Paz County, Arizona, a review of aerial photographs showed that, within a 1-mile corridor along the Proposed Action and Action Alternative segments in Block Group 3, Census Tract 201, there is a largely undeveloped natural area with very few residential, commercial, or industrial uses (Figure 3.10-1, Appendix 7). Block Group 2, Census Tract 206.02, and Block Group 2, Census Tract 9403, both run along the eastern bank of the Colorado River, with the first mostly south of I-10 and the second mostly north of I-10 on CRIT lands. A review of aerial imagery shows some development within the EJ study area, or within the 1-mile corridor, for the area of Block Group 2, Census Tract 206.02. This includes open space, agricultural lands, RV parks, and commercial areas.

In Riverside County, California, as shown in Figure 3.10-1 (Appendix 7), there are commercial and recreational uses, including those along the Colorado River banks, as well as residences and agricultural uses.

Environmental Justice Comparison Area

The percentage of minorities in the overall EJ comparison area (sum of the three counties) is 49.3 percent, which is slightly higher than Arizona (43.1 percent) and lower than California (60.8 percent). It is also lower than two of the four CCD areas and higher than five of the eight cities and places (CDPs).

State, County, Census County Division, and Census Designated Places

The states of Arizona and California have overall minority populations of 43.1 and 60.8 percent, respectively. Riverside County has a minority population (61.7 percent) that is slightly (1.5 percent) greater than the state percentage, while La Paz and Maricopa Counties have minority populations (39.1 and 42.2 percent, respectively) slightly lower than that of Arizona as a whole. The city of Blythe (CDP) and the CCD area of Blythe both have percentages of minorities around 70 percent. Ripley CDP, which is south of Blythe, has a very high percentage of minorities (95 percent).

Block Groups

The block groups with relatively high minority populations are shaded in red on Figure 3.10-1 (Appendix 7). The following block groups have EJ minority populations with percentages at least 10 percent greater than the EJ comparison area percentage of 49.3: Maricopa County, Arizona (Block Group 3 in Census Tract 506.03); La Paz County, Arizona (Block Group 2 in Census Tract 9403); and Riverside County, California (Block Group 1 in Census Tracts 459 and 469, and Block Group 2 in Census Tracts 459 and 462.

Colorado River Indian Tribes

Within the EJ study area, Block Group 2, Census Tract 9403, with a minority percentage of 98.0 percent, includes CRIT lands. However, there are no residential or commercial areas that have been identified on CRIT lands within the 1-mile Project corridor. Census Tract 206.02 (including Block Groups 1 and 2) does not show a population of minorities greater than the total percentage of minorities within the total EJ comparison area. The Proposed Action and Action Alternative segments that are under CRIT jurisdiction include part of Segment p-11 and Segment cb-03.

3.10.2.3 Low Income Population

Relevant population and poverty data are presented in Table 3.10-2 in Appendix 3. The data in this table will be used for comparison purposes to determine whether the individual block groups have potential EJ populations with respect to low-income status. The EJ comparison area has an average of 17 percent of the population recorded as low-income individuals (Appendix 3 Table 3.10-2).

State, County, Census County Division, and Census Designated Places

For Arizona and California, the percentages of their respective populations living below the poverty level are 18.4 and 16.4 percent, which are close to the study's comparison area value. The City of Blythe (CDP) and the CCD area of Blythe both have a low-income population of about 24 percent. Ripley CDP, which is south of Blythe, has the highest low-income population percentage at 33.7 percent, while Mesa Verde CDP has the second highest (24.6 percent) out of the CDPs and CCDs evaluated. These local areas along the Proposed Action and Action Alternatives have low-income percentages that are substantially greater than the EJ comparison area.

Low-income Data from Block Groups

The block groups with relatively high minority populations are shaded in purple on Figure 3.10-2 (Appendix 7). The following block groups have percentages of low-income populations greater than the EJ comparison area percentage of 17: Maricopa County, Arizona (Block Group 3 in Census Tract 506.03); La Paz County, Arizona (Block Group 3 in Census Tract 201 and Block Group 2 in Census Tract 206.02); and Riverside County, California (Block Group 2 in Census Tracts 459, 462, and 470 and Block Group 1 in Census Tract 469.

3.10.2.4 Environmental Justice Communities

Over the entire Proposed Action and Action Alternative segments, potential EJ populations for both minority and low-income data were identified at the block group level. Regionally, potential EJ populations were identified in Arizona between Delaney Substation and Quartzsite and east of the Colorado River, while in California, potential EJ populations were identified in five of the six block groups in the EJ study area in Blythe. These are shown in Figure 3.10-3 (Appendix 7). Table 3.10-3 in Appendix 3 identifies those block groups that are potential EJ populations for low-income and/or minorities, as well as the applicable Proposed Action and Action Alternative segments.

Block Groups with Higher Percentages of Minority and Low-Income Populations than the Environmental Justice Comparison Area (EJ Populations)

In Maricopa County, Arizona, one block group out of three was identified with a minority population percentage greater than the overall minority population percentage in the EJ comparison area. In La Paz County, Arizona, three block groups out of ten were identified with minority or low-income population percentages greater than the EJ comparison area percentages; two had higher percentages of low-income population percentage and one had a higher percentage of racial or ethnic minority population. In Riverside County, California, five of the six block groups have minority and/or low-income populations greater than the EJ comparison area percentages. Four of the block groups have minority population percentages substantially greater than the EJ comparison area's minority population percentage, and four of the block groups have a low-income population percentage substantially greater than the comparison area's low-income population.

For the Town of Quartzsite, Arizona CDP, the census data show 4.1 percent minority representation and a low-income population of 9.6 percent. Data for the city of Blythe CDP and the CCD area of Blythe reveal that both have a low-income population of about 24 percent. Ripley CDP, which is south of Blythe, has the highest low-income population percentage, at 33.7 percent, while Mesa Verde CDP has the second highest (24.6 percent) of the CDPs and CCDs evaluated. These local areas have low-income percentages that are substantially greater than those of the EJ comparison area (Appendix 3, Table 3.10-2).

Colorado River Indian Tribes

A portion of Segment p-11 is adjacent to CRIT reservation lands, and Segments i-06 and cb-03 would cross CRIT reservation lands. The block group data covering this area show a 98 percent minority population, with 26.5 percent Native Americans. The lands crossed by all three of these segments are undeveloped.

As a Federally recognized Indian tribe, the CRIT are considered an EJ Population under BLM policy and guidance, as well as Council on Environmental Quality (CEQ) and EPA guidelines (CEQ 1997; EPA 2014). Should the CRIT be adversely and disproportionately impacted by the Proposed Action, ongoing consultation, as documented in Section 5.3.2, will be used to address tribal concerns. Previous consultation with the CRIT resulted in a request for further, detailed consultation regarding its lands and adjacent areas (Section 3.6, Concerns of Indian Tribes; Section 5.3, Consultation with Indian Tribes). Consultation and coordination with the CRIT

suggests that the Project Area is both a traditional cultural landscape and there may be TCPs present.

3.11 VISUAL RESOURCES

3.11.1 Study Area

The study area for visual resources encompasses the Proposed Action and Action Alternative segments. This study area includes an area 5 miles from the centerline of each Proposed Action and Action Alternative segment to cover an area 10 miles wide around each potential route.

3.11.1.1 KOP Identification and Selection

Measuring or rating the degree of contrast is done from the selected critical viewpoints or Key Observation Points (KOPs). KOPs are stationary points, or linear travel routes that are used to describe impacts to visual resources. KOPs typically are areas that have a public sensitivity (scenic vista, scenic highway, recreational trail, etc.). Multiple sources of information regarding public sensitivity to the study area were considered and field reconnaissance was conducted in the process of identification and selection locations for KOPs (Figure 3-8).

3.11.2 Existing Conditions

3.11.2.1 VRI & VRM in Study Area

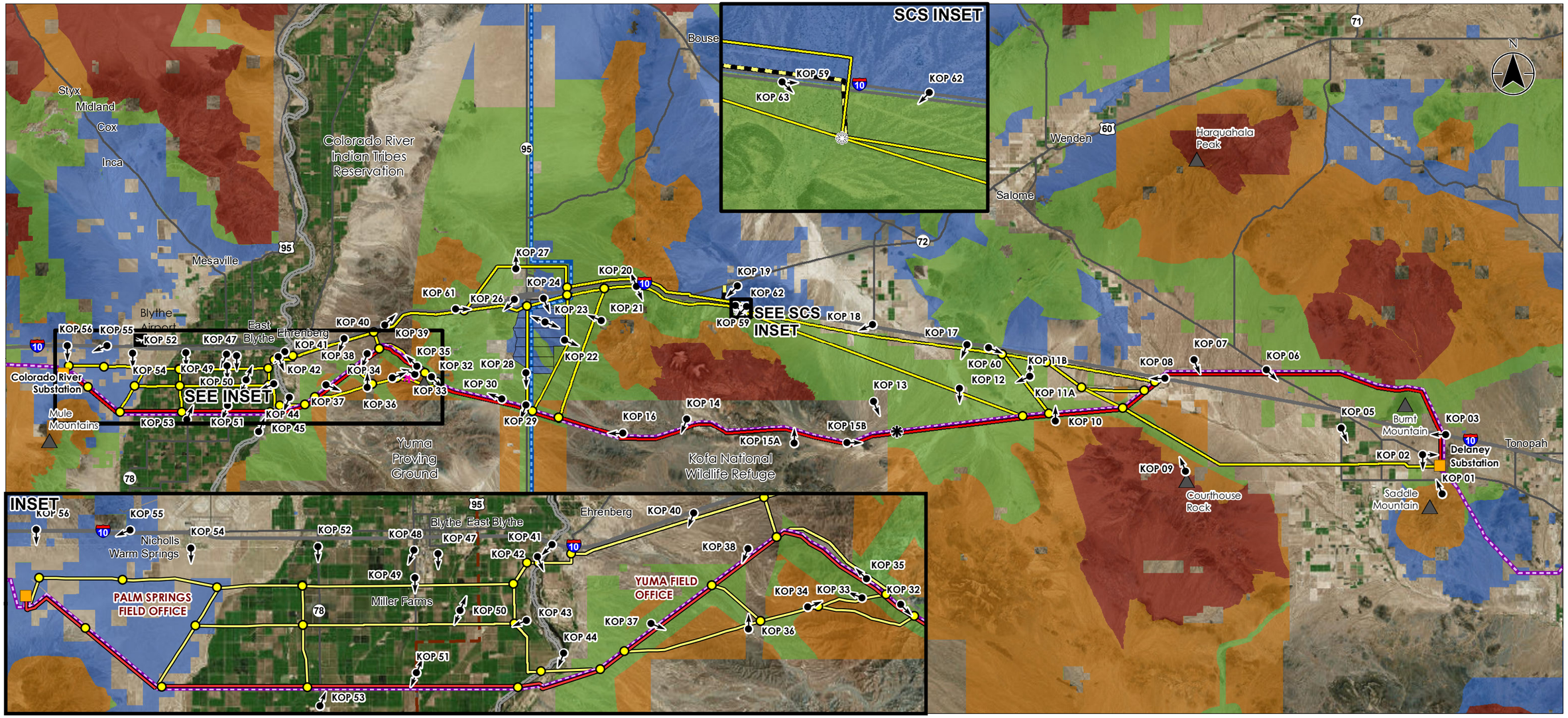
Visual resource inventory (VRI) classes have been defined for BLM-administered land under the Hassayampa, Palm Springs, and Yuma Field Offices. VRI classes are unavailable for BLM-administered land under the Lake Havasu and Lower Sonoran Field Offices. The data collected on scenic quality, viewer sensitivity, distance zones, and VRI classifications describe much of the study area in both Arizona and California and aided in describing the environment around the KOPs.

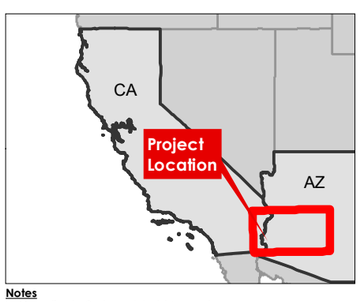
The VRI for the BLM YFO (EPG 2016) and the Palm Springs Field Office included areas where the Proposed Action and Action Alternative segments are located within the boundaries of the YFO and Palm Springs Field Office, respectively. VRI classes were assigned to these areas based on factors of scenic quality, sensitivity level, and distance zones. These classes and factors are shown in Figures 3.11-1, 3.11-2, 3.11-3, and 3.11-4 (Appendix 7).

VRM Classes in the study area are presented in Figure 3-8.

3.11.2.2 Visual Resources Study Area Overview

Mountains frame the study area and include Harquahala Mountain to the north of the first Proposed Action segment and Saddle Mountain located just south of the Delaney Substation. Harquahala Mountain is the tallest mountain visible—at over 5,600 feet in elevation (BLM 2014a)—and is in the seldom-seen distance from all primary travel routes. Saddle Mountain is in the foreground-middleground to background distances for the start of the Proposed Action and Action Alternative segments near Delaney Substation.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Key Observation Point (KOP)
- Substation
- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Johnson Canyon
- Route Segment Node
- Proposed Action*
- Alternative Route
- Alt SCS 12 kV Distribution Line
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Long-term Visitor Area
- Peak

BLM VRM Class
- I
- II
- III
- IV

0 9 18 Miles

1:570,240 (At original document size of 11x17)

* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 3-8
Ten West Link
KOPs and VRM Classes

The characteristic landscape in the study area consists of desert vegetation and major cultural modifications such as the towns of Tonopah and Quartzsite and the city of Blythe; surrounding agricultural land; existing transmission and distribution lines; and major roadways that include I-10, SR 95 in Arizona, and US 95 in California. The vegetation and soil colors represented in the undeveloped landscape consist of earth tones: browns, tans, grays, and greens.

The Proposed Action and Action Alternative segments would be visible from several areas, including I-10, state highways, local roads, residential developments, and recreational areas. Some of the closest residences to the routes in the study area are houses in Blythe, recreational vehicles (RVs) in McIntyre County Park, and Snow Bird West RV Park.

Some of the major features in or near the study area (such as prominent landscape features, major tourist attractions/outdoor recreation areas, and important utilities, etc.) include the Kofa NWR southeast of Quartzsite; YPG south of Copper Bottom Pass; the Colorado River Indian Reservation; Eagletail WA; Central Arizona Project Canal; and the Colorado River. Many recreationalists use the Copper Bottom Area located southwest of Quartzsite. Johnson Canyon is one of the most visited areas within the Copper Bottom Area, with several OHV trails open for use. The proposed Arizona Peace Trail winds through the study area, generally trending north-south, and follows or is in close proximity to several Proposed Action and Action Alternative segments in the Copper Bottom area.

The eastern portion of the study area is distinguished by a broad desert plain rimmed with rugged angular mountains. Mountain features within three WAs are visible: Big Horn Mountains WA, Eagletail Mountains WA, and New Water Mountains WA. Additionally, a portion of the Kofa NWR is intersected by a segment of the Proposed Action.

I-10 runs east and west across the northern portion of the study area, while numerous two-track, gravel, and hardened surface local routes crisscross the plain. I-10 offers distant scenic views of the mountain ranges rimming the plain. The area is dotted with a few residences and agricultural operations, and a few businesses are located at or near I-10 exits. The main development is the Delaney Substation, the DPV1 transmission line, and a power plant with monopole transmission lines connecting to the substation. The largest number of sensitive viewers are travelers on I-10, along with travelers on local routes, recreationists, and the few residents of this sparsely populated area.

The Proposed Action and Action Alternative segments would cross a north-south trending valley between two mountain ranges with the Town of Quartzsite located along I-10 in the northern portion of the valley. The eastern side of the valley is delineated by mountains that enclose around I-10, creating a somewhat tight pass as travelers move between the broad open desert approaching the Town of Quartzsite. In addition to I-10 (east-west), the main transportation route through the valley is US 95 (north-south), although there are a myriad of dirt roads and two-track routes throughout the area. Vegetation communities vary in diversity and visual interest by elevation and scenic mountain ranges attract attention. The valley is attractive and heavily used for winter tourism and recreation, including the BLM's La Posa LTVA, extensive areas of BLM-administered land open for 14-day camping, OHV routes and trails, the Town of Quartzsite Rock and Gem Show, and more than 25 campgrounds and RV parks. As such, the largest number of sensitive viewers in this area are tourists and recreationists, along with travelers on I-10.

The Copper Bottom Pass Area is scenic, mostly rugged and mountainous, and is valued and heavily used for winter recreation in conjunction with tourism and recreation. I-10 passes through the northern portion of the area and the Copper Bottom Pass Road traverses the Dome Rock Mountains. While there are a myriad off-road trails and routes in the area, aside from Copper Bottom Pass Road, the only other route through the Dome Rock Mountains is through Johnson Canyon, which is valued for the technical OHV route it offers. Vegetation is denser and uniform at the lower elevations surrounding the mountains and becomes more diverse and contributes to the scenic value. The main developments in the Copper Bottom Pass area are the DPV1 transmission line, a communications site atop Cunningham Peak, and a distribution power line on monopoles providing power to the communications site. A small residential development is located west of US 95 and off of Pipeline Road. The largest number of sensitive viewers in this area would be travelers on I-10; however, recreationists in this heavily used area would be more sensitive to visual changes. West of the Colorado River, the floodplain is private land that is irrigated and cultivated for a variety of agriculture uses. The area around the Colorado River is scenic and contains residential developments. The western end of the study area near the Colorado River Substation is BLM-administered lands that are flat desert plain with deep sands between the Mule Mountains to the south and the McCoy Mountains to the north. Native vegetation in this portion of the desert plain is very sparse and homogenous, which does not contribute to scenic values in the area. I-10 traverses the northern portion of the study area in California, while numerous gravel and hardened surface local routes crisscross the agricultural floodplain, which appears rural and pastoral. The area offers broken views of distant rugged mountains in all directions. Visible development in the area includes a gas pipeline crossing the river, the City of Blythe, the Blythe Airport west of Blythe, the town of Ripley south of Blythe, the DPV1 transmission line, the Colorado River Substation, a power plant, a solar generating facility, gen-tie lines, and numerous other transmission lines connecting to the substation. Other development in Blythe is concentrated at the I-10 exits and along the main route through town. Also notable are proposals for development of new solar generating facilities east of, west of, and surrounding the Colorado River Substation. The largest number of sensitive viewers in the area is travelers on I-10, along with residents and workers in the City of Blythe and Ripley areas.

Sources of nighttime light and glare include the Delaney Substation, the existing DPV1 line with its Federal Aviation Administration-required safety lights, lights from the occasional rural residence and agricultural operations, the lights from vehicles along I-10 and other highways; Town of Quartzsite businesses and residential development; during the winter visitor use season, campers using the surrounding BLM-administered land; the City of Blythe and surrounding rural communities with rural residential and commercial development; and the Colorado River Substation.

3.11.2.3 KOP Overview and KOP Descriptions

There are 61 KOPs selected for analysis (Figure 3-8), some of which have views in multiple directions, providing representative views of the Proposed Action and Action Alternative segments. Figures 3.11-5, 3.11-6, 3.11-7, and 3.11-8 (Appendix 7) present a more detailed look at KOP locations and relationships to VRM Classes. Table 3.11-1 in Appendix 3 provides a detailed overview of the KOPs that were examined for the Project and Tables 3.11-2 through 3.11-5 in Appendix 3 provide BLM VRM and VRI information by segment. Those KOPs that are key to evaluating the Proposed Action and Action Alternative segments and/or are needed for

potential VRM Class changes and RMP amendments are described in the sections that follow. Visual Contrast Rating Forms have been completed through Section B (Characteristic Landscape Description) for each KOP and are included in the project record. Information for confidential sites relative to sensitive cultural resources and concerns of Indian tribes is also contained in the project record.

KOP 20 – Gold Nugget Road

KOP 20 is located east of Quartzsite along Gold Nugget Road south of I-10 on BLM-administered land designated VRM Class III. The area is used for dispersed camping and other recreational uses, and therefore represents the views of recreationists in the area that would be looking north-northwest at Segment in-01 and south-southeast at Segment i-04, which are both on BLM-administered land designated VRM Classes III. Segment in-01 would be on BLM-administered land that are VRI Class II and III, comprised of scenic quality B and C, and high sensitivity, within the foreground-middleground distance zone. Segment i-04 would be on BLM-administered land that are VRI Class II and III, comprised of scenic quality B and C, and high sensitivity, within the foreground-middleground distance zone. The view from KOP 20 looking north-northwest (Figure 3.11-9a, Appendix 7) is somewhat enclosed to the east by rocky low hills and mountains. There are dark brown rocky hills and mountains in the foreground-middleground, with faint distant views of blue-gray mountains in the distant background. There is an open, light gray and relatively flat and smooth, largely unvegetated area in the foreground surrounded by sparse clumped wispy vegetation. Green, yellow-green, and gray-green vegetation becomes lumpy to uniform with distance. The mountains form a rough and jagged horizontal line at the skyline, while the flat unvegetated plain and vegetation band in the foreground create distinct flat horizontal lines. A few isolated saguaros create short vertical lines. Development visible included a few white structures in the foreground-middleground that appear as white dots. Overall, the scene is very natural and only minimally impacted by development but may appear more developed and disturbed with the presence of RVs when used for dispersed camping.

The view from KOP 20 looking south-southeast (Figure 3.11-9b, Appendix 7) is somewhat enclosed by rocky low hills and mountains. There are dark brown rocky hills and mountains in the foreground-middleground, with distant views of rugged dark mountains in the middleground to background. The immediate foreground consists of rolling and undulating rocky to pebbly light tan to gray desert with sparse clumped wispy vegetation and punctuated by occasional saguaros. Green, yellow-green, and gray-green vegetation becomes lumpy to uniform with distance. The mountains form a rough and jagged horizontal line at the skyline. The exposed earth and vegetation band in the foreground create subtle horizontal lines at the base of the mountains. Evidence of off-road travel creates curvilinear lines in the exposed earth. Aside from evidence of off-road travel, no development is visible.

KOP 59 – I-10 South of Brenda

KOP 59 (Figure 3.11-10, Appendix 7) is located along the shoulder of eastbound I-10 south of Brenda, Arizona. The KOP represents the views of travelers on eastbound I-10 looking east-northeast at Segment in-01 crossing from BLM-administered land on the south to the north side of I-10. Segment in-01 would be on BLM-administered land that are VRI Class II and III, comprised of scenic quality C and B, and high sensitivity, within the foreground-middleground distance zone. The view from KOP 59 is slightly enclosed to the north by a gently rising rugged

domed mountain in the distant foreground-middleground. The domed mountain is coarsely textured rock and drainages that are softened by vegetation growing on the slopes. The exposed earth in the immediate foreground is light gray-tan and rocky to stippled. Vegetation is shades of yellow-green, dark green, gray-green, and light gold; densely clumped and wispy but punctuated by occasional cylindrical saguaros; and becomes uniform and indistinct with distance. A gently undulating horizontal line is created by the domed mountain at the skyline and a short less distinct horizontal line occurs where dense vegetation in the foreground meets the skyline. The black freshly paved I-10 and its associated tan gray shoulder create strong horizontal and diagonal lines that draw the viewers eye to the east. With exception of I-10, the landscape is soft, mounded, and horizontal, with the only vertical elements provided by the short vertical lines of the saguaros.

KOP 22 – BLM LTVA #1

KOP 22 (Figure 3.11-11, Appendix 7) is located southeast of Quartzsite on BLM-administered land, within the BLM's La Posa LTVA, which is designated VRM Class IV. KOP 22 represents the views of users at the eastern edge of the LTVA looking east-southeast at Segments x-05 and x-06, also on BLM-administered land. Segment x-05 would be on BLM-administered land that is designated VRM Class II and/or IV, comprised of VRI Class III lands, scenic quality B and C, and high sensitivity, within the foreground-middleground distance zone. Segment x-06 would be on BLM-administered land that are designated VRM Class III, IV, and II comprised of VRI Class III lands, scenic quality C and high sensitivity, within the foreground-middleground distance zone. The view from KOP 22 looking east-southeast is open, flat desert plain in the foreground stretching to the base of tan to brown rugged and Rocky Mountains in the middleground. Exposed tan to gray earth in the foreground is rocky to pebbly with textures ranging from course to stipple to smooth. The immediate foreground is sparsely vegetated with wispy green, yellow-green, and gray green vegetation that is punctuated by scattered saguaros and becomes lumpy to uniform in the distance. Two-track routes create light tan-gray banded horizontal lines in the immediate foreground. Vegetation on the plain at the base of the mountains creates a subtle horizontal line that is further emphasized by vegetation in the immediate foreground; while the mountains themselves create a rough and jagged horizontal line at the skyline. Aside from the two-track routes, no development is visible. This KOP is located at the eastern edge of the LTVA. During the heavy use visitor season, it is possible that RVs, associated camping accoutrements, and OHVs would be visible, making the view appear more developed and busy.

KOP 24 – RV Park Quartzsite

KOP 24 (Figure 3.11-12, Appendix 7) is located outside an RV park on private property south of Quartzsite, Arizona and north of the BLM's La Posa LTVA. The KOP represents the views of RV park residents looking south-southeast who would be viewing Segments qs-01 or x-06 on BLM-administered land designated VRM Class III. Both Segments qs-01 and x-06 would be on BLM-administered land designated either VRM Class II, III, or IV, comprised of VRI Class III lands, and comprised of scenic quality C and high sensitivity, within the foreground-middleground distance zone. The view from KOP 24 is open and panoramic. Viewers are looking at flat desert plain in the immediate foreground, with a rugged mountainous middleground to background. Sparse green, dark green, and yellow-green native vegetation is clumped and rounded in the foreground, becomes more uniform with distance to form an

irregular green horizontal line at the base of the mountains. Variations in the light gray, dark gray-brown and light tan exposed earth create irregular but subtly horizontal lines and give the foreground a banded appearance. The rugged mountains create a jagged and broken irregular horizontal line at the skyline. The light gray to dark gray paved roads and their shoulders create distinct horizontal lines in the immediate foreground. Brown fence posts create short distinct vertical lines that are regularly repeated and connected by short undulating horizontal lines of chain. The series of metal monopoles of the WAPA 161kV transmission line create a series of repeated strong vertical lines that are reduced in intensity by background topography and intervening vegetation, and fade into the distance. The associated power lines are faintly visible as diagonal and undulating.

KOP 26 – Quartzsite Civic Event Parcel

KOP 26 (Figure 3.11-13, Appendix 7) is located along the gravel frontage road on the south side of I-10 south of Quartzsite, Arizona and north of the BLM's La Posa LTVA. The KOP represents the views of drivers on the frontage road and RV park residents looking southwest, who would be viewing Segment qs-02 weaving through the mountains within an area designated VRM Class III, and a portion of which would cross the LTVA. Segment qs-02 would be on BLM-administered land that are VRI Class II and III, comprised of scenic quality B and C, and high sensitivity, within the foreground-middleground distance zone. The view from KOP 26 is open and panoramic. Viewers at the KOP are looking at a gravel parking lot within an RV park in the immediate foreground; however, viewers within the RV park may be closer. Dark brown low hills and rugged mountains are in the middleground, and gray-blue rugged mountains are in the background. The parking lot is flat and uniformly light tan-gray and stippled. Sparse golden tan rounded shrubs line the frontage road and sparse clumped green, dark green, and yellow-green native vegetation quickly becomes more uniform with distance to form an irregular green horizontal line at the base of the low hills and mountains. The hills and rugged mountains create a jagged and broken irregular horizontal line at the skyline. Tire tracks in the gravel of the frontage road create converging vertical lines in the foreground. Brown fence posts create short distinct vertical lines that are irregularly repeated and occasionally connected by short undulating diagonal lines of chain. Numerous single wood power poles create scattered strong vertical lines that are faded with distance. A lattice structure with a cylindrical tank on top is in the immediate foreground, while road signs and colored business signs line I-10. Several small cubical buildings and white RVs are visible. During the winter heavy visitor season, the RV park would likely be full of RVs, which would partially block the view of the low hills and mountains.

KOP 27 – Boyer Road – Quartzsite North Side

KOP 27 (Figure 3.11-14, Appendix 7) is located on Boyer Road on the north edge of Quartzsite, Arizona. The KOP represents the views of residents of a neighborhood block looking northeast, north, and northwest, who would be viewing Segment qn-02 that would cross BLM-administered lands designated VRM Class III and IV to the northeast and northwest, and state trust lands to the north. Segment qn-02 would be on BLM-administered land that are VRI Class III and II, comprised of scenic quality C and B, and high sensitivity, within the foreground-middleground distance zone. The view from KOP 27 is open and panoramic. Viewers are looking at flat desert plain framed by rugged mountains in the background to the northeast and northwest. Exposed tan-gray earth in the foreground has been heavily impacted by a maintained dirt road and off-road travel. Native vegetation is absent in the immediate foreground, and is sparse green, dark

green, and yellow-green, clumped and rounded in the distant foreground; becoming dotted to uniform to create a green horizontal line at skyline and base of the mountains. The rugged mountains create a jagged and broken irregular horizontal line at the skyline. The edges of the dirt road and tracks from off-road travel create converging diagonal to curvilinear lines going into the distance. The communications tower is a prominent vertical focus of attention, while the short vertical lines of the WAPA 161kV monopoles are barely visible to the northeast.

KOP 28 – Highway 95 LTVA

KOP 28 (Figure 3.11-15, Appendix 7) is located at the intersection of US 95 and North 53rd Street south of Quartzsite, Arizona. The KOP represents the views of travelers on US 95 or 53rd Street at the intersection, looking south viewing Segment x-07 on BLM-administered land designated VRM Class III. Segment x-07 would be on BLM-administered land that are designated VRM Class III, comprised of VRI Class III lands, scenic quality C and high sensitivity, within the foreground-middleground distance zone. The view from KOP 28 is open and panoramic. Viewers are looking at flat desert plain with rugged mountains in the middleground to background. Exposed tan-gray earth in the foreground is stippled. Native vegetation is very sparse in the immediate foreground, and is sparse green, dark green, and yellow-green, clumped and rounded with distance; becoming dotted to uniform and punctuated with saguaros, forming an irregular green horizontal line at skyline and base of the mountains. The rugged mountains create a jagged and broken irregular horizontal line at the skyline. The light gray and white striped road surface creates clear horizontal and diagonal lines in the foreground, with the color banding in the road shoulders repeating some lines. The WAPA 161kV H-frame structures create strong vertical and geometric repeated lines going into the distance, while the monopoles on the opposite side of the road also somewhat repeat vertical lines. The transmission line itself is faintly visible, horizontal to curvilinear. Road signs and other signs at the intersection add colors and irregular short vertical lines that look jumbled.

KOP 29 – Highway 95 Crossing

KOP 29 (Figure 3.11-16, Appendix 7) is located south of Quartzsite, Arizona at the intersection of US 95 and the gravel road that travels west-northwest through Copper Bottom Pass, or east providing access along the DPV1 line. The KOP represents the views of travelers on Highway 95 or Copper Bottom Pass Road at the intersection, looking southeast, viewing Segments x-07, x-06, x-05, p-07, and p-08 on BLM-administered land. Segments x-05, 06, and 07, and p-07 and 08 would all be on BLM-administered land that are VRI Class III, comprised mostly of scenic quality C and high sensitivity, within the foreground-middleground distance zone, and on lands designated either as VRM Class II, III, or IV. The view from KOP 29 is open and panoramic. Viewers are looking at flat desert plain with rugged mountains in the middleground to background. Exposed tan-gray earth in the foreground is stippled. Vegetation is very sparse in the immediate foreground, and is sparse green, dark green, and yellow-green, clumped and rounded with distance; becoming dotted to uniform and punctuated with saguaros, forming an irregular green horizontal line at skyline and base of the mountains. The rugged tan, dark brown, black, and blue-gray mountains create a jagged and broken irregular horizontal line at the skyline. The gravel road texture variation creates diagonal and slightly curvilinear banding. The WAPA 161kV H-frame structures, monopole distribution structures, and DPV1 lattice structures create strong vertical and geometric repeated lines, but the scene appears cluttered jumbled with differing structure types and intervals. The transmission line itself is horizontal and curvilinear.

Overall, the scene is developed with the lines created by the various structure types. The naturalness of the surroundings is diminished by the amount and variety of development.

KOP 61 – I-10 Eastbound West of Quartzsite

KOP 61 (Figure 3.11-17, Appendix 7) is located along eastbound I-10 west of Quartzsite, Arizona. The KOP represents the views of eastbound I-10 travelers looking east at Segments i-06, qn-02, or qs-02, all of which would be located on BLM-administered land. The portion of Action Alternatives viewed from this KOP would all be on BLM-administered land that are comprised of scenic quality B and C, and high sensitivity, within the foreground-middleground distance zone, and VRM Class III & IV. The extent of the view from KOP 61 is limited by views of rugged blue-gray mountains in the background and smaller rugged light tan to dark brown hills in the distant foreground-middleground. Viewers are looking at a light tan slightly rolling desert plain in the immediate foreground that appears coarse and rocky to stippled, and sparsely vegetated. Vegetation is shades of yellow-green, dark green, and gray-green, mostly clumped and wispy, that becomes uniform and indistinct with distance. The desert plain gently slopes lower in elevation and the Town of Quartzsite (approximately 5 miles away) appears as a horizontal elongated cluster of dots in the middleground. A series of subtle horizontal lines are created in the foreground where vegetation follows undulation in the desert plain and meets the base of the nearest rugged hills, while the mountains create a jagged and undulating horizontal line at the skyline. The diagonal and flat gray paved I-10 is prominent in the view and leads the viewer to look east into the distance. Fence posts provide a series of short vertical lines barely noticeable in the vegetation to the south. Vehicles are dotted in the distance on I-10.

KOP 30 – Copper Bottom Pass Road #1

KOP 30 (Figure 3.11-18, Appendix 7) is located south of Quartzsite, Arizona along the gravel road that travels west-northwest through Copper Bottom Pass, west of the intersection with US 95. The KOP represents the views of travelers on Copper Bottom Pass Road looking west-northwest, viewing Segments p-09 and p-10 on BLM-administered land designated VRM Class III. Segment p-09 is within either VRI Class II or III (or both), comprised of scenic quality B and high sensitivity, within the foreground-middleground distance zone, and are on BLM-administered land designated VRM Class II. The view from KOP 30 is views flat desert plain with rugged mountains in the middleground to background enclosing the view. Exposed tan-gray earth in the foreground is stippled to coarse and rocky. Vegetation is very sparse in the immediate foreground, and is sparse green, dark green, and yellow-green, clumped and rounded with distance; becoming dense and uniform, forming a soft green horizontal line at the base of the mountains. The rugged tan, dark brown, and black mountains create a jagged and broken irregular horizontal line at the skyline. Tire tracks in the gravel road and other changes in texture create diagonal and curvilinear tan-gray banding. The monopole structures and DPV1 lattice structures create strong vertical and geometric repeated lines, but with slightly different intervals. The transmission line itself is horizontal and curvilinear. As travelers move through the landscape along the road, the utility structures become sky lined and visible, and attract more attention than the picture might otherwise indicate.

KOP 32 – Copper Canyon

KOP 32 (Figure 3.11-19, Appendix 7) is located in the Copper Bottom Pass area, west-southwest of Quartzsite, Arizona. The KOP represents the views of travelers on the gravel road through Copper Bottom Pass looking at Segments p-09, p-10, and cb-01 on BLM-administered land. Segments p-09 and p-10 are designated either VRM Class II, III, or both, comprised of VRI Class II and III, or both, have scenic quality of either C and B or both, comprised of lands with high sensitivity in the foreground-middleground zone Viewers are looking at the canyon bottom in the foreground enclosed by rugged mountains on either side, focusing the view on the middleground where the canyon opens up to the open desert plain with distant rugged blue-gray mountains at the skyline in the background. Horizontal to diagonal striations in the geology of the canyon walls converge at the mouth of the canyon emphasizing the focus on the distant views. Exposed tan-gray earth in the foreground is rocky to stippled. Native vegetation is dotted on the sides of the canyon, clumped in the foreground, becoming more uniform in the canyon bottom, in shades of green, dark green, and yellow-green. The rugged distant mountains create a short faint jagged horizontal line at the skyline. There are two existing power lines that are visible but not noticeable in the landscape from this KOP: a distribution line on monopoles delivering power to the communications site on Cunningham Peak and the DPV1 line on lattice structures. However, while driving along the gravel road, both the monopoles and lattice structures are more visible, obvious, and attract attention in a way that is not conveyed from this KOP. The KOP demonstrates how well the existing power infrastructure blends with the landscape under certain circumstances.

KOP 33 – Johnson Canyon

KOP 33 (Figure 3.11-20, Appendix 7) is located in Johnson Canyon in the Copper Bottom Pass area, west-southwest of Quartzsite, Arizona. The KOP represents the views of hikers and OHV recreationists looking at Segment cb-02 (which would be upslope to the left within the canyon) on BLM-administered VRI Class II and III land, comprised of scenic quality B and high sensitivity, within the foreground-middleground distance zone; and VRM Class II and III. Viewers are looking west-southwest at the enclosed landscape of the meandering canyon bottom in the foreground, enclosed by rugged mountains on either side, focusing the view where the canyon walls converge at the wash bottom. Landforms in the canyon are bold, angular, and somewhat conical. Repeated diagonal striations in the geology of the canyon walls and the diagonal slope lines point to the wash bottom, focusing the convergence. Exposed tan-gray earth in the foreground contains boulders and is rocky to stippled. Vegetation is dotted on the sides of the canyon, clumped in the foreground, punctuated by occasional saguaros, becoming more uniform with distance along the wash bottom, in shades of green, dark green, and yellow-green. The canyon walls form a sharp jagged horizontal line in the foreground-middleground. The wash bottom creates a light gray-tan irregular and indistinct curvilinear band. No development is visible, and despite the fact that the canyon is favored for OHV recreation, there are only minimally noticeable signs of use.

KOP 34 – Copper Bottom Alternatives Intersection

KOP 34 (Figure 3.11-21, Appendix 7) is located southwest of Quartzsite, Arizona, west of Copper Bottom Pass. The KOP represents the views of recreationists and backroad travelers looking east-northeast at the point where either Segment cb-01 or cb-02 would join with Segment cb-04 on BLM-administered VRI Class II land, comprised of scenic quality B and high sensitivity, within the foreground-middleground and seldom seen distance zones; and VRM Class II and III. The view from KOP 34 is enclosed by rugged angular pyramidal mountains in the foreground-middleground sloping down to the desert plain and lower angular rugged hills in the foreground. The rough and rocky to stippled wash bottom in the foreground is dotted with rounded shrubby green and yellow-green vegetation that becomes more uniform at the base of the mountains, and again becomes dotted on the hillsides. Occasional saguaros and ocotillos are visible and add to the diversity of vegetation. Vegetation at the base of the mountains forms a faint horizontal line that becomes sharp and distinct for a short distance at the horizon. The mountains create a jagged and undulating horizontal line at the horizon. A short segment of a rough two-track dirt road, along with rocks and vegetation along the wash create gently curvilinear gray-tan banding in the scene. Communication towers on top of Cunningham Peak are faintly visible as short thin vertical lines.

KOP 35 – Copper Bottom Pass Road #2

KOP 35 (Figure 3.11-22, Appendix 7) is located in the Copper Bottom Pass area, west-southwest of Quartzsite, Arizona. The KOP represents the views of travelers on the gravel road through Copper Bottom Pass looking at Segment p-11 on BLM-administered VRI Class II and III land, comprised of scenic quality B and high sensitivity, within the foreground-middleground and seldom seen distance zones; and VRM Class III. Viewers are looking at the canyon bottom in the foreground enclosed by rugged mountains on either side, focusing the view on the middleground where the canyon opens up to the open desert plain with distant rugged mountains at the skyline in the background. Diagonal striations in the geology of the canyon walls converge at the bottom of the canyon emphasizing the focus on the distant views. Exposed tan-gray earth in the foreground is rocky to stippled. Native vegetation is dotted on the sides of the canyon, sparsely clumped in the foreground, becoming more uniform in the canyon bottom, in shades of green, dark green, and yellow-green. The rugged distant mountains create a short faint jagged horizontal line at the skyline. The gravel road is visible as tan-gray curvilinear banding in the canyon bottom going into the distance. The existing DPV1 transmission line and lattice structures are noticeable in the foreground, and continue on down the canyon, but blend with the landscape to the point of being barely noticeable. However, while driving along the gravel road, the lattice structures are more visible, obvious, and attract attention in a way that is not fully conveyed from this KOP. The KOP helps to demonstrate how well the existing power infrastructure blends with the landscape under certain circumstances.

KOP 36 – Dome Rock Mountains

KOP 36 (Figure 3.11-23, Appendix 7) is located southwest of Quartzsite, Arizona, west of Copper Bottom Pass on Reclamation-managed public lands. The KOP represents the views of recreationists and backroad travelers looking north at Segment cb-05 or cb-06 on Reclamation-managed public lands. Segments cb-05 and 06 would both be on BLM-administered land that are comprised of scenic quality B and C, and moderate sensitivity. Portions would also be within

either the foreground-middleground and seldom seen distance zones and VRI Class III and/or IV, and VRM Class II and/or III. The view from KOP 36 is open and panoramic with flat desert plain in the foreground-middleground and low hills and rugged angular pyramidal mountains in the middleground and background. The gravely to stippled exposed earth in the foreground has clumped rounded shrubby green, yellow-green, and gray green vegetation that becomes more uniform with distance. Vegetation at the base of the low hills and mountains forms a distinct horizontal line. Another irregular horizontal line is created by light tan vegetation or exposed earth. The mountains create a jagged and undulating horizontal line at the skyline. Communication towers on top of Cunningham Peak are faintly visible as short thin vertical lines. Lattice structures of the DPV1 line are regularly spaced and faintly visible at the horizon in the distance. Rocks have been arranged to create a fire ring in the immediate foreground.

KOP 37 – Ehrenberg Cibola Road

KOP 37 (Figure 3.11-24, Appendix 7) is located southeast of Ehrenberg, Arizona, on BLM-administered land. The KOP represents the views of recreationists and backroad travelers looking south-southeast at Segments p-13 or cb-05 on BLM-administered land. Segment p-13 would be within VRI Class III and/or IV lands, comprised of scenic quality C and/or B and moderate sensitivity, within the foreground-middleground and seldom seen distance zones; and designated VRM Class II and/or III. The view from KOP 37 is open and panoramic with flat desert plain in the immediate foreground, low hills in the foreground-middleground, and rugged angular pyramidal mountains in the background. The gravely to stippled exposed earth in the foreground has sparse clumped rounded shrubby green and yellow-green vegetation that becomes dotted with distance. Vegetation at the low hills and mountains is not discernable. The mountains create a jagged and undulating horizontal line at the horizon. Lattice structures of the DPV1 line are regularly spaced geometric structures that attract attention in the foreground and run perpendicular to Ehrenberg Cibola Road. Transmission lines are soft horizontal curvilinear lines. The graded dirt road is visible in the foreground as a strong horizontal linear feature that disappears into the middleground. However, as it is simply bladed native materials, the color blends with the surrounding landscape. The road, tracks in the dirt, and shoulders create banding in shades of tan-gray. The associated fence line is faint in the foreground-middleground.

KOP 38 – Ehrenberg Wash

KOP 38 (Figure 3.11-25, Appendix 7) is located east-southeast of Ehrenberg, Arizona, in Ehrenberg Wash on Reclamation-managed public lands. The KOP represents the views of recreationists and backroad travelers looking south-southeast to southwest at Segment p-12 and Segment cb-06 or Segment cb-05 on BLM-administered land. Segments p-12 and cb-05 would be within VRI Class II, III, and IV lands; comprised of scenic quality C and B, and moderate or high sensitivity, within the either the foreground-middleground and seldom seen distance zones, and designated VRM Class III. The view from KOP 38 is open and panoramic with flat desert plain in the foreground-middleground and hills and rugged angular pyramidal mountains in the background, which form a jagged line at the horizon. The gravely to stippled exposed earth in the immediate foreground is devoid of vegetation, transitioning to clumped rounded shrubby green, yellow-green, and gray green vegetation in the foreground that becomes dense and uniform with distance. Vegetation forms a broken and irregular horizontal line at the horizon west of the mountains. A diagonal line is created by a bladed road in the foreground. There are two yellow road signs visible in the foreground, one along the road and the other in the vegetation indicating

the presence of another road. Lattice structures of the DPV1 line are regularly spaced and faintly visible in the foreground-middleground with transmission lines that form faint undulating horizontal lines.

3.11.2.4 Linear KOPs

I-10 Linear KOP

Traveling westbound along I-10 at highway speeds and entering the study area from the east, there are low rough hills on either side of the highway. The viewer can see the DPV1 structures crossing the highway, coming out from behind the hills to the south, then going north in front of the hills. Once the viewer crosses under the eastern crossing of I-10 by the DPV1 line and through the hills either side of the highway, the view opens up to a wide desert plain. The Delaney Substation is tucked slightly behind the hills south of I-10, and is difficult for westbound travelers to see, but is more clearly visible for eastbound travelers. Figure 3.11-2 (Appendix 7) shows that the scenic quality ratings for the area visible around I-10 are higher to the south than to the north. While mountainous terrain is visible in both directions, the higher scenic quality to the south, including views of Saddleback Mountain, Courthouse Rock, and mountains areas of the Kofa NWR attract the attention of viewers traveling along I-10.

Continuing west on I-10, viewers see the DPV1 line merging with and crossing I-10 from north to south, then diverging from I-10 as viewers continue to travel west. Views remain open and unimpeded except for a slight enclosure where the highway passes through another small range of low rugged hills. Views to the south continue to demand attention and evolve as the viewer comes closer to the New Water Mountains WA, Kofa NWR, and Kofa WA. Views along westbound I-10 gradually become enclosed by mountains. KOP points representing views of travelers on I-10 in the eastern portion of the Project Area include KOPs 3, 8, 17, 18, 20, 59, and 60.

Viewers emerge from the enclosed views of the Plomosa Mountains looking across a north-south trending valley that dips down to the Town of Quartzsite, then increases in elevation as I-10 continues westward through the Dome Rock Mountains. While views are scenic looking both north and south, southern views of the Kofa WA and NWR attract viewers' attention.

During the winter months (roughly October through March) viewers traveling along I-10 will notice individual, clustered RVs in campsites in the low hills or wash areas; and densely occupied areas of RVs on the desert plain as they approach Quartzsite. Also, while approaching Quartzsite from the east, viewers will see monopole structures and conductors of the WAPA 161kV transmission line crossing I-10 after circumnavigating Quartzsite to the north, then briefly crossing the BLM La Posa LTVA to the south.

Passing through Quartzsite, the scene is typical of small towns along interstate or other major highways, with fast food restaurants, gas stations, truck stops, lodging, and residences. In the winter months, Quartzsite appears bustling and congested with packed RV parks, people, and vehicles in the area, especially during the Gem and Rock Show in January. The small town enjoys a backdrop of scenic mountains near the highway and enclosing views to the south, and somewhat more distant to the north. West of Quartzsite, the view becomes rapidly enclosed as

the highway enters the Dome Rock Mountains. KOP points representing the views along I-10 in the vicinity of Quartzsite include KOPs 26 and 61.

West of Quartzsite, views are enclosed to the north and south by the rugged and scenic Dome Rock Mountains. Emerging from the Dome Rock Mountains to the west, the scene opens up and becomes panoramic, offering views of the west side of the Dome Rock Mountains and the desert plain to the west, approaching the Colorado River. When traveling east on I-10 through the Copper Bottom Pass area, viewers can look southeast up Copper Bottom Pass and see the DPV1 transmission line emerging from and approaching I-10, before diverging from the highway and fading into the distance. Westbound travelers see the DPV1 line approaching and diverging from I-10, but because of the angle of view, cannot easily see up Copper Bottom Pass. This area is also used for dispersed camping and may be dotted with individual or groups of RVs during the heavy visitor use season. KOP points representing the views of travelers on I-10 in the area of Copper Bottom Pass include KOPs 39 and 40.

Westbound travelers on I-10 see the desert plain transitioning to agricultural areas and riparian vegetation approaching Ehrenberg and the Colorado River. Travelers crossing the Colorado River looking south see residential and commercial development along the banks of the river, and a pipeline bridge also crossing the river. Once across the river, looking south the view is of the river floodplain that is developed for agriculture. Traveling through the City of Blythe is similar to Quartzsite in that I-10 is rimmed with fast food establishments, restaurants, gas stations, truck stops, lodging, and residential areas; however, the backdrop to the City is mostly agricultural with distant mountain views.

West of the City development, the agricultural plain rises to desert bluffs, that become desert plain. Development becomes more industrial in nature, with views of the Blythe Airport, a power plant, a solar generating facility, and several transmission lines leading to the Colorado River Substation. Just south of the Highway and Airport is the small residential community of Nichols Warm Springs. The Colorado River Substation comes into view approximately 1 mile south of I-10, along with numerous gen-tie and transmission lines. The DPV1 transmission line can be seen distantly approaching the substation.

Because the Proposed Action would be approximately 6 miles south of I-10, and the majority of the Action Alternatives would be a few miles south of I-10, KOPs were mainly established to view the Colorado River Substation area. Therefore, KOP points representing the views of travelers along I-10 include KOPs 55 and 56.

US 95 Linear KOP

US 95 travels north-south through the north-south trending valley containing the Town of Quartzsite. The stretch of US 95 south of Quartzsite in the study area is heavily used for recreation access in the Quartzsite area. The La Posa LTVA is accessed from US 95 just south of Quartzsite, and gravel roads from US 95 offer access to the Kofa NWR to the east and the Copper Bottom Pass area in the Dome Rock Mountains to the west.

Southbound travelers on US 95 south of Quartzsite are looking at the relatively narrow desert plain between the Plomosa and New Water Mountains on the east and Dome Rock Mountains on the west. On the east side of the highway are monopole and H-frame structures of the WAPA

161kV transmission line. On the west side of the highway are single wood pole structures for local distribution and/or telephone lines. The La Posa LTVA is located on both the east and west sides of US 95, with occasional visitor contact stations. In winter months, the area would be densely occupied with RVs. In times outside of the heavy visitor use season, the area appears even more sparsely vegetated than the surrounding landscape and dotted with occasional RVs. Pipeline Road west of US 95 provides access to a small residential community that is distantly visible from the Highway. KOP points representing the views along Highway 95 south of Quartzsite include KOPs 28 and 29.

3.12 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE PROJECTS

3.12.1 Introduction

NEPA identifies three types of potential impacts: direct, indirect, and cumulative. A cumulative impact is the impact on the environment that results from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7).

Within the cumulative effects areas (CEAs), a list of past, present, and reasonably foreseeable future projects that could result in related or cumulative impacts was developed. To collect data for the past, present, and reasonably foreseeable future projects list, general plans and other publicly available documents were reviewed, agency and county representatives were contacted, and developers were contacted to gather additional information on planned projects (HDR 2017k). Agencies contacted include the BLM field offices, Reclamation, DOD YPG, ASLD, California State Lands Commission (SLC), as well as Maricopa, La Paz, and Riverside Counties.

3.12.2 Cumulative Effects Areas

For most resources, the CEA is an area that includes the Proposed Action and the Action Alternative segments, and a buffer of 2 miles from the outermost segments. This was selected because it is equal to the resource's study area and the impacts identified for those resources would not have an effect outside of the area. However, the range of the CEA for some resources is larger than the general 2-mile buffer due to the nature of the resource and the impact study area. Air quality has a CEA with a 31-mile radius because air impacts can affect the entire basin in which they occur. The traffic and transportation, visual, cultural resources, and Concerns of Indian tribes' CEA is up to 5 miles from the outermost segment. For the EJ and socioeconomic resource areas, the CEA encompasses the entire three county areas. Figure 3.12-1 (Appendix 7) presents the CEAs for these environmental resource areas.

3.12.3 Past, Present, and Reasonably Foreseeable Actions

Land ownership plays an important role in how land is managed and the types of activities that take place. All CEAs for the Project include a mix of Federal, state, Indian, and private lands. Public lands managed by the BLM are used for a variety of purposes including dispersed recreation, wildlife, livestock grazing, mining, and transportation and utility corridors. Public

lands are also managed for special values, including the Big Horn Mountains WA, Hummingbird Springs WA, New Water Mountains WA, Kofa NWR, Dripping Springs Area of Critical Environmental Concern (ACEC), and Mule Mountains ACEC. Public lands managed by Reclamation are managed to operate dams, power plants, and canals providing water and hydroelectric power. State trust lands are generally managed for commercial uses that generate revenue for the benefit of Arizona or California schools, or managed for wildlife (and their habitat), or recreation. State trust lands are also developed for public purposes such as roads, utilities, and other infrastructure. Private lands have been developed for residential and commercial purposes, agriculture, roads, highways, landfills, airports, etc. The lands included in all of the CEAs contain a mixture of undeveloped lands, agriculture, cities and towns, roads and highways, utilities, commercial and residential development, military facilities, and mining.

Table 3-1 details the land ownership by CEA. The information in Table 3-1 is referred to throughout the discussions by resource topic in the proceeding sections.

Table 3-1 Land Ownership within the 2-Mile and 5-Mile CEAs

LAND OWNERSHIP	TOTAL 2-MILE CEA		TOTAL 5-MILE CEA	
	AC	%[1]	ACRES	%[2]
BLM	395,687.5	55.6	655,709.2	55.8
Reclamation	12,828.1	1.8	13,109.5	1.1
USFWS	68,583.4	9.6	116,008.6	9.9
Military	14,618.1	2.1	39,866.8	3.4
Indian Lands	8,718.0	1.2	27,957.7	2.4
County	15.5	<0.1	15.5	<0.1
Private	148,933.9	20.9	237,617.8	20.2
State Trust – Arizona	62,138.7	8.7	84,350.6	7.2%
State – California	49.2	<0.1	924.2	<0.1
Total All Owners	711,573.1	100	1,175,643.6	100.0

[1]percentages based on the total acres within the 2-Mile CEA.

[2]percentages based on the total acres within the 5-Mile CEA.

Past, or existing, land uses from which disturbance can be inferred have been quantified (Table 3-2) for the General CEA (2-mile) and the 5-mile CEA. These calculations provide a baseline for general conditions within the CEAs. Specific present and reasonably foreseeable future projects that could contribute to cumulative impacts are listed in Table 3.12-1 and Table 3.12-2 in Appendix 3. These tables indicate the project name and project type, as well as its location and status. Each project is identified by a map number, keyed to Figure 3.12-1 (Appendix 7). This figure shows the locations of projects that could result in impacts within the CEAs.

Table 3-2 Quantifiable Land Use within the 2-Mile and 5-Mile CEAs

LAND USE	TOTAL 2-MILE CEA		TOTAL 5-MILE CEA	
	ACRES	%[1]	ACRES	%[2]
Agriculture[3]	43,976.6	6.2	76,796.9	6.5
Public Lands (BLM)[4]	387,009.3	54.4	636,423.9	54.1
Reclamation[3]	12,645.8	1.8	12,916.9	1.1
Commercial[3]	2,953.0	0.4	4,615.8	0.4
County	15.5	<0.1	15.5	0
Indian Reservation	8,633.4	1.2	27,572.5	2.4
Industrial[3]	3,261.9	0.5	3,273.6	0.3
Local	527.4	0.1	751.6	0.1
Military	14,663.7	2.1	39,885.1	3.4
Mixed Use[3, 5]	4,544.5	0.6	6,010.8	0.5
Open Space	5,630.7	0.8	9,465.3	0.8
Open Water	212.4	<0.1	265.2	<0.1
Public/Semi-public[3]	2,649.1	0.4	3,921.6	0.3
Urban Residential[3]	7,988.8	1.1	22,496.1	1.9
Rural Residential[3]	65,819.5	9.3	95,291.8	8.1
Solar Facility[3]	12,291.7	1.7	23,399.6	2.0
Special Designation Lands	39.3	<0.1	211.9	<0.1
State Trust Lands	61,557.4	8.7	84,475.1	7.2
Transmission Lines[3,6]	995.0	0.1	1,107.2	0.1
Transportation[3,6]	8,071.2	1.1	11,515.8	1.0
USFWS	68,077.0	9.6	115,231.3	9.8
Totals	711,573.1	100.0	1,175,643.6	100.0
Total Acres Disturbance[3]	165,197.1	23.2	261,346.1	22.2

[1]percentages based on the total acres within the 2-Mile CEA.

[2] percentages based on the total acres within the 5-Mile CEA.

[3]for purposes of quantification, these categories are considered disturbances.

[4]land use either undeveloped or unspecified in GIS data

[5]mixed use includes multi-family commercial use, employment centers, neighborhood commercial, planning development, and undetermined uses.

[6]Road centerlines were buffered from 10 (i.e., driveway) to 60 feet (i.e., freeway) depending on road type; transmission lines assume 50-foot ROW

Collectively, these projects represent known and anticipated activities that may occur in the general Project vicinity and that have the potential to contribute to a cumulative impact. Because the Project would be linear, most of the projects in Table 3.12-1 and Table 3.12-2 in Appendix 3 would not contribute to cumulative impacts along the entire route. These projects are limited in their geographic extent. Others, such as the DPV1 and the El Paso National Gas pipeline, are linear facilities that would parallel or overlap with segments of the Project over great geographic distances, in multiple counties. The majority of the planned projects in the CEA are located in Riverside County, California (Figure 3.12-1, Appendix 7).

3.12.4 Cumulative Project Scenario by Resource

3.12.4.1 Soil Resources

Geographic Scope

The CEA for soils is the area that includes the Proposed Action and Action Alternative segments, and a 2-mile-wide buffer surrounding them. The CEA for Soil Resources encompasses 711,573 acres.

Cumulative Conditions

The primary source of impacts to soils is surface disturbance which is directly tied to land use. Disturbed soil loses its structure and porosity when disturbed through displacement or compaction by heavy equipment. Consequently, the soil is more prone to erosion by water or wind and may be less able to support some kinds of vegetation (loss of productivity).The types of past and present disturbances that have affected soils in the CEA include , utility corridors, road construction, , energy development, mineral extraction, livestock grazing, agricultural activities and recreational use. These activities and other types of developments could modify surface topography, thus altering drainage and erosion. (Table 3-2 above and Table 3.12-1 in Appendix 3).

Numerous utility and energy development projects have occurred in the CEA, including the DPV1 transmission line, WAPA transmission line, El Paso natural gas pipeline system, and numerous solar facilities and gas power plants (Appendix 3, Table 3.12-1). Known active existing mines in the general vicinity of the Project include the West Port Gold Project, the Ehrenberg Wash pit, and the Plomosa Mine Quarry.

3.12.4.2 Biological Resources

Geographic Scope

The CEA for biological resources, including vegetation and wildlife resources, is the general CEA which includes the Proposed Action and Action Alternative segments and a 2-mile-wide buffer (711,573 acres).

Lower Sonoran Desert

- Approximately 43 percent of the Lower Sonoran region is in Federal ownership, 23 percent is private, 10 percent is state trust lands, and 24 percent is tribal land.

Upper Sonoran Desert

- Approximately 47 percent of the Upper Sonoran region is in Federal ownership, 12 percent is private, 17 percent is state trust lands, and 24 percent is tribal land.

Cumulative Conditions

Past and present land uses have altered the extent, structure, and composition of native vegetation communities in the CEA. Vegetation communities adjacent and near existing highway corridors have largely been degraded by long-term impacts associated with easy access off the highways for recreation; commercial, residential, and agricultural development adjacent to I-10, including the presence of roads, canals, and various utility lines; and the LTVA along US 95. Evidence of OHV use is present throughout, resulting in damage to and loss of vegetation. Highway corridors function as dispersal routes for non-native invasive plants. Commercial and residential developments and associated infrastructure, as well as agricultural development, results in clearing native vegetation; grazing by livestock can contribute to increased competition with native species for forage, facilitating the spread of noxious and non-native invasive weeds, changing the structure and composition of native plant communities, and degrading water quality. Undeveloped lands generally retain their native vegetation communities, with noxious and invasive weed species often taking root, especially in areas near roads and other disturbances.

Past and present actions in the CEA (Table 3-2 above and Table 3.12-1 in Appendix 3) have resulted in negative impacts to wildlife at various levels. The primary impact to wildlife resources within the CEA include habitat loss and fragmentation, and displacement of wildlife as a result of human presence and habitat changes associated with past and present community development, roads, grazing, agricultural development, utility development (electric, water, gas, etc.), recreation, and mining. High traffic volume on interstate highways has fragmented habitat and impeded wildlife movement across the landscape; facilitated human access to adjacent areas resulting in disturbance to wildlife and damage to habitats, especially by off road vehicles; and caused repeated loss of individual animals to road mortality over the long-term, resulting in reduced population numbers. Smaller less mobile wildlife species are susceptible to crushing and mortality by vehicle traffic and other development activities.

The AGFD (2012) has summarized existing conditions and stressors that are important for the conservation of biodiversity in the Sonoran Desert region. The following summary is from that document and is generally applicable in most of western Arizona and eastern Riverside County in California.

Lower Sonoran Desert

- More than 21 percent of lower Sonoran desertscrub has been replaced by development or agriculture; this region is being further reduced by urban expansion and energy development.
- Much of the area has been degraded by livestock grazing.

Upper Sonoran Desert

- About 8 percent of this region has been replaced by development or agriculture.
- Invasion of nonnative plants and a resulting increase in the risk of wildfire in areas where fire was not a natural occurrence is an important threat to this region.

Potential impacts or threats to vegetation in the CEA and surrounding region include the following:

- Altered surface hydrology
- Disease
- Invasive plant and animal species
- Fire
- Power lines
- OHVs (especially in xeroriparian washes)
- Climate change
- Drought
- Canals and pipelines
- Military activities

Reasonably foreseeable future actions (Table 3.12-2 in Appendix 3) in the CEA include: additional transmission lines, roads, and other linear disturbances (e.g., transmission lines); large-scale energy development (i.e., solar facilities and a power plant); mine development; and additional OHV use and other dispersed and concentrated recreational activities. With the presence of the Project and added transmission capacity, the CEA may be more attractive to new utility scale energy development than without the Project.

3.12.4.3 Cultural Resources

Geographic Scope

The CEA for the analysis of cultural resources is the Proposed Action and Action Alternative segments, and a 5-mile-wide buffer (1,175,644 acres). This is the area in which direct and indirect impacts to cultural and historic resources could occur through physical disturbance, encroachment, or visual impacts. A 5-mile buffer should encompass the extent of the visual analysis and the vantage points from which the Proposed Action and Action Alternative segments, and other past, present, and reasonably foreseeable disturbances can be discerned. Although the CEA for cultural resources was generally within 0.5-mile of the Proposed Action and Action Alternative segments, aerial photos for traditional and cultural properties within 5 miles of the segments were reviewed to take into account cultural, historic, and visual impacts.

Cumulative Conditions

Land ownership is detailed in Table 3-1 and shows that 70.2 percent of the CEA is under Federal regulatory oversight, subject to Section 106 of NHPA. An additional 84,350 acres (7.2 percent) are Arizona state trust lands and 924 acres (less than 0.1 percent) are California state lands, subject to state regulatory oversight.

Past and present disturbances to cultural resources in the CEA have been the result of utility installation, road development, ranching/agriculture, residential and commercial development, archaeological excavation, recreational activities, and likely vandalism and unauthorized artifact collection. The past and present land uses in the CEA have resulted in the loss, disturbance, theft,

and burial of cultural artifacts and sites, as well as the modification and alteration of the setting of cultural sites and resources. The incremental degradation of cultural resources reduces the information and interpretive potential of historic properties. Development on state and Federal lands requires that cultural resource surveys be conducted to determine the presence of cultural resource sites eligible for listing on the NRHP. As directed by Section 106 of the NHPA, NRHP-eligible sites are generally avoided or mitigated if avoidance is not possible for projects with a Federal or state nexus. Projects/development disturbances conducted prior to 1966 (i.e., prior to NHPA) and/or those without a Federal or state nexus generally did not identify/quantify cultural resource sites or impacts to them.

Sites that have been determined to be ineligible for the NRHP did not require avoidance, have been discharged from management, and therefore have likely been impacted by the activities requiring the cultural resource inventory (i.e., development, utility installation, fence projects, road construction, etc.).

Impacts to cultural and historic resources would occur during construction if NRHP-eligible resources are disturbed or destroyed as a result of excavation and/or removal. Further ongoing impacts could occur as a result of visual impacts. Increased access to remote areas as a result of Project construction could result in increased vandalism of cultural resources.

Current and future development would contribute to cumulative cultural resources adverse effects in the region.

3.12.4.4 Concerns of Indian Tribes

Geographic Scope

The CEA for the analysis of concerns of Indian tribes includes the Proposed Action and Action Alternative segments and a 5-mile-wide buffer surrounding them (1,175,644 acres). This is based on the scale of the Project and the vantage points from which the Proposed Action and Action Alternative segments, and other past, present, and reasonably foreseeable disturbances can be discerned from potential areas of importance to the tribes. Consultation and coordination with several of the tribes suggests that the CEA is both a traditional cultural landscape and there may be TCPs present.

Cumulative Conditions

Various tribes have been consulted and informed of the Project. Tribes have expressed interest and concern about potential effects to the native landscape, the viewshed, trails and elements of Native infrastructure across the desert, cultural resource sites, and TCPs that are within their traditional territories and may have been inhabited or used by their ancestors. Noted concerns include the many transmission lines and renewable energy projects within the viewshed (Appendix 3, Table 3.12-1). Past actions affecting concerns of Indian tribes include vandalism and looting of prehistoric sites, unauthorized excavation of prehistoric sites, recreational use, roadway and infrastructure construction, and urban and rural developments. Current and future development (Appendix 3, Tables 3.12-1 and 3.12-2; Figure 3.12-1, Appendix 7) would contribute to cumulative impacts to concerns of Indian tribes in the region.

3.12.4.5 Land Use

Geographic Scope

The CEA for land use is the Proposed Action and Action Alternative segments and a 2-mile-wide buffer surrounding them, encompassing 711,573 acres.

Cumulative Conditions

Tables 3-1 and 3-2 present land ownership and land uses in the CEA from which land management and disturbances can be inferred. The dominant developed land uses (Table 3-2) in the CEA consist of 73,808 acres of residential lands (10.4 percent of CEA) and 43,977 acres of agricultural land (6.2 percent of CEA). Transmission lines and solar facility development total 13,287 acres (1.9 percent of the CEA).

Past and present developments and disturbances related to land use were presented in Section 3.7. In general, the CEA is characterized by open, desert lands used for grazing, mining, utilities, recreation, and dispersed residential development. In some areas, open desert has been converted to residential, commercial, and industrial uses (e.g., YPG, power plants, electrical substations, mines). Reclamation managed lands include the CAP canal (which itself is managed by the Central Arizona Water Conservation District).

Reasonably foreseeable future development in the region includes additional transmission lines, gas pipelines, roads, and other linear disturbances; large-scale energy development, especially in California; and additional OHV use and other dispersed and concentrated recreational activities. Placement of transmission line alternatives near towns and cities could reduce the number of options for compatible uses on nearby lands. The cumulative analysis will evaluate the Project's contribution to cumulative visual, recreational, residential, and agricultural impacts which could affect local land uses important to local economies.

3.12.4.6 Recreation

Geographic Scope

The CEA for the analysis of recreation is the general CEA that includes the Proposed Action and Action Alternative segments and a 2-mile-wide buffer (711,573 acres).

Cumulative Conditions

Lands with special designations provide opportunities for solitude and primitive, unconfined recreation and protect natural or undeveloped landscapes and resources. Lands within the CEA provide opportunities for dispersed and developed recreation. Dispersed recreation includes camping, hunting, wildlife observation, photography, backpacking, horseback riding, hiking, and backcountry driving. Developed recreation includes parks and OHV trails. Portions of the proposed Arizona Peace Trail are located within the CEA.

Residential and commercial developments have led to surface disturbances and converted native vegetation communities to urban landscaping. Population growth has increased traffic and pressure in recreational areas. The mixture of land use development in the CEA has altered the land, its character, and the viewshed.

Reasonably foreseeable projects in the CEA include roads and other linear disturbances; large-scale energy development, especially in California; and OHV use and other dispersed and concentrated recreational activities.

3.12.4.7 Socioeconomics and Environmental Justice

Geographic Scope

The CEA for socioeconomics and EJ is Maricopa and La Paz Counties in Arizona and Riverside County, California. This is the geographic extent of the cumulative impact analysis because socioeconomic factors such as public services and utilities are provided by local jurisdictions or districts, and the local labor force is expected to come primarily from within these counties. In addition, public services and utilities plans and population and housing demand projections are prepared at the county level. The Environmental Justice CEA includes the three-county area and the Block Groups used for evaluating impacts for this topic area.

Cumulative Conditions

The range of potential cumulative impacts that should be considered in the cumulative socioeconomics and EJ analysis includes effects on local economies and local labor force demand. Future foreseeable projects such as planned solar energy projects and associated utilities in combination with the Project may require construction workers from within the same local labor force if they are constructed concurrently with the Project. The development of these projects in combination with the construction of the Project could result in an impact to the local housing market if construction workers were to relocate into the area.

Past development and population growth within the CEA have impacted employment, public services, utilities, and housing demands. Population increases have increased development in Riverside County and Maricopa County (mainly in incorporated areas), expanded the demand for housing, and increased the available workforce. Additional development both increases pressure on existing public services and utility systems and provides additional infrastructure to increase capacity and change employment opportunities.

The Project in conjunction with reasonably foreseeable energy, utility, and other infrastructure projects could support population increases in the area for the foreseeable future. The CEA has a rural character and local communities rely on that character to draw visitors that support their local economy.

As expressed by the CRIT, they have a deep connection to the landscape, natural and cultural resources, and wildlife. Continued development could result in impacts to the cultural landscape and linkage.

3.12.4.8 Visual Resources

Geographic Scope

The CEA for the analysis of visual resources includes the Proposed Action and Action Alternative segments and a 5-mile-wide buffer surrounding them. This is based on the scale of the Project and the diminution of the apparent size of objects at greater distances. In general, taller structures can be viewed from greater distances.

Cumulative Conditions

Cumulative effects to visual resources occur where built facilities or activities occupy the same field of view as other built facilities or impacted landscapes, and an adverse change in the visible landscape character is perceived. These are often categorized as local viewshed effects. A cumulative effect could also occur if a viewer perceives that the general visual quality or landscape character of a localized or regional area (I-10 corridor) is diminished by the proliferation of visible similar structures or construction effects, even if the changes are not within the same field of view as existing (or future) structures or facilities. The result is a perceived "industrialization" or "urbanization" of the existing rural or undeveloped landscape character. These are often categorized as regional viewshed effects.

The types of past and present disturbances that have affected visual resources in the CEA include large scale energy development, transmission lines and other utility corridors, road construction, agricultural activities, residential development, and mining activity (Table 3-2). Specific projects and disturbances that have affected visual resources are described in Table 3.12-1 in Appendix 3. Specifically, in the western portion of the CEA, there are 7 existing solar facilities, along with their associated gen-tie lines; 6 transmission lines, and 1 combined cycle power plant that visually contribute to a sense of industrialization, particularly in the vicinity of the Colorado River Substation.

Reasonably foreseeable future disturbances that may affect visual resources in the CEA include additional large scale solar facilities, a power plant, and mining activity (Table 3.12-2 in Appendix 3). Specifically, in the western portion of the CEA, an additional 3 solar facilities, along with their associated gen-tie lines are proposed; and an additional combined cycle power plant.

Chapter 4 Environmental Consequences

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Section 4.1 provides an introduction to the chapter and the definitions for terms used to describe environmental effects.

Section 4.2 presents the non-key resource impact summaries for resources that are not key to distinguishing between alternatives or the decision-making process.

Sections 4.3 through 4.11 discuss the environmental consequences for each key resource, including direct, indirect, and cumulative effects. Residual, unavoidable adverse effects, irreversible and irretrievable impacts, relationship of short-term use versus long-term productivity, and MMs are also presented. Additional resource data analysis is provided in the TES, available on the BLM's ePlanning website.

4.1.1 Impact Assessment

The No Action Alternative forms the baseline against which the potential impacts of the Proposed Action and Action Alternatives on the human environment are compared., Under all alternatives, including the No Action Alternative, changes to the current baseline of the human environment by ongoing natural and anthropogenic processes would occur.

Many concepts and terms used when discussing impacts assessment may not be familiar to the average reader. The following sections clarify some of these concepts.

4.1.2 Environmental Effect Categories

The following environmental effect categories (Table 4-1) are presented to define relative levels of effect intensity and context and to provide a common language when describing effects. Duration of Project disturbance is generally described as short-term (during construction) and long-term (life of Project, projected to be about 50 years). The magnitude of a Project impact can be negligible, minor, moderate, or major (Table 4-1). However, specific durations and magnitudes appropriate to individual resources are defined in the following resource sections where it differs from Table 4-1.

Table 4-1 Summary of Terms Used to Describe Environmental Effects in the EIS

ATTRIBUTE OF EFFECT		DESCRIPTION
Magnitude (Intensity)	No impact	There would be no change to the current condition of resource as a result of Project construction, operation, maintenance, or decommissioning.
	Negligible	No measurable change in current conditions.
	Minor	A small, but measurable change in current conditions.
	Moderate	An easily discernible and measurable change in current conditions.
	Major	A large, easily measurable change in current conditions. A significant impact.
Duration	Short-term	During construction (1.5 – 2 years), up to 10 years.
	Long-term	More than 10 years.

4.1.3 APMs, BMPs, and CMAs

Appendix 2A contains APMs and BMPs that have been identified and described for the Project. The CDCA Plan of 1980 as amended contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (Appendix 2C). Those CMA measures that were determined to be applicable to the Project are included in the Project APMs/BMPs (Appendix 2A) and are cross-referenced to the CMA checklist in Appendix 2C. Certain APM/BMPs may be called out specifically in the resource sections, however, for a complete list of applicable APM/BMPs see Appendix 2A. CMAs required for CDCA Plan compliance are identified within each resource section.

4.1.4 Avoidance, Minimization, and Mitigation of Impacts

The impact analysis in this EIS assumes avoidance of impacts to sensitive resources where possible and implementation of all APMs and BMPs (Appendix 2A) as part of the applicant's Project description. Where impacts are identified that are not precluded or adequately minimized by these APMs or BMPs (derived from RMPs), additional Mitigation Measures (MMs) are identified and analyzed as being implemented. The MMs presented in this EIS are identified in the mitigation monitoring, compliance, and reporting tables at the end of each resource analysis. If residual effects remain after the mitigation is applied, those effects are described as well. Mitigation measures are a means to address environmental impacts that are applied in the impact analysis to reduce intensity or eliminate the impacts.

Any compensatory mitigation identified in the EIS is either a requirement of the existing land use plan (CDCA Plan, as amended) or in order to comply with state or Federal law.

For cultural resources and concerns of Indian tribes, mitigation would be part of the suite of approaches used to address or resolve adverse effects in accordance with the provisions of the PA (Appendix 2D). Avoidance of cultural resource sites, followed by minimizing impacts, is the preferred method to address potential impacts to cultural resources and Indian concerns, followed by other types of mitigation or data recovery.

4.1.5 Organization of Analysis

Segments are the building blocks of the full route alternatives; therefore, analysis of segments is foundational to analysis of the full route alternatives. First, impacts common to all Action Alternative segments are disclosed. Then impacts are analyzed by segment. Then each full-route alternative is analyzed with differences in impacts, if any, by subalternative following full-route discussions.

Chapter 4 includes a discussion of direct and indirect effects specific to Project segments to identify distinguishing characteristics associated with specific segments. If a specific segment is not identified, it should be assumed that the general impacts described in Direct and Indirect Effects Common to All Action Alternatives for each resource would occur.

Brief summaries of impact analysis for "non-key" resources follow in the section below (Section 4.2). Additional information, including comparison of impacts to the No Action Alternative for "non-key" resources can be found in the TES. More detailed impact analyses of "key" resources are provided in the sections that follow (Sections 4.3 through 4.11).

4.2 NON-KEY RESOURCES

Decommissioning activities would have generally the same impacts to non-key resources as described for construction, unless otherwise noted.

4.2.1 Air Quality and Climate Change

All the Action Alternatives would result in emissions of criteria pollutants, hazardous air pollutants (HAPs), and GHGs, but operational and maintenance emissions and impacts would be much lower than construction and decommissioning phase emissions (Appendix 4, Tables 4.2-1 through 4.2-3). Fugitive dust, engine exhaust, concrete batch plant emissions, and sulfur hexafluoride (SF_6) emissions from gas-insulated circuit breakers in the switchyards would be the sources of air quality impacts. The emissions of criteria air pollutants would not exceed the conformity emissions thresholds for the Phoenix Nonattainment/maintenance Area and the criteria pollutant emissions would not exceed the daily and annual Mojave Desert Air Quality Management District (MDAQMD) significance thresholds for the Riverside corridor. CO, $PM_{2.5}$, SO_2, and volatile organic compounds (VOCs) would not exceed the Arizona Department of Environmental Quality (ADEQ) Permitting Exemption thresholds, indicating that those emissions would not exceed the NAAQS. NO_x and PM_{10} emissions would exceed the ADEQ Permitting Exemption Thresholds, but they would not exceed the applicable ambient air quality standards.

There would not be an adverse impact on climate change because: construction GHG emissions would be less than the 25,000 metric tons (MT) CO2e reporting thresholds and would be short-term; operational emissions would be long-term, but substantially below the reporting thresholds.

Because under any Action Alternative, air quality and climate change impacts would be negligible and similar, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMAs LUPA-AIR-1 through LUPA-AIR-3, LUPA-AIR-5, LUPA-BIO-6, and LUPA-BIO-13 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-AQ-01 and APM-AQ-02 and BMP-AQ-01, BMP-AQ-02, and BMP-AQ-05 (Appendix 2A, Section 2A.1). Further, the Project would not be a major stationary source of air quality or visibility deterioration (LUPA-AIR-1) (Appendix 2C).

4.2.2 Geology and Minerals

Because Project activities would have no means of influencing seismicity, the frequency and magnitude of earthquakes would not be directly or indirectly impacted from construction of any Action Alternative. Further, Project engineering would consider seismic hazards in design; therefore, potential impacts to the Project operations from earthquakes would be negligible and long-term. Because the Project would be designed to avoid steep slopes where possible and engineered solutions to mitigate for the potential for landslide/mass wasting events would be identified in geotechnical studies, the potential for landslides would not likely be changed by construction. Direct or indirect effects to the potential for landslides would not be anticipated, so impacts related to landslides would be short-term and negligible. Liquefaction potential would also be determined by geotechnical studies and would be considered in engineering and design. Even where risk is potentially high west of the Colorado River, potential impacts to the Project from liquefaction would be negligible and long-term.

Construction would cause no direct or indirect impacts to operating mines and mining districts. Transmission lines typically have little impact to mining operations since span lengths are such that access to minerals typically can be accomplished between spans. The Project ROW would be on the surface only. It would not affect any claims or entries unless the presence of the line limited access to develop the claim or occurrence during construction. Operation and maintenance of the Project would not directly impact active mines or mining districts. The location of a valid mining claim gives a mining claimant possessory rights to the lands superior to any subsequent appropriations.

This resource is not considered key to distinguishing between the Action Alternatives or decision-making because the resource would be considered in Project engineering.

There are no CMAs related to geology and minerals that would apply to the Project.

4.2.3 Paleontological Resources

Ground disturbance during construction is expected with all Action Alternatives and may result in the damage or loss of paleontological resources; however, the number and types of resources affected would vary depending on the individual alternative. Although the potential for fossils to be present (PFYC) has been identified across the study area (HDR 2017b); specific impacts are unknown until identification studies of the selected route are completed. As a result, specific direct or indirect impacts to particular paleontological resources is not known. Direct effects common to all Action Alternatives include possible damage to paleontological resources and possible loss of associated data due to construction activities. The scientific information provided by fossils is maximized by discovery of fossil specimens preserved in place within the host geologic formations. Construction disturbance activities could result in the discovery of fossil specimens. While some fossils may be damaged during construction, they may otherwise remain undiscovered. Construction could have direct negative (i.e., damage) and positive (i.e., discovery) effects on paleontological resources. Impacts to paleontological resources would be negligible to minor and long-term due to the limited extent of project ground disturbance and project micrositing to avoid identified resources. No direct effects to paleontological resources due to operations, maintenance, or decommissioning would be anticipated.

Once a route is selected, assessment and mitigation of adverse effects to paleontological resources would be conducted according to the Project's Paleontological Resource Monitoring and Discovery Plan and Treatment Plan (Appendix 2B, Section 2B.13), which would comply with the Paleontological Resources Preservation Act (P.L. 111-11, Title VI, Subtitle D).

Paleontological surveys would be conducted to identify fossil locations in areas of high or unknown sensitivity, micrositing would be done to avoid fossil locations by the Project, and monitoring would be conducted during construction activities. Because under any Action Alternative, impacts would be similar, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMAs LUPA-PALEO-1 and LUPA-PALEO-2 would apply to the Project (Appendix 2C) and would be satisfied by PFYC Figure 3.2-1 provided in Appendix 7 and compliance with applicable Federal laws, regulations, policies, and plans, respectively. LUPA-PALEO-3 and LUPA-PALEO-4 would also apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-PALEO-01 and BMP-PALEO-02 (Appendix 2A, Section 2A.3).

4.2.4 Grazing and Rangeland

Construction activities could have minor, short-term effects on livestock and WHB access to grazing, water sources, and seasonal movement of herds by causing temporary fragmentation of grazing allotments, ASLD lease lands, or the HMA. Construction activities involving helicopters could displace livestock and WHB grazing in the area. In addition, disturbance within grazing allotments would cause a negligible reduction of the forage available in the allotment until revegetation is successful on disturbance sites. Degradation of forage by noxious weed encroachment during construction would be prevented by implementation of the Noxious Weed Management Plan (Appendix 2B, Section 2B.11). MM-GR-01 (Appendix 2, Section 2.4) would provide alternate livestock water sources during construction which would reduce impacts to negligible.

During Project operations, rangeland and pasture replaced by support structures, the SCS, or access roads would not be available for grazing. Maintenance activities would be unlikely to affect grazing and rangelands. Once successful final reclamation is complete, areas would be restored to the prior range condition.

Because under any Action Alternative, APMs and BMPs would require disturbance to be reclaimed and revegetated, and range improvements maintained, thereby minimizing impacts under any of the Action Alternatives, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

There are no CMAs related to grazing and rangeland that would apply to the Project.

4.2.5 Special Designations, Management Allocations, and Wilderness Resources

Potential direct effects from construction activities on special designations, management allocations, and wilderness resources would include direct ground disturbance. Increases in ambient noise levels, the presence of equipment, and dust would be short-term indirect effects in areas adjacent to special designations, management allocations, and wilderness resources and would decrease with the completion of construction activities. Access to special designations, management allocations, and wilderness resources may be temporarily rerouted during construction, which would be a short-term indirect effect. Effects to special designations, management allocations, and wilderness resources during construction would be minor since the activities would be temporary in nature. The Project's control measures, APMs, and BMPs would minimize the potential for these effects; therefore, construction related impacts would be negligible.

Potential long-term effects to special designations, management allocations, and wilderness resources due to operations, maintenance, and decommissioning could occur where Project facilities would be sited near or within WAs, WHMAs, or lands with wilderness characteristics.

4.2.5.1 Wilderness Areas

There would be no direct effects on WAs, as the Project would not be within WA boundaries. Some alternatives would have indirect effects on BLM- and USFWS-managed WAs due to noise, dust, and the proposed presence of heavy equipment during construction.

4.2.5.2 Wildlife Habitat Management Areas

Direct effects to the designation of WHMAs would be unlikely because the designation of the WHMAs would not be changed by the presence of the Project. Indirect effects could occur due to potential changes in the character of the surrounding lands (e.g., visual changes, increase use due to access roads) but are considered to be negligible to minor. Effects to wildlife habitat within WHMAs are discussed in Section 4.4.4.

4.2.5.3 Lands with Wilderness Characteristics

Under Alternatives 3 and 4, there would be a direct, long-term, major effect on the wilderness characteristics of Polygon 23, because new roads and/or transmission facilities associated with segments under these alternatives would fracture the acreage of Polygon 23 to below the 5,000-acre lands with wilderness characteristics requirement, and Polygon 23 is not adjacent to a WA. Therefore, Polygon 23 would no longer meet the criteria for lands with wilderness characteristics under Alternatives 3 and 4. This area is not included in the Proposed Action, Alternative 2, or Agency Preferred Alternative; therefore, this direct effect to lands with wilderness characteristics would not occur under those alternatives. Under the Preferred Alternative, lands with wilderness characteristics Polygon 23 would be reduced by 9 acres; however, this acreage loss would not otherwise affect the wilderness characteristics of Polygon 23.

4.2.5.4 Development Focus Areas

There would not be effects to DFAs under any of the alternatives. All of the alternatives would be located within a DFA and are an appropriate development within this allocation.

4.2.5.5 Summary

Under any Action Alternative, APMs and BMPs would require disturbance to be reclaimed and revegetated, thereby minimizing impacts to WAs and WHMAs. While lands with wilderness characteristics polygons could be eliminated, the analysis assumed that lands with wilderness characteristics in the study area would remain as “not managed for wilderness characteristics, and this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMAs DFA-REC-1, DFA-REC-2, DFA, REC-4, DFA-REC-5, DFA-REC-7 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through BMP-REC-01 (Appendix 2A, Section 2A.7).

4.2.6 Noise

Under any of the Action Alternatives, direct and indirect impacts from construction noise would be negligible to minor for the following reasons: construction impacts would be of limited duration (short-term); construction activity needs to comply with local noise ordinances; expected noise levels near noise sensitive receptors are expected to be similar to existing levels of noise; and construction of the transmission line would primarily be limited to daytime hours so it is unlikely that construction equipment noise levels would cause sleep disruption for residents at the identified noise sensitive receptors. Further, in general there are few residents along the Project route and construction activities at any given location would be brief.

During operations, corona noise could occur throughout the length of the Project. The Project location is generally considered to have fair weather during most of the year; however, foul weather, or rain conditions, occurs periodically and seasonally and this is when coronal noise could manifest. Predicted Project noise levels are in line with existing levels of ambient noise at the noise-sensitive receptors and the modeled results suggest some minor variation in audible

noise with no significant impact expected. Noise impacts during operations would be long-term but negligible.

Maintenance activities associated with the Project would be anticipated to occur less frequently, include fewer individual noise point sources, and would be of shorter duration.

Because under any Action Alternative construction would be short-term and required to comply with local noise ordinances, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMA LUPA-BIO-12 would apply to the Project (Appendix 2C). The Project would comply with this CMA through APM-NO-01 and BMP-NO-07 (Appendix 2A, Section 2A.8).

4.2.7 Hazards and Hazardous Materials

For all Action Alternatives, the implementation of the Project would result in the use of regulated and hazardous materials and creation of solid waste during construction. The specific chemicals and materials, and their quantities, have not yet been determined. A “hazardous material,” as defined by the EPA, is any physical, biological, or chemical item, which has the potential to cause harm to living organisms or the environment. Examples of regulated or hazardous materials associated with construction, operations, maintenance, and/or decommissioning activities could include solvents, petroleum products (i.e., fuels, lubricants, oils, degreaser, etc.), paint, wood-treated products, detergents, sanitary waste, and other products typically associated with construction sites. Hazardous materials may also include pesticides (i.e., insecticides, fungicides, herbicides, rodenticides, etc.) and wash water associated with these products. Solid wastes may include paper, wood, metal, and general trash. With adherence to laws, ordinances, and regulations, as well as implementation of the APMs and BMPs described in Appendix 2A (Section 2A.9), there would be negligible impacts from construction-related hazardous materials. Use of rodenticides is prohibited in the CDCA Plan area where Focus and BLM Sensitive Species (including Mojave desert tortoise, Mojave fringe-toed lizard, and desert kit fox) are known or suspected to occur (BLM 2016a).

The Project would not impair or impede implementation of, or physically interfere with, an existing or adopted emergency hazardous materials spill response plan or emergency evacuation plan. Structures would not be located in roadways or block transportation routes. Therefore, no impacts to adopted emergency hazardous materials spill response plans or emergency evacuation plans are anticipated.

APMs and BMPs for the Project (Appendix 2A, Section 2A.9) include APM-HAZ-01, the implementation of the BLM’s Hazardous Substance and Emergency Response Procedures on BLM lands. These procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through decommissioning. APM-HAZ-01 is believed to be adequate to address all potential concerns currently identified, including hydrocarbons, agricultural chemicals, and natural gas facilities. APM-HAZ-02, Fire Avoidance and Suppression, ensures that workers would minimize the risk of igniting wildfires through their actions.

Once an Action Alternative is selected, micrositing would be done to avoid any existing hazards and hazardous materials by the Project, thereby reducing impacts to negligible. Because under any Action Alternative, hazards and hazardous materials impacts would be negligible and similar, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMAs LUPA-BIO-9, LUPA-SW-6, LUPA-SW-7, and DFA-VPL-BIO-FIRE-1 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-HAZ-01 and APM-HAZ-02, and BMP-HAZ-03 (Appendix 2A, Section 2A.9).

4.2.8 Public Health and Safety

For any of the Action Alternatives, the Project's worker environmental awareness program would be used to communicate environmental issues and appropriate work practices specific to this Project. This awareness would include proper implementation of BMPs as described in Appendix 2A (Section 2A.10). The training would emphasize site-specific physical conditions to improve hazard prevention and would include a review of all site-specific BMPs, the Health and Safety Plan (to be completed before NTP would be issued), and the Hazardous Substance Control and Emergency Response Plan (to be completed before NTP would be issued). Considering that construction impacts would be short-term, direct and indirect impacts to public health and safety in general during construction are expected to be negligible to minor.

During construction, operation, maintenance, and/or decommissioning, activities such as refueling, welding, or blasting, and sparks from vehicles and other equipment could cause fires. Fuel and ignition sources would be addressed through vegetation management, fire prevention practices, planning, and education provided in the construction safety program and as standard safety practices. The implementation of APMs and BMPs (Appendix 2A, Section 2A.9), such as APM-HAZ-02, Fire Avoidance and Suppression, ensures that workers would minimize the risk of igniting wildfires through their actions. A Fire Protection Plan would be prepared for the Project (Appendix 2B, Section 2B.14). Considering that construction impacts would be short-term, direct and indirect impacts to public health and safety from fire during construction are expected to be negligible to minor.

Public health issues associated with operating a transmission would also include the potential to be exposed to EMF and corona noise. EMF levels were modeled (Appendix 4, Tables 4.2-4 and 4.2-5) and would be at levels comparable to typical magnetic fields associated with common household appliances with EMF levels decreasing rapidly at increasing distance from the Project. Direct and indirect impacts to public health and safety due to EMF are expected to be long-term negligible to minor.

Radio and television interference from a transmission line are based on the electrical and physical characteristics of the transmission line. Therefore, potential interference is considered in the design of higher voltage lines (345kV and above). Radio noise from the Project would not occur until the transmission lines are actually energized. The level of interference would decrease with distance from the transmission line. The Project would operate under Federal Communications Commission (FCC) regulations (FCC 1988: Vol II, part 15. 47CFR, Ch.1), which require that best engineering principles be used to guard against harmful interference to authorized radio users. In the event that interference occurs, the regulations require that the

source be discontinued or adjusted to remedy the interference. Therefore, regulations require that the Project would minimize radio interference to a negligible level.

Structures with guy wires could pose safety risks in recreation areas (Section 4.8); mitigation measures would require different structure types in these areas. During operations, direct and indirect impacts to public health and safety due to guy wires are expected to be negligible to minor.

It is not possible to predict with certainty whether the transmission line, SCS, and ancillary facilities would be the target of an intentional act of destruction and what type of intentional act of destruction would occur. Whereas individual acts of vandalism and theft (i.e., metal theft from a substation) could most likely cause a localized temporary impact to the applicant, acts of sabotage and terrorism could most likely cause a larger and longer-term impact to the general public. An intentional act of destruction from sabotage or terrorism on the electrical infrastructure of all action alternatives would have the same direct and indirect impacts on public health and safety. In general, the electricity infrastructure proposed by all of the action alternatives could potentially be targets of an act of sabotage or terrorism. However, the addition of transmission lines and associated facilities generally strengthens the reliability of delivering electricity to the general public, because if one line is affected by an intentional act of destruction or any other disruption, other lines would be available to continue the delivery of electricity. The potential impacts from the unlikely event of an act of terrorism or sabotage from any of the Action Alternatives would be considered minor and long-term.

Workers, residents, or visitors to an area under construction have the potential to contract valley fever from exposure to disturbed soils that may contain the fungus *coccidioides* sp. fungus. Soil disturbance for structure construction, road building, and various work and staging areas would locally increase valley fever risk. APM-AQ-01, BMP-AQ-01, and APM-AQ-04 (Appendix 2A, Section 2A.1) would minimize the risk of exposure to valley fever for workers and the public as a result of Project construction to a minor, short-term effect.

Because under any Action Alternative, a Health and Safety Plan, Fire Protection Plan, Environmental Health and Safety Plan, Emergency Preparedness and Response Plan, and many others would be implemented (to be completed before NTP would be issued or provided in Appendix 2B), this resource is not considered key to distinguishing between the Action Alternatives nor decision-making.

CMAs DFA-VPL-BIO-FIRE-1 and DFA-VPL-BIO-DUNE-1 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-HAZ-02 and BMP-PHS-02 (Appendix 2A, Sections 2A.9 and 2A.10).

4.2.9 Traffic and Transportation

Direct effects common to all Action Alternatives during the construction phase would consist of construction-related traffic including include large trucks and potentially oversized loads. Increased traffic would occur on all types of roads in the Project Area, but would be phased, occurring at different locations at different times. An estimated total of 160 additional personal vehicles would be added to the roadway network before and after each shift under a maximum-case trip scenario. The intensity of traffic impact from construction in the Quartzsite area in

particular would depend on the unique influx of visitors each winter; this minor to moderate effect would be site-specific and short-term. Construction would not cause severe road damage because construction would be short-term, and roads used for construction would either already be at the appropriate design level for the construction traffic, or roads would be modified to the appropriate design level. In areas where the Project would cross roadways, Federal, state, or county encroachment permits would be obtained, as applicable. Short-term traffic delays during construction could occur at locations where the transmission line crosses roads or where improvements might be needed at local roads, intersections, and bridges to accommodate overweight or oversize delivery vehicles. After construction of the Project, traffic generated by operation and maintenance activities would be intermittent, only require a small number of vehicles, and deliveries would not generally occur. Construction using helicopters could cause a hazard if AGFD was concurrently conducting aerial wildlife surveys in Copper Bottom Pass; however, BMP-TT-10 (Appendix 2A, Section 2A.11) would require DCRT to coordinate with AGFD in such case to avoid this hazard. Operation and maintenance traffic would not increase traffic on primary roads, and, subsequently, would not decrease the level of service for any primary roads.

Operation of the Project may represent a collision hazard to pilots accessing private aviation facilities, such as the Cyr Aviation Airport for structures within 0.5-mile of the facility. This would be a moderate to major, long-term impact on such private aviation facilities, no impacts are expected to the Blythe Airport. This would be a moderate to major, long-term impact on such private aviation facilities. Marking of structures and lines at these locations would reduce the impact to minor to moderate (Appendix 2, Section 2.4, MM-TT-01). Additionally, structures and lines within Segments in-01 and i-04 where they pass through the Plomosa Mountains and Segments i-06, cb-01, cb-02, cb-03, and cb-04 in the Dome Rock Mountains would constitute a moderate to major, long-term effect on the safety of AGFD aircraft conducting aerial wildlife surveys. The marking of structures and lines in these locations would reduce this effect to minor to moderate (Appendix 2, Section 2.4, MM-TT-02).

Because under any Action Alternative, additional mitigation would be required to further reduce operational impacts to a private airport or aviation safety related to aerial surveys, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMAs LUPA-BIO-13 and DFA-VPL-BIO-DUNE-1 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through BMP-TT-04, BMP-TT-05, BMP-TT-06, BMP-TT-07, and BMP-TT-08 (Appendix 2A, Section 2A.11).

4.2.10 Water Resources

Construction activities could have effects to surface water quality due to inadvertent releases of petroleum products or other hazardous materials or due to sediment loading from ground disturbances. During both construction and operations, the functions of ephemeral channels (e.g., providing adequate capacity for flood control, energy dissipation, and sediment movement) could be affected. The Project's control measures, APMs, and BMPs would minimize the potential for these effects, and therefore impacts would be negligible. Impacts to the Colorado River and its adjacent wetlands and floodplain, common to all alternatives, would also be minimized by control measures, APMs, and BMPs. There are groundwater wells along all of the

Action Alternatives; however, it is assumed that they could be avoided or would be replaced with no impact. Shallow groundwater may be found near the Colorado River and encountered during structure placement. Flexibility with structure placement would eliminate or reduce impacts to water resources. Water sources for the Project would be widely distributed along the project alignment, over a 2-year construction period. Such a wide distribution of sources, including private wells and/or municipal supplies, and over a long period of time, would minimize the potential for overdraft of any individual water supply. Proper implementation of design features, APMs, and BMPs (Appendix 2A, Section 2A.13) would protect groundwater quantity and quality; therefore impacts, if any, would be short-term and negligible.

Because under any Action Alternative, APMs and BMPs would require disturbance to be reclaimed and revegetated, and other permits such as Section 404 and storm water permits would be required that would protect water resources including water quality, this resource is not considered key to distinguishing between the Action Alternatives or decision-making.

CMAs LUPA-BIO-9, LUPA-BIO-13, LUPA-BIO-14, LUPA-SW-16, LUPA-SW-18, LUPA-SW-21, LUPA-SW-22, LUPA-BIO-DUNE-2, and LUPA-BIO-DUNE-3 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-WQ-01 and BMP-WQ-04, BMP-WQ-05, BMP-WQ-06, and BMP-WQ-07 (Appendix 2A, Section 2A.13). Requirements for floodplain management and protection of wetlands would be met. Compliance with LUPA-SW-20 is demonstrated by the fact that no residual impacts are identified.

4.3 SOIL RESOURCES

4.3.1 Introduction

Impacts to soil resources are discussed in terms of acreage impacted and percent of disturbance.

4.3.2 Methods for Analysis

4.3.2.1 Analysis Area

The analysis area for soils resources is the 200-foot ROW for all of the Action Alternatives plus ancillary Project components resulting in new surface disturbance located outside the ROW.

4.3.2.2 Assumptions

Use of the NRCS STATSGO data (NRCS 2009), and SSURGO data where available, assumes mapped soil conditions are representative of actual conditions in the field (Appendix 3, Section 3.3). As with any mapped data, there is a certain amount of uncertainty related to the accuracy and scale of mapping; therefore, the actual soil conditions could vary substantially from those described at any particular location. The data used represent the best available information for evaluating soil resources. The inherent limitations of soil survey data are resolved with site-specific soil investigations within the actual Project footprint that are part of the permitting and construction design process.

4.3.2.3 Environmental Effect Indicators, Magnitude, and Duration

The following impact indicators were considered when analyzing potential impacts to soil resources:

- loss of topsoil due to construction, operation, maintenance, and decommissioning activities (i.e., removal or mixing of topsoil);
- loss of soil productivity;
- soil compaction from vehicular traffic;
- soil erosion due to water and wind; and,
- loss of active sand dune habitat.

In order to determine impacts to soil resources from wind erosion, the Wind Erodibility Group index (WEG) was analyzed using the STATSGO database (Appendix 3, Table 3.3-1) and the SSURGO database. The WEG index groups soils that have similar properties affecting their resistance to wind erosion. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Under any of the Action Alternatives, there would be negligible to minor short- and long-term effects to soils. There would be long-term loss of soil productivity on acres not reclaimed during the life of the Project. Other soils disturbed but reclaimed after construction or as part of decommissioning would likely have long-term loss of soil productivity that would improve over time because of reclamation efforts. Impacts to areas of wind-blown sand would range from no impacts if avoided to long-term negligible to minor impacts to dune habitat because of the intermittent nature of the structure foundations, and the spacing between structures.

4.3.3 No Action Alternative

Under the No Action Alternative, there would no direct or indirect impacts to soil resources from the Project.

4.3.4 Construction of Action Alternative Segments

4.3.4.1 Direct and Indirect Effects Common to All Action Alternatives

At the batch plant and lay-down sites, topsoil would be stockpiled and covered during construction and reapplied during reclamation in order to minimize topsoil loss (Appendix 2A, Section 2A.2). Direct impacts to soil resources as a result of construction activities include the loss of soil productivity due to the removal of soils during new surface disturbance. Limited clearing of vegetation and topsoil, as well as grading, would be required and these activities could result in newly exposed, disturbed soils that could be subject to accelerated erosion by wind and water. Any soil removal associated with development of structure foundations and at the SCS would be permanent and would be a loss of soil productivity. One of the primary impacts of concern for construction is disturbance to soil biological crusts. It is expected that soils within the ROW have the ability to support soil biotic crust; therefore, it is expected that disturbance caused by excavation and compaction during construction may directly affect biological soil crusts. Clearing of the SCS site, ancillary facilities, and access roads could also

adversely affect any soil biological crusts in the immediate vicinity. As described in Chapter 2, large portions of the Project have been routed to parallel existing linear infrastructure, thus reducing impacts to previously undisturbed soils.

Indirect impacts associated with topsoil removal may include invasive plant colonization, soil erosion, and reduction of soil water retention. Construction activities may also cause disturbance to fragile biological crusts, which could increase wind and water erosion and delay reestablishment of plant communities post construction. Other indirect effects are associated with the sediment redistribution of the soil resource as a result of wind and water erosion, which could cause damages to WOUS, prime farmlands, and air quality. Implementation of BMPs, APMs, reclamation, and other conservative measures would minimize loss of topsoil and soil productivity to minor but long-term due to the slow recovery of soils in desert environments.

Physical Changes to Soil Resources

Surface disturbance, including the removal of topsoil resources for replacement during reclamation, would result in direct impacts. Physical and chemical changes to the soil would be expected to be long-term and minor and would occur as a result of topsoil salvage and reclamation operations. Topsoil that is used to reclaim disturbed areas immediately after construction activities would begin to revert to more natural conditions.

Direct physical impacts to soil resources include compaction and crushing of the topsoil by equipment during salvage, stockpiling, construction, and reclamation activities. Potential physical effects of soil compaction may include reduced permeability and porosity, damage to microbiotic crusts, increased bulk density, decreased available water holding capacity, and increased erosion potential. With adherence to APMs and BMPs (notably BIO-38 and SOIL-02 [Appendix 2A, Sections 2A.4 and 2A.2), physical effects of soil compaction would be short-term, minor to moderate. Soil microorganisms such as bacteria and fungi, important in the decomposition of biological materials and the formation and improvement of soil, would be impacted. Natural processes, such as wind and water transport of soil particles from surrounding areas would continually inoculate the site with these microorganisms.

Soil Loss/Erosion

Soil erosion potential is determined based on physical soil characteristics, k-factor rating, and slope. Areas located on steep slopes are inherently susceptible to erosion. The majority of reclaimed areas for all Action Alternatives would incorporate a generally flat to gently sloped surface during regrading and reclamation activities. Potential for erosion would be increased on disturbed areas after soil salvage operations due to removal of the vegetative cover and the loss of surface soil structure. Soil erosion after redistribution on re-graded sites would also have a greater potential until the soil is stabilized by successful revegetation. Soil characteristics identified in Section 3.3.2.2 and Appendix 3 Table 3.3-1 suggest that all segments west of the Colorado River include soils that have a high susceptibility for wind erosion. Windblown dust would result from the disturbance of fine-textured soils during construction and reclamation activities through the completion of the Project.

The majority of the impacts to soil resources would be short-term, until reclamation was complete. The footprints of the structures, the SCS site, and new access roads would result in

long-term impacts to soil resources. Cutting and removal of vegetation may occur; however, where practicable, downed vegetation and undisturbed low vegetation would be left in place within the disturbance areas to serve as soil protection and erosion control. Vegetation would only be cleared to the extent necessary, minimizing impacts to soil resources. Adherence to APM-GEO-01 and APM-WQ-01 (Appendix 2A, Sections 2A.2 and 2A.13) would minimize water erosion through implementation of a SWPPP. Further, Project engineering would consider soil characteristics and hazard in design. Impacts from soil loss/erosion would be negligible to minor and short- to long-term as areas revegetate.

4.3.4.2 Direct and Indirect Segment-specific Effects

The following sections identify distinguishing characteristics associated with specific segments. If a specific segment is not identified, it should be assumed that the general impacts described in Section 4.3.4.1 would occur.

Perhaps the most sensitive issue for soils occurs on BLM administered lands west of Blythe and north of the Colorado Substation, due to the sand dunes' value as habitat for sensitive species (Section 3.4.2.1). Objects as low as 30 cm above the ground surface can interfere with sand transport, creating a "sand shadow" and reducing the size of downwind dunes (PWA 2011). The Colorado Substation was initially proposed to be constructed in the center of the sand dunes, but ultimately was constructed at its current site south of the dunes specifically to avoid impacting sand transport.

Segments p-17 and p-18 or ca-07, ca-09, and x-19 would be used to access the Colorado River Substation from the east. Tangent lattice structures are proposed to be used, regardless of the route taken (Figure 3-2). Because of their open design, tangent lattice structures would allow winds to essentially blow through the structure, minimizing the impact on sand transport (as compared to solid structures, like buildings or walls).

The foundations for the lattice tangent structures along Segments p-17 and p-18 (Figure 3-2) would run south of the active windblown deposits and would disturb 2.6 acres for the long-term. The portions of the foundations that extend above ground level would intermittently interrupt sand transport on the upwind side. Access roads, as required, would be at grade and only minimally impact sand transport on 18.3 acres. These intermittent disruptions of the flow of sand across the surface of the landscape for short distances would have a very localized impact on sand transport in the immediate area of the access roads and structure foundations in the long term. Therefore, because of the distance between these segments and the active windblown deposits to the north, impacts to active windblown deposits would be negligible.

Alternatively, Segments ca-07, ca-09, and x-19 (Figure 3-2) would have a similar foundation footprint for tangent lattice, guyed-v, and dead-end lattice structures of 2.1 acres over a linear distance of 6.6 miles (Appendix 2, Table 2.2-12), portions of which travel through the dunes. Access roads for these segments would impact 26.5 acres. These segments would have a greater impact on active windblown deposits because portions of the segments would cross more active areas of the dunes, but because of the widely spaced nature of the individual foundations and associated roads, that impact would be considered long-term and negligible to minor.

4.3.5 Operations, Maintenance, and Decommissioning

Impacts to soil resources as a result of operation and maintenance activities are expected to be minimal. Minimal soil resource management would be needed during transmission line operation and most inspection activities would be carried out aerially. On-the-ground inspection would cause negligible damage to existing soil resources because vehicle use would be confined to existing roadways. No indirect effects are expected during the operation and maintenance activities.

Decommissioning activities, if and when they occur in the future, would have impacts similar to project construction except where established access roads and other permanent impact areas would be used.

4.3.6 Mitigation Measures

APMs and BMPs that would be implemented as part of the Project would minimize impacts to soil resources. Therefore, there are no MMs identified for soil resources for any of the specific segments and thus, no MMs have been identified for any of the full-route alternatives or subalternatives described below.

4.3.7 Construction of Full Route Alternative and Subalternative Effects

The types of impacts to soils are described above. The magnitude of those impacts varies by the acreage disturbed. Table 4-2 shows the construction (short-term) disturbance and operations (long-term) disturbance associated with each of the Action Alternatives.

Table 4-2 Soil Disturbance by Full Route Alternative in Acres

FULL ROUTE ALTERNATIVE	CONSTRUCTION DISTURBANCE (SHORT -TERM)	OPERATIONS AND MAINTENANCE DISTURBANCE (LONG-TERM)	TOTAL DISTURBANCE
Proposed Action	709.1	410.1	1,086.0
Alternative 1: I-10 Route	648.3	390.3	1,004.9
Alternative 2: BLM Utility Corridor	754.8	462.8	1,181.0
Alternative 3: Avoidance Route	768.1	466.4	1,199.0
Alternative 4: Public Lands Emphasis Route	760.4	468.1	1,197.2
Preferred Alternative	758.0	473.7	1,190.5

* Long-term foundation disturbance would be within and a subset of the short-term disturbance; therefore, it is not additive to the short-term disturbance in totals (Section 2.2.5.3).

4.3.7.1 Proposed Action

Under the Proposed Action, there would be negligible to minor short- and long-term effects to soils, and the effects would differ because of soil types. Approximately 1,086 acres of soils would be disturbed associated with transmission line construction, access roads, temporary use areas, and the SCS. Long-term loss of soil productivity would occur on 410 acres of disturbance that would not be restored during the term of the ROW permit. The remaining 709 acres would likely have long-term loss of soil productivity, but productivity would improve during the term of the ROW permit because of reclamation efforts that would be required. The Proposed Action west of the Colorado River includes soils that have a high susceptibility for wind erosion.

As shown in Figure 3-2, the Proposed Action route south of the Colorado River Substation would avoid active windblown sand areas and habitat. Consequently, as described in Section 4.3.4.2, impacts to areas of active windblown sand would be negligible and long-term.

4.3.7.2 Alternative 1: I-10 Route

Under Alternative 1, there would be negligible to moderate short- and long-term effects to soils and the effects would differ because of soil types. Approximately 1,005 acres of soils would be disturbed associated with transmission line construction, access roads, temporary use areas, and the SCS, a decrease in disturbance compared to the Proposed Action. Long-term loss of soil productivity would occur on 390 acres of disturbance that would not be restored during the term of the ROW permit. The remaining 648 acres would likely have long-term loss of soil productivity, but productivity would improve during the term of the ROW permit because of reclamation efforts that would be required. Alternative 1 west of the Colorado River includes soils that have a high susceptibility for wind erosion.

As shown in Figure 3-2, Alternative 1 approaching the Colorado River Substation from the east would pass through portions of an active area of windblown sand. As described in Section 4.3.4.2, because of the intermittent nature of the structure foundations, and the spacing between structures, this would constitute a long-term, negligible to minor impact to the dune habitat.

Subalternatives to Alternative 1 (1A through 1E)

There would be minimal differences in the amounts of acres of soil disturbed between the Alternative 1 subalternatives (1A through 1E) and Alternative 1 as indicated in Chapter 2.

4.3.7.3 Alternative 2: BLM Utility Corridor Route

Under Alternative 2, there would be negligible to moderate short- and long-term effects to soils and the effects would differ because of soil types. Approximately 1,181 acres of soils would be disturbed associated with transmission line construction, access roads, temporary use areas, and the SCS, an increase in disturbance compared to the Proposed Action and Alternative 1. Long-term loss of soil productivity would occur on 463 acres of disturbance that would not be restored during the term of the ROW permit. The remaining 755acres would likely have long-term loss of soil productivity, but productivity would improve during the term of the ROW permit because of reclamation efforts that would be required. Alternative 2 west of the Colorado River includes soils that have a high susceptibility for wind erosion.

As shown in Figure 3-2, Alternative 2 approaching the Colorado River Substation from the east would pass through portions of an area of active windblown sand. As described in Section 4.3.4.2, because of the intermittent nature of the structure foundations, and the spacing between structures, this would constitute a long-term, negligible to minor impact to the dune habitat.

Subalternatives to Alternative 2 (2A through 2E)

There would be minimal differences in the amounts of acres of soil disturbed between the Alternative 2 subalternatives (2A through 2E) and Alternative 2 as indicated in Chapter 2.

4.3.7.4 Alternative 3: Avoidance Route

Under Alternative 3, there would be negligible to moderate short- and long-term effects to soils and the effects would differ because of soil types. Approximately 1,199 acres of soils would be disturbed associated with transmission line construction, access roads, temporary use areas, and the SCS, an increase in disturbance compared to the Proposed Action and Alternative 1 and similar to Alternative 2. Long-term loss of soil productivity would occur on 466 acres of disturbance that would not be restored during the term of the ROW permit. The remaining 768 acres would likely have long-term loss of soil productivity, but productivity would improve during the term of the ROW permit because of reclamation efforts that would be required. Alternative 3 west of the Colorado River includes soils that have a high susceptibility for wind erosion.

As shown in Figure 3-2, Alternative 3 approaching the Colorado River Substation from the east would pass through portions of an area of active windblown sand. As described in Section 4.3.4.2, because of the intermittent nature of the structure foundations, and the spacing between structures, this would constitute a long-term, negligible to minor impact to the dune habitat.

Subalternatives to Alternative 3 (3A through 3M)

There would be minimal differences in the amounts of acres of soil disturbed between the Alternative 3 subalternatives (3A through 3M) and Alternative 3 as indicated in Chapter 2.

4.3.7.5 Alternative 4: Public Lands Emphasis Route

Under Alternative 4, there would be negligible to moderate short- and long-term effects to soils and the effects would differ because of soil types. Approximately 1,197 acres of soils would be disturbed associated with transmission line construction, access roads, temporary use areas, and the SCS, a decrease in disturbance compared to all alternatives, except for Alternative 1. Long-term loss of soil productivity would occur on 468 acres of disturbance that would not be restored during the term of the ROW permit. The remaining 760 acres would likely have long-term loss of soil productivity, but productivity would improve during the term of the ROW permit because of reclamation efforts that would be required. Alternative 4 west of the Colorado River includes soils that have a high susceptibility for wind erosion.

As shown in Figure 3-2, Alternative 4 approaching the Colorado River Substation from the east would pass through portions of an area of active windblown sand. As described in Section 4.3.4.2, because of the intermittent nature of the structure foundations, and the spacing between structures, this would constitute a long-term, negligible to minor impact to the dune habitat.

Subalternatives to Alternative 4 (4A through 4P)

There would be minimal differences in the amounts of acres of soil disturbed between the Alternative 4 subalternatives (4A through 4P) and Alternative 4 as indicated in Chapter 2. However, Subalternative 4P would utilize the Proposed Action Segments p-17 and p-18, thus avoiding the area of active windblown sand; consequently, Subalternative 4P would have less impact on the areas of windblown sand than Alternative 4 and Subalternatives 4A through 4N.

4.3.7.6 Agency Preferred Alternative

Under the Preferred Alternative, there would be negligible to moderate short- and long-term effects to soils; the effects would differ by soil type. Approximately 1,191 acres of soils would be disturbed associated with transmission line construction, access roads, temporary use areas, and the SCS, which would be more soil disturbance compared to the Proposed Action and Alternative 1. Long-term loss of soil productivity would occur on 473.7 acres of disturbance that would not be restored during the term of the ROW permit. The remaining 758 acres would likely have long-term loss of soil productivity, but productivity would improve during the term of the ROW permit because of reclamation efforts that would be required. The Preferred Alternative west of the Colorado River includes soils that have a high susceptibility for wind erosion

As shown in Figure 3-2, the Preferred Alternative approaching the Colorado River Substation from the east would pass through portions of an area of active windblown sand. As described in Section 4.3.4.2, because of the intermittent nature of the structure foundations, and the spacing between structures, this would constitute a long-term, negligible to minor impact to the dune habitat.

4.3.8 Residual Impacts

The APMs and BMPs described in Appendix 2A (Section 2A.2) would likely alleviate most impacts to the soil resources as a result of the Project, except for impacts to areas of active windblown sand under the Action Alternatives, where impacts would be negligible to minor following Project construction, as described in Section 4.3.4.2. Maintenance activities aimed at precluding soil erosion would be ongoing; therefore, impacts would be negligible following the Project construction.

4.3.9 CDCA Plan Compliance

Under LUPA-BIO-DUNE-1, evaluation of the Project found that:

- Portions of Segments ca-07, ca-09, and x-19 would cross areas of active windblown sand.
- Because portions of Segments ca-07, ca-09, and x-19 would cross areas of active windblown sand, those segments would be subject to dune/aeolian sand transport corridor CMAs.
- Thus, alternatives exist that would avoid crossing identified areas of active windblown sand, and thus reduce impacts.

Under LUPA-BIO-DUNE-2, evaluation of the Project found that Segments p-17 and p-18 would result in fewer impacts to windblown sand than the Action Alternative segments, and thus better maintaining the quality and function of aeolian transport corridors. However, the long-term impacts to areas of windblown sand from Segments ca-07, ca-09, and x-19 would be negligible to minor. Portions of LUPA-BIO-DUNE-2 and LUPA-BIO-DUNE-3 would be satisfied by application of BMP-WQ-06 and BMP-WQ-07 (Appendix 2A, Section 2A.13).

CMAs LUPA-SW-1, LUPA-SW-2, and LUPA-SW-5 would apply to the Project (Appendix 2C) and would be satisfied by information provided in Section 2.2.8; Appendix 4, Section 4.3; and Appendix 4, Section 4.2.10, respectively. LUPA-SW-6 through LUPA-SW-11 would also apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-GEO-01 and BMP-HAZ-01 and BMP-SOIL-04 through BMP-SOIL-07 (Appendix 2A, Sections 2A.2 and 2A.9).

4.3.10 Unavoidable Adverse Effects

Residual unavoidable impacts to soil productivity and areas of active sand transport in the Project area would remain after mitigation. The impacts would occur in those areas with structures and other permanent facilities, e.g., the SCS, permanent access roads, and transmission structures. Decreased soil productivity would result.

4.3.11 Cumulative Effects

The past uses in the CEA have had a direct effect on the soils, as described in Chapters 3. Within the 711,573-acre CEA, approximately 165,197 acres (23.2 percent) have been disturbed (Table 3-2). The use of land through activities such as mining, ranching, roads, solar projects, transmission lines, and OHV use have all shaped the current condition of the soil resources. The impacts of present actions in the CEA would be very similar to the past actions.

Reasonably foreseeable actions in the CEA that, when combined with the Project construction, may have cumulative impacts to the soil resources, including increased wind and water erosion rates in areas where ground surface disturbance occurs. The reasonably foreseeable actions within the CEA are described in Appendix 3, Table 3.12-2.

The reasonably foreseeable future projects (Table 3.12-2) have the potential to disturb an estimated 20,596 acres (2.9 percent of CEA). Any disturbance to surface soils through grading or other ground disturbance can potentially result in accelerated erosion at any one project site. Current and reasonably foreseeable projects would result in a total disturbance of 26.1 percent of the CEA representing a moderate impact to soils.

With incorporation of APMs and BMPs, similar to those implemented by the Project to address erosion and loss of topsoil, and MMs if needed, impacts to soil resources can be mitigated.

Climate change could impact soils, in particular due to intense wind or water erosion from extreme weather events, and when combined with already disturbed soils could lead to greater erosion impacts than might have been expected in the past (Brevik 2012).

Overall, when combined with past, present, and reasonably foreseeable projects, this project would result in a negligible increase to cumulative effects to soils, except in the case of sand transport areas. The Project itself would have a negligible to minor impact on sand transport, as there would be only a few structures in the sand area. However, when combined with past, present, and reasonably foreseeable projects, such as the solar facilities (Blythe Energy Power Plant/Sonoran Energy Project, Blythe Mesa Solar Project, Desert Quartzite Solar Project, and Crimson Solar Project, as described in Appendix 3, Table 3.12-2), these could have a minor to major cumulative effect on the transport of sand.

4.3.12 Irreversible and Irretrievable Commitment of Resources

Environmental impacts that have irreversible negative effects on soil resources are situations where vegetation and topsoils are impacted and not restored. In most cases, reclamation efforts would be made, and irreversible impacts to the soil resources and associated vegetation would be minor, including unavoidable adverse impacts and residual impacts discussed above. However, because soils in desert environments can be slow to recover, these minor impacts could be long-term.

4.3.13 Relationship of Short-term Uses and Long-term Productivity

The productivity or function of soil resources would be affected by both short-term impacts and long-term impacts. Short-term impacts to soil resources would be present until reclamation is conducted. Following reclamation, short-term impacts would be alleviated to the soil resources given the suitable climate conditions. Desert environments are typically slow to recover following disturbance unless adequate precipitation is received. Relative to short-term impacts, long-term loss of soil resources would be minimal in spatial scale.

4.4 BIOLOGICAL RESOURCES

4.4.1 Introduction

The impacts described in this section are discussed in terms of impacts on vegetation communities, wildlife species, special status species of plants and animals and their habitats, special habitat management areas, and noxious weeds.

4.4.2 Methods for Analysis

4.4.2.1 Analysis Area

The analysis area for the purpose of evaluating impacts to biological resources includes the 200-foot-wide ROW for all of the Action Alternatives plus ancillary Project components that would result in new surface disturbance outside of the ROW.

4.4.2.2 Assumptions

This analysis assumes that the APMs and BMPs included as part of the Proposed Action and all of the Action Alternatives would be fully implemented to avoid, minimize, or mitigate impacts to

biological resources. In the following analysis of Project-related impacts, the applications of these specific measures, as detailed in Appendix 2A, may be referenced by resource category and number (e.g., APM/BMP-BIO-#).

4.4.2.3 Environmental Effect Indicators, Magnitude, and Duration

Indicators used to assess Project-related impacts due to construction, operation, maintenance, or decommissioning of the Project include:

- Loss of natural, native species dominated vegetation communities or associations;
- Loss or degradation of aquatic, wetland, or riparian habitats caused by reduction in water quality, diversion of water sources, erosion or sedimentation from altered drainage patterns, or chemical contamination;
- Loss or degradation of terrestrial habitats due to clearing of vegetation, increased soil erosion, alteration in sand deposition, or introduction of invasive non-native plants;
- Loss of or impacts to rare vegetation communities or habitats that have a special designation by a Federal, state, or local agency;
- Introduction or increased spread of noxious weeds and other invasive exotic weed species;
- Loss of native vegetation communities, plants, and wildlife due to increased risk of wildfire from the spread of invasive and noxious weed species;
- Increased risk of collision of migratory birds due to presence of transmission line and associated structures;
- Increased risk of predation resulting from subsidized predator populations (increased food availability) or due to presence of transmission-related structures (perches and hiding structures);
- Loss of individuals or habitat of a plant or animal species that has been designated as special status by a Federal, state, or local agency;
- Displacement of, or disturbance to wildlife species due to noise and human activity associated with Project activities;
- Disturbance to wildlife from increased recreational access to remote areas accommodated by Project features;
- Increased risk of mortality to wildlife due to vehicle use and construction activities;
- Impacts to special designated management areas;
- Habitat fragmentation, including a decrease in function of wildlife corridors, due to Project features; and,
- Lack of compliance with Federal or state statutes or policies.

Impact analyses are discussed in terms of short-term (construction period up to 2 years), long-term (greater than 2 years but less than 50 years), or permanent (continues for the 50-year life of the Project). Note that Section 4.1.2 defines short-term impacts as those that may last for up 10

years; however, the DRECP defines short-term impacts to biological resources as up to 2 years, which is the timeframe used for this analysis of Biological Resources.

4.4.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. Current biological resource conditions in the analysis area would continue under the No Action Alternative. Biological resources would not be altered beyond current conditions by the Project. The Project Area would remain undisturbed unless unrelated actions occur.

4.4.4 Construction of Action Alternative Segments

4.4.4.1 Direct and Indirect Effects Common to All Action Alternatives

Project construction and related activities associated with all Action Alternatives could result in temporary damage to and/or permanent loss of vegetation, habitat loss and mortality of general wildlife species, and temporary disturbance to and/or loss of individuals or habitats of special status plant and animal species. Other potential impacts include disruption of wildlife movements, and impacts to designated wildlife management areas including loss of habitat due to the footprints of tower structures and access roads (e.g., USFWS wildlife refuge and BLM WHMAs). Temporary disturbance includes short-term impacts (less than 2 years) associated with construction, such as noise and the presence of construction workers.

Given that restoration of desert habitats following vegetation removal and disturbance of surface soils takes many years, for purposes of analysis of impacts to biological resources, all ground disturbance is considered long-term, which also includes all loss of habitat associated with permanent Project features (e.g., new transmission structures, SCS, access roads) that would remain throughout the life of the Project (i.e., 50 years for the life of the transmission line). For analysis purposes, it is assumed that each structure would impact 1.1 acres during construction, though more than 90 percent of ground disturbance associated with structures is expected to be reclaimed, as required by the BLM under the Habitat Reclamation and Monitoring Plan (Appendix 2B, Section 2B.10) (APM/BMP-BIO-15; Appendix 2A, Section 2A.4). The plan would specify processes for reclamation with the goal of restoration.

Tables 4.4-1 through 4.4-3 in Appendix 4 provide acres of long-term disturbance associated with each route segment (this is the combined acres of short- and long-term disturbance reported in Appendix 2, less the acres of permanent structure foundations that were included as a subset of short-term disturbance), length of the line segment in miles, and the number of structures associated with each segment. The long-term disturbance acreages estimate the generalized disturbance to wildlife and habitat along each segment.

Vegetation Communities

The Project would involve the removal of vegetation during construction activities, resulting in the direct reduction in the representation of plant communities. Vegetation removal and disturbance of soils could have a variety of effects on vegetation communities, ranging from changes in community structure and species composition to alteration of soil moisture or nutrient

regimes. Removal of protective vegetation would also expose soil to potential wind and water erosion. This could result in further loss of soil and vegetation, as well as increased sediment input to water resources.

Fugitive dust from construction traffic has the potential to affect photosynthetic rates and decrease plant productivity. Clearing and grading could also result in the alteration of soil conditions, including the loss of native seed banks, and change the topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired.

Though portions of each alternative pass through developed agricultural areas at the east and west ends of the Project, the majority of each alternative is within the Sonoran desertscrub biotic community. Trimming or removal of tall vegetation for conductor clearance would alter some of the more robust plants within the vegetation community and can leave these plants more susceptible to disease and possibly result in the death of those plants. The vegetation communities and plant associations within the Sonoran Desert are very slow to re-grow perennial species following disturbance, often taking decades to recover, if at all. These disturbed lands are highly susceptible to colonization and expansion of invasive annual plant species (especially red brome and Sahara mustard). The introduction and colonization of disturbed areas by invasive exotic plant species also could lead to changes in species composition of vegetation communities, including the possible shift to more wildfire-prone vegetation that favors invasive exotic species over native species.

Project implementation would have direct and indirect impacts on vegetation resources located within areas disturbed by construction activity; however, these potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

Special Status Plant Species

The impacts described for general vegetation apply to special status plant species. As noted in Section 3.4, no plant species listed under the Federal ESA would be expected to occur in the Project Area; therefore, no impacts to listed plant species would occur. However, in Arizona more than 200 species protected by the Arizona Native Plant Law, including blue paloverde, foothill paloverde, velvet mesquite, desert ironwood, ocotillo, and various cacti (e.g., saguaro, cholla, barrel, hedgehog, and prickly pear) occur within the Project Area. In California, as many as 16 species considered rare by the CNPS and two plant species considered sensitive by the BLM have the potential to be impacted by Project activities.

Noxious and Invasive Weeds

The inadvertent introduction of non-native plant species is a threat to native desert plant communities. Since noxious and invasive weeds are typically effective competitors with native plants, disturbance of vegetative cover that facilitates their introduction, spread, and proliferation could alter plant community composition, reduce native plant species cover, and alter natural fire regimes. Because these weeds are often fire-adapted, they perpetuate increased fire risk once established. Noxious and invasive weed species of particular concern known to occur in the Project Area include Russian knapweed, diffuse knapweed, Russian thistle, brome grasses, and Sahara mustard.

The Project would remove native vegetation and disturb soils at structure construction sites, storage areas, along access roads, and wherever heavy equipment is used, providing suitable conditions for infestation by non-native plants. An influx of vehicles and machinery for construction of any of the Action Alternatives could facilitate weed introduction and spread into the ROW. Non-native plant seeds or plant parts could be transported on vehicles, construction equipment, or in materials such as dirt, straw bales, and wattles. Enhanced public access to the Project corridor during and after construction could also contribute to the spread of non-native plants. The Noxious Weed Management Plan (Appendix 2B, Section 2B.11) (APM-BIO-12; Appendix 2A, Section 2A.4), to be approved by BLM, would require pre-construction surveys and regular monitoring for invasive and noxious weeds within the ROW, along permanent and temporary access roads, and any other sites where Project activities result in soil disturbance. The plan would include prevention and treatment methods that include cleaning equipment to prevent the spread of noxious weeds into or out of the Project Area. Chemical treatment for control of noxious weeds or invasive species within or adjacent to the ROW would only be applied if absolutely necessary by using only BLM-approved products, limiting applications within floodplains and washes, and conducting all activities in accordance with the Noxious Weed Management Plan (Appendix 2B, Section 2B.11.

Through Project implementation, direct and indirect impacts would occur to native desert plant communities and special status plants as a result of the spread of noxious and invasive plant species within areas disturbed by construction activity; however, these potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

Wildlife

Direct impacts on wildlife anticipated as a result of the Project include the removal of vegetation that would result in the long-term loss of wildlife habitat along with the displacement and/or potential mortality of resident wildlife species, especially those that are less mobile such as snakes, lizards, and small mammals. Clearing and grading would generate the greatest construction impacts on wildlife. Injury or death of wildlife would result primarily from the use of construction vehicles, and the grading of access roads and laydown areas for structure erection. Fossorial species, such as small burrowing animals (e.g., lizards, snakes, and small mammals) may be harmed through the crushing of burrows, the loss of refugia, and direct mortality from construction activities. Various wildlife species could be trapped in holes or trenches created for construction purposes. Though there is little aquatic habitat, amphibians (e.g., Sonoran desert toad and Couch's spadefoot toad) may be present throughout the Project Area and especially near ephemeral washes following rain events, when they may be crushed by construction equipment, or be trapped in water-filled holes at construction sites. Construction could also result in an increase in accidental road-killed wildlife due to increased vehicle traffic along the construction corridor. Diurnally active reptiles (e.g., lizards and some snakes) and mammals (e.g., rabbits and ground squirrels) are the most likely to be subject to mortality from construction vehicles. More mobile species like birds and larger mammals are expected to disperse into adjacent habitat areas during the land clearing and grading phases associated with Project construction.

Removal of vegetation during Project construction would reduce the amount of habitat available for wildlife in a particular area. Individuals displaced from areas cleared of native vegetation

could be lost if adjacent habitats are at carrying capacity or if they are exposed to an increased risk of predation.

Construction may also result in fragmentation and degradation of adjacent native habitats due to use of and improvement to existing access roads, disturbance, noise, vibration, dust, increased human presence, and increased vehicle traffic. Use of and improvements to existing roads, and creation of new roads to access construction sites and support long-term Project maintenance, provides opportunities for increased human presence and disturbance to wildlife habitat by recreationists, and especially by off-highway vehicle enthusiasts.

Construction activities and human presence can alter, displace, or disrupt the breeding and foraging behavior of wildlife. Wildlife species are most vulnerable to construction-related disturbances during their breeding seasons when disturbances could result in nest, roost, or territory abandonment, and subsequent loss of reproductive effort. The use on lights for construction activities during the night may attract insects that could attract foraging bats. Though construction activities are a potential source of disturbance, it is unlikely that roosting areas would be disturbed except perhaps if blasting occurs nearby and bats are temporarily frightened from their roosts.

Local wildlife populations along the ROW could temporarily decline or disperse during the construction phase of the Project but are expected to return to their pre-construction levels once construction workers leave the area and disturbed habitats are restored. For portions of the Project that would be constructed adjacent to existing roads, most of the wildlife present would be considered common, wide-ranging species already likely habituated to some level of on-going disturbance. Also, since construction is of short duration and limited to relatively small areas within a large expanse of desert habitats, wildlife would likely quickly return to the ROW as work crews move to new work locations. Nocturnally active wildlife would be affected less by construction than would diurnally active species. Construction activities associated with Project implementation would have direct and indirect impacts on general wildlife located within areas disturbed by construction activity; however, these potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

Special Status Wildlife Species

Project activities could impact special status wildlife species in much the same way as discussed for common wildlife species. The APMs and BMPs identified for general wildlife would apply to special status wildlife species, minimizing Project-related impacts. These include pre-construction presence/absence surveys would be conducted for special status wildlife species, including nesting migratory birds such as the burrowing owl. Qualified biologists would follow established survey protocols and would conduct the surveys in locations where special status wildlife species are likely to occur within the Project ROW, and specifically locations where vegetation would be impacted. Though this approach should result in locating and moving animals present in construction areas out of harm's way, it is likely individuals of small, fossorial, and cryptic species such as small mammals, snakes, and amphibians would be missed. However, the amount of habitat that would be impacted by Project activities would be small in comparison to available habitat, and the loss of individuals would not impact local populations.

Project construction activities could frighten Sonoran pronghorn if they are in the area. These individuals would move away from construction activities. Construction activities may keep Sonoran pronghorn from water sources or may cause them to avoid the areas entirely. Sonoran pronghorn need to move widely across the landscape as habitat conditions may vary dramatically between different locations based on sporadic and localized rainfall. Because there are large areas of similar habitat for those individuals, and construction activities would occur for a relatively short amount of time, this effect would be negligible.

Small stands of emergent vegetation are adjacent to the Colorado River and associated backwater channels. Though too small for nesting, Yuma Ridgway's rail or California black rail could occasionally use and forage in these and other stands of emergent vegetation along canals and drains in the agricultural areas. Though no suitable nesting habitat is within the Project area for southwestern willow flycatcher or western yellow-billed cuckoo, preconstruction surveys for nesting migratory birds would detect (and protect) these species, if present. No large trees would be removed within the Colorado River corridor, reducing potential impacts to proposed critical habitat for the western yellow-billed cuckoo.

Project-related impacts to desert tortoise are similar to those discussed for less mobile wildlife species that are susceptible to being killed during vegetation removal, crushed in burrows, and run over by construction equipment and vehicles. The desert tortoise is a long-lived species, taking many years to reach reproductive maturity. Micrositing would reduce the effects of the Project on Mojave desert tortoise habitat.

The Project presents other potential threats to the desert tortoise. Removal of vegetation and disturbance to soils increases the probability of invasion and spread of non-native plant species, especially annual brome grasses. These non-native plants provide poor quality forage for the desert tortoise and crowd out many native, more nutritious forage species.

Common ravens are known to perch and nest on transmission structures, and they are also known to be opportunistic predators of various wildlife species, including juvenile desert tortoises. The potential of raven predation is a management concern for the desert tortoise. Improving existing roads and grading new roads into remote areas can lead to increased recreational access to remote areas and increase the potential for encounters (including illegal collection) between people and tortoises.

Construction activities associated with the Project could have direct and indirect impacts on the desert tortoise located within areas disturbed by construction activity; however, these potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

Between potential Project crossing locations, a backwater channel east of and parallel to the river channel would be avoided by spanning the aquatic habitat. There would be no direct impact to fishes (e.g., razorback sucker and bonytail chub). Areas designated as critical habitat for the razorback sucker would be spanned by the Project; therefore, there would be negligible impact on razorback sucker critical habitat.

Wildlife Corridors, Wildlife Habitat Management Areas, and Wildlife Waters

Construction activities in the Plomosa Mountains, Livingston Hills, and New Water Mountains, within Kofa NWR, and in the Dome Rock Mountains in the area surrounding Copper Bottom Pass areas could deter desert bighorn sheep from crossing into favored lambing grounds, keep them from water sources, or may cause them to disperse from the area entirely. Desert bighorn sheep need to move widely across the landscape as habitat conditions may vary dramatically between different locations based on sporadic and localized rainfall. Long-term impacts to the function of WHMAs and wildlife movement corridors, and disturbance to wildlife seeking access to watering sites may result from facilitating access to remote areas for recreational use.

Construction activities associated with Project implementation could have direct and indirect impacts on the use of wildlife corridors by desert bighorn sheep and other wildlife located within areas disturbed by construction activity; however, these potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

Migratory Birds and Raptors

Impacts could occur if trees and/or shrubs were removed that contained an active nest. The removal of habitat or substantial disturbance (e.g., helicopter fly yard activity) during the breeding season would likely result in the displacement of breeding birds and the abandonment of active nests. Burrowing owls may use their burrows throughout the year, where they could be crushed by heavy equipment.

The presence of transmission structures would provide perches as well as nesting sites for some raptor species. In some areas, the transmission line structures may be the only suitable nesting structures allowing some species to utilize areas that would otherwise be unsuitable.

Noise-related construction activities and increased human presence could affect raptor nesting, roosting, and foraging activities; some species such as golden eagles are especially sensitive to disturbance. Changes to behavior could include increased alertness, turning toward the disturbance, fleeing the disturbance, changes in activity patterns, and nest abandonment. Raptors would be especially susceptible to disturbance early in the breeding season, possibly resulting in nest abandonment and failure. Soaring birds may collide with the transmission line, especially during poor weather conditions and along elevated terrain where soaring raptors would be at greater risk for collisions.

While night lighting associated with the Project would be minimal, constant-burn lighting on structures increases collision risk for night migrating birds.

Transmission lines crossing the Colorado River and its historic floodplain are a potential collision hazard for birds following the river corridor, especially during migration. Guy wires (associated with guyed V structures) are often difficult for birds to detect due to its narrow diameter compared to conductor bundles and are a collision hazard to birds in flight.

The Project has the potential to negatively impact migratory birds due to removal of nesting habitat during the breeding season, collision, and disturbance. Potential impacts to migratory birds would be minimized through implementation of various APMs and BMPs such as an Avian Protection Plan and Bird and Bat Conservation Strategy (APP/BBCS) (Appendix 2B, Section

2B.5), seasonal restrictions, utilizing APLIC guidelines (APLIC 2012), and modifying structures at river crossings (Appendix 2A, Section 2A.4).

4.4.4.2 Direct and Indirect Segment-and Species-Specific Impacts

Direct and Indirect Segment-specific Effects

Appendix 4, Tables 4.4-1 through 4.4-3 detail the acreage of long-term disturbance by segment, which would be the generalized disturbance to wildlife and habitat along each segment.

Segment p-01

Segment p-01 passes across a desert bighorn sheep dispersal corridor between Burnt Mountain and the Big Horn Mountains and would temporarily disrupt movement for forage.

Segment d-01

Where Sonoran desertscrub communities are well represented along Segment d-01, Sonoran desert tortoise could experience some loss of habitat.

Segments p-04 and p-05

Habitat suitability improves for Sonoran desert tortoise and other wildlife closer to the Eagletail Mountains; consequently, development of these segments could contribute to additional habitat degradation.

Segments in-01 and i-04

Project development of segments adjacent to I-10 would have minimal impact on biological resources due to the on-going influence I-10 has on wildlife in the area.

Segment p-06

This segment is almost 36 miles long and follows the existing DPV1 line and corridor with approximately 25 miles crossing the Kofa NWR. Construction along this segment has the potential to alter habitats of various special status species including Gila monster, elf owl, gilded flicker, LeConte's thrasher, and Lucy's warbler. The portion of this segment near and through the Kofa NWR has the potential to disrupt desert bighorn sheep movement and habitat use, as well as impact good quality habitat for the Sonoran desert tortoise, and disturb golden eagles. Three wildlife waters (New Water Well, Scott Well, and Twelve Mile Well), developed primarily for desert bighorn sheep, are within 0.7-mile of the route, and wildlife may avoid these sources of water during the construction period. The route crosses between the Livingston Hills and New Water Mountains, an identified desert bighorn sheep dispersal corridor, temporarily disrupting movement for forage. This segment, along with most alternative segments to Segment p-06 are within the designated experimental nonessential population area for the Sonoran pronghorn; except within the Kofa NWR where the Sonoran pronghorn is protected as a threatened species. Sonoran pronghorn may avoid the area during construction, thereby disrupting natural movement patterns, and forage habitat and access to water sources would be lost in the short term until construction areas are revegetated.

Construction activities associated with Segment p-06 would not be in compliance with the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 and could have significant direct and indirect impacts on the continued management of the Kofa NWR for the conservation and development of natural wildlife. These impacts would be major, with both short- and long-term effects, and cannot be mitigated. The USFWS states (USFWS 2017) that the construction of a new transmission line across the Kofa NWR should not be considered as a viable alternative.

Segment i-05

Each of these segments parallel or cross I-10 in the vicinity of Quartzsite. The corridor has been subject to long-term disturbance due to the highway, traffic, and presence of people. The Sonoran desertscrub community would largely be inhabited by low to moderate densities of common wildlife species. Additional disturbance associated with the Project would be largely indistinguishable from current conditions.

Segment x-05

Though Segment x-05 would be close to long-term visitor camping areas (approximately 1.2 miles from the centerline of the segment), and the presence of numerous unimproved roads, various special status species may occur in the Sonoran desertscrub habitat, mostly due to the proximity to the Plomosa Mountains and the Kofa NWR. Golden eagles may be present and may be impacted by segment development.

Segment cb-01

The area that would be crossed by Segment cb-01 is used by desert bighorn sheep, including as lambing areas. The segment passes within 0.6- and 0.7-mile of wildlife waters Dome Rock and Tule Tank, respectively. Project development may impact important desert bighorn sheep use area.

Segments p-11 and cb-03

The area that would be crossed by these segments is a desert bighorn sheep use and lambing area, and a movement corridor within the Dome Rock Mountains. Both routes pass within 0.1-mile of wildlife water Dome Rock Mountain #1 and within 1 mile from Dome Rock wildlife water. The impacts of Project development would be additive to the existing habitat fragmentation through the narrow Copper Bottom Pass.

Segments cb-02 and cb-04

These segments cross through remote, almost pristine mountain habitats northwest of Cunningham Peak. Segment cb-02 parallels a portion of Johnson Canyon, with well represented desert wash vegetation, likely providing habitat for special status species such as Gila monster, Sonoran desert tortoise, and Lucy's warbler. A developed wildlife water in Johnson Canyon (Dome Rock) is used by desert bighorn sheep and mule deer. This is a desert bighorn sheep lambing area. Project-related construction within Johnson Canyon would only occur from July through September, outside of peak OHV season. However, this is a critical period for wildlife, which is subjected to very harsh conditions during the summer months when water is often in

limited supply. Concentrating construction activities during these months may reduce access by desert bighorn sheep and mule deer to reliable water sources, and limit use of favored habitat areas. There is developed water (Dome Rock Mountain #1) about 1 mile away on the opposite side of the road through Copper Bottom Pass; another water source (Tule Tank) is about 2.5 miles away on the opposite side of Cunningham Peak. Project development would impact near-pristine desert in this area and may result in disturbance to desert bighorn sheep and mule deer during a critical time period.

Segments i-06 and i-07

Desert bighorn sheep may use the steep slopes on both sides of I-10 through the pass, and the pass provides for movement by wildlife through the Dome Rock Mountains, even with the presence of the interstate highway. However, Project development of segments adjacent to I-10 would have minimal impact due to the on-going influence I-10 has on wildlife in the area.

Segments p-15w, p-16, ca-01, ca-02, ca-05, ca-06, x-09, x-10, x-11, x-12, x-13

Agricultural areas and associated canals and water features close to and crossed by these segments are frequently used by waterfowl, sandhill cranes, raptors, and a wide range of other species. Development in agricultural areas could result in avian mortality due to collision with transmission lines and structures. Though all segments would place conductor bundles in a horizontal, parallel configuration to reduce collision hazard, Segment p-15w parallels DPV1 and would match the existing structure spacing and conductor heights thereby further reducing the collision hazard.

Segments p-17, p-18, ca-07, ca-09, x-15, x-16, and x-19

West of the agricultural fields to the Colorado River Substation, route segments cross areas with very sandy soil on the Palo Verde Mesa. The amount of sand in the soil increases, and the stability of the soil surface decreases, from east to west. These segments are within the sand and dune system as mapped by the DRECP, as well as modeled habitat for Harwood's eriastrum and Mojave fringe-toed lizard. Though the entire mesa is considered part of a sand and dune system, Segments ca-07, ca-09, and a portion of x-19 cross an area of active windblown sand deposition (Figure 3-2). This is where Hardwood's eriastrum has been located and Mojave fringe-toed lizards are more common. These segments pass through about 3.5 miles of sand dune habitat, and about 18 structures would be constructed. Development of Segments ca-07, ca-09, and x-19 would impact 22.7 acres (Appendix 4, Table 4.4-5) of BLM dune habitat (plus another 4.7 acres on private land) and have substantively more potential to impact suitable habitat for both Harwood's eriastrum and Mojave fringe-toed lizard than other routes leading to the substation.

Segments p-17 and p-18, the southernmost route segments heading to the Colorado River Substation, cross sparse stands of creosote and white bursage, and cross three protected washes classified as the *Parkinsonia florida–Olneya tesota* (blue paloverde-ironwood) Alliance; 1.4 acres would be impacted on BLM-administered lands, while impacts to 0.3 acre of wash habitat would be on private land and not subject to BLM requirements. Segment ca-07 also has one crossing of a wash possibly impacting approximately 0.1 acre of BLM land. Soils along part or most of Segments p-17 and p-18 are quite sandy, though these segments do not cross areas classified as having active aeolian deposits (a small area of active deposition is adjacent to

Segment p-17). Segments p-17 and p-18 approach the Mule Mountains, where some of the more suitable habitat for the threatened Mojave desert tortoise is found.

Helicopter fly yards for Segments p-09, p-10, p-11, and cb-01/cb-02 would generate greater amounts of fugitive dust than for segments where helicopters are not used; therefore, the potential to affect photosynthetic rates and decrease plant productivity would be higher in the vicinity of the fly yards. The Erosion, Dust, and Air Quality Plan (Appendix 2B, Section 2B.12) would include information about the reduction of dust emissions generated from helicopter use. The noise and dust associated with the helicopter fly yards would also cause a higher level of wildlife disturbance; however, adherence to seasonal wildlife restrictions per the AGFD, CDFW, and/or applicable RMPs (BMP-BIO-32; Appendix 2A, Section 2A.4) would eliminate these effects during sensitive periods. Wildlife would be expected to return after helicopter use had ceased and habitat was restored. Therefore, these effects would be negligible to minor and short-term.

Direct and Indirect Species-specific Effects

Sonoran Pronghorn

Additional development of the utility corridor through the Kofa NWR could facilitate increasing use of the surrounding remote areas by off-highway vehicle enthusiasts, increasing the possibility of disrupting Sonoran pronghorn movements and use of the area over the long-term. Preventing the invasion and spread of non-native species is important to maintaining the quality of Sonoran pronghorn habitat and preventing wildfire. The experimental nonessential status of the Sonoran pronghorn population allows for regulatory flexibility under the ESA and other lawful activities continue unaffected; however, on a NWR a higher standard of protection is required where the Sonoran pronghorn is protected under the same standards as for a threatened species.

Construction activities associated with the Project could have negligible direct and indirect impacts on Sonoran pronghorn located within the experimental nonessential population area off the Kofa NWR, and major indirect effects to Sonoran pronghorn on the Kofa NWR. Construction activities may keep Sonoran pronghorn from water sources or may cause them to avoid the areas entirely. Sonoran pronghorn need to move widely across the landscape as habitat conditions may vary dramatically between different locations based on sporadic and localized rainfall. These potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

Rare and Sensitive Vegetation Alliances

Three rare plant alliances on the Palo Verde Mesa are crossed by one or more route alternatives (Figure 3-3 and Appendix 4, Table 4.4-4). Initial Project planning indicates that structure placement and access road use on BLM-administered land could result in impacts to the *Pleuraphis rigida* (big galleta) Alliance and/or *Prosopis glandulosa* (honey mesquite) Alliance, depending on route segment selection. The *Pleuraphis rigida* Alliance is a sand dune vegetation alliance; impacts would be minimized through BMPs (Appendix 2A, Section 2A.4). Any required mitigation in California would be addressed during micrositing for the Project. These

potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

In California on BLM lands, specific protection measures for four desert riparian woodland alliances (*Prosopis glandulosa* Alliance [also rare], *Pluchea sericea* Alliance, *Parkinsonia florida–Olneya tesota* Alliance, and *Suaeda moquinii* Alliance) (Figure 3-3) include a 200-foot setback from the outer perimeter of these alliances for ground disturbing (and vegetation disturbing) activities. Minor incursions would be allowed to balance avoiding the need for vegetation trimming while maintaining an appropriate buffer (BMP-BIO-52; Appendix 2A, Section 2A.4). Any loss of desert riparian woodland would be compensated at a 5:1 ratio.

Harwood's Eriastrum

Harwood's eriastrum is the only BLM designated sensitive plant species known to be present on the Palo Verde Mesa.

Ground-disturbing activity, including structure pad preparation and construction, grading of new access roads, clearing of staging areas, and use or improvement of existing access roads have the potential to disturb or destroy individual plants and seed bank of this annual herbaceous species. As an inhabitant of wind deposited dune habitat, project facilities, structures, and construction practices (e.g., equipment stockpiles, access road stabilization) could interfere with wind-driven sand transport mechanisms and alter the condition, distribution, and quality of the aeolian dune system. Dunes can be stabilized or partially stabilized where sand becomes somewhat anchored by both native and non-native plants, and fine, loose sand is blown away while not being replaced by sand transported from upwind. Project impacts to active and stabilized sand dunes include the potential introduction and spread of non-native vegetation, clearing of native vegetation, short- or long-term interruption of sand transport, and resulting compaction of soils due to development of access roads and clearing of work areas, potentially altering the structure of the dune community.

Though the DRECP LUPA, maps most of the Palo Verde Mesa as part of a sand and dune system (Figure 3-2), active sand transport is limited primarily to a corridor north of the Colorado River Substation that is about 1-mile-wide extending to the east a distance of about 5 miles (Figure 3-2), consistent with where Harwood's eriastrum has been located. In accordance with BMP-BIO-53 and BMP-BIO-54 (Appendix 2A, Section 2A.4), within aeolian corridors that transport sand to dune formations, activities are to be designed and operated to facilitate the flow of sand, and roads would be at grade (e.g., no berms) to avoid trapping or diverting sand from the corridor. Footings would be 6 feet in diameter and extend about 2 feet above ground level, and would cause intermittent, localized disruptions of the flow of sand for short distances. Tangent lattice structures would be used, which would minimize obstruction to sand transport. Tangent lattice structures would allow winds to essentially blow through the structure, minimizing the impact on sand transport. Because of the small size and configuration of the structure foundations, the long distances between structures, and the linear west to east Project alignment consistent with wind direction, the impacts to sand transport are considered negligible to minor. Structures and roads are not expected to interfere with sand transport in a manner that would impact associated ecological processes. Maintenance of sand dune habitats are more dramatically affected by the presence of Sahara mustard, which in strong bloom years may virtually shut

down aeolian sand migration; climate change and altered storm patterns; and changes in hydrology due to flood control measures associated with I-10 and other roads (Kenney 2017).

The DRECP LUPA prescribes specific CMAs for Harwood's eriastrum and its dune habitat to avoid and minimize impacts on BLM lands. These measures include implementing an avoidance setback of 0.25-mile from all occurrences of the plant to protect ecological processes and establishing a limit (cap) for impacts to suitable habitat to a maximum of 1 percent throughout all BLM lands included within the DRECP. However, based on the distribution of potentially suitable habitat (Figure 3-5), Harwood's eriastrum is expected to be present along all Project alternatives crossing the Palo Verde Mesa such that a 0.25-mile setback would preclude the Project from connecting with the Colorado River Substation. Therefore, if Project design is not consistent with DRECP LUPA specifications, exceptions can be allowed through an amendment to the CDCA Plan as long as the goals established by the LUPA are met. Since it can be shown that the linear nature of the Project can avoid impacts to the ecological processes (i.e., sand movement) that support populations of this plant species, and meet the DRECP goal of promotion of the ecological processes that sustain special vegetation types and BLM sensitive species, the CDCA Plan, as amended, is further amended to allow Project construction to proceed provided a Linear Right-of-Way Rare Plant Protection Plan (to be completed before a NTP would be issued) for Harwood's eriastrum is developed with the objectives of:

1) Avoidance of take of individual plants to the maximum extent practical; and
2) Avoidance of impacts to Harwood's eriastrum suitable habitat to the maximum extent practical.

To achieve these objectives, implementation of BMP-BIO-31 (Appendix 2A, Section 2A.4) is required in Harwood eriastrum suitable habitat.

Appendix 4, Table 4.4-5 details disturbance to suitable Harwood's eriastrum habitat by segment based upon the presumed habitat.

Initial Project planning indicates that structure placement and access road use could result in impacts within Harwood's eriastrum suitable habitat (Appendix 4, Table 4.4-5). However, it is expected that these impacts would be further reduced to the maximum extent practical based on micrositing and implementation of BMP-BIO-31 (Appendix 2A, Section 2A.4).

For the purposes of implementing BMP-BIO-31, occupied habitat is defined as the location of a live Harwood's eriastrum plant. Upon the death and desiccation of the annual plant, or the absence of germination due to lack of precipitation, the area would be included as suitable habitat but would not be considered occupied habitat. Even though the DRECP mapped the range-wide distribution of Harwood's eriastrum, a more accurate representation of suitable habitat on the Palo Verde Mesa was derived using soil maps (e.g., aeolian surficial deposits), known locations of Harwood's eriastrum, and Mojave fringe-toed lizard distribution—a sympatric, dune obligate species (Figure 3-5). This mapping defines suitable habitat on the Palo Verde Mesa and is used for Project-specific impact assessment. However, a similar range-wide map for Harwood's eriastrum is not available. To evaluate the 1 percent limit on impacts to Harwood's eriastrum range-wide on BLM lands, the distribution model developed for the DRECP was applied.

The DRECP modeled 288,404 acres, including most of the Palo Verde Mesa, which is on the east end of the approximately 50-mile long, east-west trending Chuckwalla Valley, as the distribution of Harwood's eriastrum on BLM lands addressed by the DRECP LUPA. Using the DRECP model, all Project-related ground disturbance activities (e.g., structure construction, access road development) were calculated by Project Alternative. Based upon the modeled habitat, Alternative 2 would potentially disturb 60.2 acres of Harwood's eriastrum habitat (0.02 percent of the total modeled habitat range-wide), more than any other Alternatives, and this estimate for Project impact acres does not consider additional reduction in area of impact that would be achieved through micrositing. Other BLM-approved projects have occurred within the Chuckwalla Valley, including the Colorado River Substation, Desert Sunlight, and Genesis. A total of 313.6 acres of modeled Harwood's eriastrum habitat has been impacted by these past projects (Colorado River Substation 77.3 acres; Desert Sunlight 0 acres; Genesis 236.3 acres), and together with the Project would impact 373.8 acres of DRECP modeled habitat. There is a total of 103,958 acres of modeled Harwood's eriastrum habitat in the Chuckwalla Valley; all projects in Chuckwalla Valley combined result in impacts to 0.36 percent of DRECP modeled Harwood's eriastrum habitat within Chuckwalla Valley, or 0.12 percent of modeled habitat range wide. The sum of impacted habitat from these projects on BLM land is below the 1 percent cap (i.e., 2,884 acres).

Project implementation could have direct and indirect impacts on special status plant species located within areas disturbed by construction activity; however, these potential impacts would be either eliminated and/or minimized through implementation of various APMs and BPMs (Appendix 2A, Section 2A.4).

Mojave Fringe-toed Lizard

Project-related impacts to the Mojave fringe-toed lizard are similar to those discussed for less mobile wildlife species that are susceptible to being killed during vegetation removal, crushed in burrows, and run over by construction equipment and vehicles. When frightened, Mojave fringe-toed lizards will flee and then bury themselves in the loose sand, increasing the potential that Project activities could unknowingly crush individuals, including mortality from use of access roads.

By definition, dune habitat shifts on the landscape in response to wind patterns and may create small (unmapped) patches of suitable Mojave fringe-toed lizard habitat throughout the sand field. Dunes can be stabilized or partially stabilized where sand becomes somewhat anchored by both native and non-native plants, and fine, loose sand is blown away while not being replaced by sand transported from upwind. Project impacts to active and stabilized sand dunes include the potential introduction and spread of non-native vegetation, and the clearing of native vegetation and resulting compaction of sands to establish access roads and clear work areas, potentially altering the structure of the dune community. Because of the small size and configuration of the structure foundations, the long distances between structures, and the linear west to east Project alignment consistent with wind direction, the impacts to sand transport are considered negligible to minor.

Construction activities associated with the Project could have direct and indirect impacts on Mojave fringe-toed lizards located within areas disturbed by construction activity; however,

these potential impacts would be minimized through implementation of various APMs and BMPs (Appendix 2A, Section 2A.4).

The habitat model developed for the DRECP maps most of the Palo Verde Mesa as potentially suitable habitat for the Mojave fringe-toed lizard (Figure 3-2). However, a more accurate representation of suitable habitat on the Palo Verde Mesa was derived using soil maps (e.g., aeolian surficial deposits), known locations of the Mojave fringed-toed lizard from the CNDDB, and occurrence records for Harwood's eriastrum—a sympatric, dune obligate species. These data tended to cluster and polygons of presumed suitable Mojave fringe-toed lizard habitat were mapped (Figure 3-7). This mapping defines suitable habitat on the Palo Verde Mesa and is used for Project-specific impact assessment for implementation of clearance surveys on BLM land. The anticipated Project impacts to Mojave fringe-toed lizard habitat by segment is identical to Harwood's eriastrum, as provided in Appendix 4, Table 4.4-5, using the presumed habitat.

Alternative 2 would potentially disturb 60.2 acres of DRECP modeled Mojave fringe-toed lizard habitat, more than any other Action Alternative, and this estimate for Project impact acres does not consider additional reduction in areas of impact that would be achieved through micrositing. These acres account for 0.048 percent of all modeled Mojave fringe-toed lizard habitat across the Chuckwalla Valley (i.e., 132,117 acres).

Appendix 4, Table 4.4-6 details the acreage of long-term disturbance by segment in the western portion of the Project Area, which would be the generalized disturbance to wildlife and habitat along each segment.

4.4.5 Operations, Maintenance, and Decommissioning

The anticipated operations and maintenance duration is 50 years. Though most impacts to biological resources are expected to occur in association with construction, some Project-related activities and Project effects would continue. Noise and human presence that would disturb wildlife could result from many on-going Project activities. The use of vehicles and occasionally heavy equipment could result in crushing and removal of plants, collisions with animals, collapsing burrows, and loss of refugia. The long-term presence of structures and guy lines remain a collision threat to birds. The transmission line would be inspected annually or as required by using fixed-wing aircraft, helicopters, ground vehicles, all-terrain vehicles, or on foot. Maintenance of the line and facilities would be performed as needed. Maintenance vehicles would generally require access to the ROW once yearly, and where long-term access is required for maintenance and operation, a regular maintenance program may include, but would not be limited to, blading, ditching, culvert installation, and surfacing. The SCS would require minor maintenance over a 3-to 5-day period once each year.

Repair and maintenance, including replacement of conductors, and decommissioning may require the same types of equipment used during construction, including power augers for hole boring, backhoes for excavation, and/or concrete trucks and cranes for structure erection. Other required equipment may include power tensioners, pullers, wire trailers, crawler tractors, and trucks and pickups for hauling materials, tools, and workers. Helicopters may be used in some circumstances. The frequency and duration of repair activities is unknown but would be a short-term impact.

4.4.5.1 Vegetation

As part of maintenance and operations activities, vegetation within the ROW may be selectively removed or trimmed in accordance with the Vegetation Management Plan (Appendix 2B, Section 2B.11) (APM/BMP-BIO-11; Appendix 2A, Section 2A.4) to provide the required minimum conductor clearance. Maintenance crews would routinely trim vegetation and remove brush within the ROW, as necessary, to prevent accidental grounding contact with conductors.

The potential introduction of non-native plant species would be less likely than during construction but would continue during operation and maintenance phases of the Project.

Where access is required for nonemergency maintenance and repairs, the same precautions against ground disturbance that were taken during construction would be followed and applicable APMs and BMPs would be implemented. Restoration and reclamation procedures following completion of repair work would be similar to those prescribed during construction, and any necessary temporary staging areas outside the ROW would require authorization.

During operations, maintenance, and decommissioning:

- Project operations may result in negligible impacts to vegetation resources;
- Project maintenance may result in minor impacts to vegetation resources; and,
- Project decommissioning may result in moderate impacts to vegetation resources.

4.4.5.2 Wildlife

Project operations require occasional presence of people and activities for annual line and facilities inspection, and maintenance of facilities conducted on an as needed basis. Site visits may occur to monitor and treat invasive plants, monitor restoration sites, and to conduct other resource management actions. Site visits, including helicopter inspection of the lines, may result in wildlife temporarily fleeing an area, but within the animal's normal behavior patterns. Some individuals of small wildlife (e.g., rodents, rabbits, snakes, lizards) may be run over by vehicles. However, these visits are infrequent, and consistent with current use of roads throughout the Project Area open for public use. Any new roads built and not reclaimed would provide vehicle access in areas previously precluded due to lack of roads.

Successful habitat restoration may take many years before wildlife would use these areas at the level prior to impact and restoration. The presence of utility lines and structures may provide on-going opportunities for raptors and ravens to perch and possibly nest, increasing their presence and enhancing their ability to capture prey that includes a variety of wildlife species, most notably juvenile Mojave desert tortoises. Application of Avian Power Line Interaction Committee recommendations (APLIC 2006 and 2012), could reduce the likelihood of collisions of birds during Project operations. An APP/BBCS (Appendix 2B, Section 2B.5) (APM-BIO-21 and BMP-BIO-29; Appendix 2A, Section 2A.4), required for the Project, would include a monitoring program to determine the effectiveness of the design to protect birds that utilize power lines and structures for perching and nesting, and to establish implementation measures for the use of flight diverters and other means to make lines more visible to reduce bird collisions. The guyed V structures, up to 190 feet tall, require four guy wires for support. Guy

wires are often difficult for birds to detect and represent a continuing collision hazard for birds, and to a lesser extent, bats.

During operations, maintenance, and decommissioning:

- Project operations may result in minor impacts to wildlife resources;
- Project maintenance may result in minor impacts to wildlife resources; and,
- Project decommissioning may result in moderate impacts to wildlife resources.

4.4.6 Mitigation Measures

The applicant has committed to APMs, and the BLM developed required BMPs that would further reduce impacts to biological resources. Requirements for mitigation would be determined in coordination with micrositing and final design and could include habitat improvement. In California, any mitigation for permanent loss of habitat would be developed to meet the CDCA Plan requirements and approval.

4.4.7 Construction of Full Route Alternative and Subalternative Effects

Appendix 4, Tables 4.4-7 and 4.4-8 summarize disturbance information for each of the full route alternatives individually discussed in the following sections. Descriptions of the impacts common to all alternatives and mitigation common to all alternatives apply and are not repeated here.

The acres of Harwood's eriastrum and Mojave fringe-toed lizard habitat estimated to be impacted based on Project-specific mapping of presumed habitat on the Palo Verde Mesa would likely provide a more accurate assessment of actual acres impacted by alternative (Appendix 4, Table 4.4-5), and these acres identified where impacts may occur have not been subject to micrositing adjustments. However, no similar range-wide assessment of Harwood's eriastrum and Mojave fringe-toed lizard habitat is available. The Project habitat mapping of suitable acres impacted shown in Appendix 4, Table 4.4-8 also applies to the Mojave fringed-toed lizard as the habitats are identical.

4.4.7.1 Proposed Action

Impacts to biological resources from implementation of the Proposed Action would range from negligible to major.

Vegetation

The entire length of the Proposed Action route would parallel the existing DPV1 line and unimproved roads, as well as an adjacent buried pipeline for much of the way. The impacts from past vegetation removal during construction of DPV1 in 1982 is evident, with perhaps limited success of restoration efforts. The Proposed Action would add to this disturbance and loss of vegetation but would not really extend it into otherwise undisturbed areas, since the Project would occur immediately adjacent to existing disturbance areas. Invasive species such as Russian thistle, annual brome grasses, and non-native mustards are present along the existing

linear facilities, limiting the likelihood that the Proposed Action would lead to infestations in areas where these plants are not already present, though the Project may contribute to their increased abundance. The Proposed Action would not affect microphyll wash habitat (Appendix 4, Table 4.4-4). Protected native plants would be avoided or salvaged, and impacts to the sand dune habitat of Harwood's eriastrum would be minimized by following Segments p-17 and p-18. Approximately 0.6 mile of proposed access roads would cross suitable Harwood's eriastrum habitat under the Proposed Action; in total, approximately 3.3 acres of suitable habitat would be impacted by Project activities (Appendix 4, Tables 4.4-5 and 4.4-8). Application of APMs and BMPs would protect the plant from loss of individuals and maintain the ecological processes (e.g., sand transport) that sustain its habitat; therefore, these impacts would be negligible to minor. The Proposed Action would have the least amount of Project mapped suitable acres and modeled acres of impacts to Harwood's eriastrum of all full route alternatives.

The Proposed Action would result in:

- Minor short-term and long-term impacts to native vegetation pending successful restoration;
- Negligible long-term impacts due to facilitating increased abundance of non-native plants; and,
- Minor short- and long-term impacts of ground disturbance on protected and special status plants and plant communities.

Wildlife

Segment p-06 would cross the Kofa NWR. Development of Segment p-06 would disrupt desert bighorn sheep movement and habitat use within and outside the NWR, and incrementally increase habitat fragmentation in an area already impacted by the presence of high-voltage utility and buried pipeline corridors, including the DPV1, the EPNG line, the existing SCS, etc.

Segment p-06 crosses about 25 miles of good quality habitat for the Sonoran desert tortoise and is within an area used by a reintroduced population of the endangered Sonoran pronghorn.

Segments p-10 and p-11 go through Copper Bottom Pass below Cunningham Peak. Although a road, transmission line, and buried pipeline are present through Copper Bottom Pass, APM-BIO-18 (Appendix 2A, Section 2A.4) is required to ensure that construction traffic in the pass is limited to only that which is necessary in order to minimize disturbance to desert bighorn sheep. In addition, APM-BIO-27 (Appendix 2A, Section 2A.4) places seasonal restrictions on construction activities in desert bighorn sheep lambing areas, such as Copper Bottom Pass, to be determined annually by AGFD and BLM.

The proposed crossing of the Colorado River (Segment p-15e) is immediately north of the existing DPV1 crossing. Matching structure spacing and conductor heights with the existing line is expected to reduce the potential for birds to collide with the transmission line in this migratory bird flyway. Transmission lines over agricultural lands present a threat to the many birds that use agricultural lands and the associated water features. In these areas, conductor bundles would be in a horizontal, parallel configuration, and would match existing structure spacing and conductor heights to reduce the potential for bird collisions. On the Palo Verde Mesa, Segment p-17 and Segment p-18 approach the Mule Mountains, where some of the more suitable habitat for the

threatened Mojave desert tortoise is found. Segments p-17 and p-18 avoids the best sand dunes used by the BLM sensitive species Mojave fringe-toed lizard, but crosses through 0.6-mile of habitat. The Proposed Action route parallels other high-voltage utility lines, buried pipeline, and established roads such that access to much of the Proposed Action corridor is already open to non-Project personnel; the exception is on Palo Verde Mesa where only limited access exists.

The Proposed Action would result in:

- Major long-term impacts to the management of the Kofa NWR, and to desert bighorn sheep and Sonoran pronghorn on the refuge;
- Minor short-term impacts to desert bighorn sheep in the Copper Bottom Pass area;
- Negligible long-term impacts to wildlife and habitats by facilitating increased recreational access to remote areas;
- Minor long-term impacts to wildlife habitat (especially Sonoran desert tortoise habitat in Kofa NWR) by contributing to an increase in abundance of non-native plants;
- Negligible short-term impacts to Mojave fringe-toed lizard due to possible mortality by Project activities;
- Negligible short- and long-term impacts to sensitive wildlife species, including nests of migratory birds; and,
- Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines.

4.4.7.2 Alternative 1: I-10 Route

Impacts to biological resources from implementation of Alternative 1 would range from negligible to minor. All proposed APMs and BMPs apply except APM-BIO-18 (Appendix 2A, Section 2A.4) because Alternative 1 does not go through Copper Bottom Pass, and APM/BMP-BIO-19 (Appendix 2A, Section 2A.4) because the crossing of the Colorado River is not adjacent to existing high-voltage lines so matching conductor heights to reduce impacts to migratory birds is not applicable.

Vegetation

Vegetation communities adjacent to and near the existing interstate highway corridor have largely been degraded by long-term impacts associated with easy access off of I-10; and commercial, residential, and agricultural development adjacent to I-10, including the presence of roads, canals, and various utility lines. Evidence of OHV use is present throughout, resulting in damage to and loss of vegetation. The interstate functions as a corridor for dispersal of non-native invasive plants. In California, rare plant alliances, including desert washes, are protected by setbacks of 200 feet. Alternative 1 would impact 0.5 acre of microphyll wash (Appendix 4, Table 4.4-4); however, there would be a 200-foot setback and microphyll washes would be spanned through micrositing. Approximately 5.6 miles of proposed access roads would cross suitable Harwood's eriastrum habitat under Alternative 1; in total, approximately 27.3 acres of suitable habitat would be impacted by Project activities (Appendix 4, Tables 4.4-5 and 4.4-8).Application of APMs and BMPs would protect the plant from loss of individuals and maintain

the ecological processes (e.g., sand transport) that sustain its habitat; therefore, these impacts would be minor to moderate.

Alternative 1 access roads would cross more suitable Harwood's eriastrum habitat than the Proposed Action and the same as Alternatives 2 through 4; would have the same amount of Project-mapped suitable acres of impacts to Harwood's eriastrum as Alternatives 2 through 4; the same amount of modeled acres of impacts to Harwood's eriastrum as Alternatives 3 and 4; but fewer modeled acres of impacts than Alternative 2 (Appendix 4, Tables 4.4-5 and 4.4-8).

The construction of Alternative 1 adjacent to the I-10 corridor, in addition to the current uses, would not alter the current situation regarding the overall degraded condition of vegetation resource. Segments ca-07, ca-09, and x-19 are more likely to encounter Harwood's eriastrum than the Proposed Action. Surveys would be conducted in all disturbance areas and plants would be avoided during construction, but there would likely be some loss of suitable habitat.

Alternative 1 would result in:

- Minor short- and long-term impacts to native vegetation pending successful restoration;
- Minor long-term impacts due to facilitating increased abundance of non-native plants, especially in dune habitats; and,
- Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities.

Wildlife

Alternative 1 goes through passes in the Plomosa Mountains and Dome Rock Mountains that are important wildlife movement corridors, especially for desert bighorn sheep. However, both of these passes are already impacted by I-10, utility lines, and pipelines. On the Palo Verde Mesa, Segments ca-07 and ca-09 cross about 3.5 miles of sand dunes, habitat for the Mojave fringe-toed lizard. Preconstruction exclusion surveys would be conducted to minimize possible mortality; impacts to habitat would recover due to lack of disruption of the sand transport corridor. Given the current status of wildlife populations and habitat along the majority of the Alternative 1 corridor, the additional impacts to wildlife from the development of Alternative 1 would largely be negligible.

In comparison to the Proposed Action, Alternative 1 would have no impact on the Kofa NWR because it would avoid the refuge; would impact only a minor amount of mostly degraded Sonoran desert tortoise habitat; and would not impact the Sonoran pronghorn. Potential impacts to desert bighorn sheep due to habitat fragmentation, impeding animal movement, and interference with lambing grounds would be reduced to negligible levels. The crossing of the Colorado River is not adjacent to the existing DPV1 line, creating an additional collision hazard for birds. Impacts to general wildlife and habitats would be negligible due to existing degraded habitat conditions.

Alternative 1 would result in:

- Negligible impacts to desert bighorn sheep;

- Negligible long-term impacts to wildlife and habitats by facilitating increased recreational access to remote areas;
- Minor short- and long-term impact to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts;
- Negligible short- and long-term impacts to sensitive wildlife species (excluding Mojave fringe-toed lizard), including nests of migratory birds;
- Negligible long-term impacts associated with contributing to an increase in abundance of non-native plants degrading wildlife habitat; and,
- Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines, and additional hazard at the Colorado River crossing.

Subalternatives to Alternative 1 (1A through 1E)

There would be minimal differences in biological resources impacts between the Alternative 1 subalternatives (1A through 1E) and Alternative 1.

4.4.7.3 Alternative 2: BLM Utility Corridor Route

Impacts to biological resources from implementation of Alternative 2 would range from negligible to minor.

Vegetation

Alternative 2, where it is parallel to I-10 and US 95, would have similar impacts to vegetation as described for Alternative 1 following the I-10 corridors. Alternative 2 impacts to vegetation through Copper Bottom Pass would be as described for the Proposed Action.

Alternative 2 on the Palo Verde Mesa is almost twice as long as either the Proposed Action or Alternative 1, adding Segments x-15 and x-16 to the other segments included in Alternative 1. Segments x-15 and x-16 pass through sandy soil habitat, though not active dunes. Together these segments are 3.7 miles in length and intersect approximately 0.8 mile of the *Pleuraphis rigida* (big galleta) Alliance, which would be protected by a 200-foot setback. Alternative 2 would impact 2.6 acre of microphyll wash (Appendix 4, Table 4.4-4); however, there would be a 200-foot setback and microphyll washes would be spanned through micrositing. Approximately 5.6 mile of proposed access roads would cross suitable Harwood's eriastrum habitat under Alternative 2; in total, approximately 27.3 acres of suitable habitat would be impacted by Project activities (Appendix 4, Tables 4.4-5 and 4.4-8).Application of APMs and BMPs would protect the plant from loss of individuals and maintain the ecological processes (e.g., sand transport) that sustain its habitat; therefore, these impacts would be minor to moderate.

Alternative 2 access roads would cross more suitable Harwood's eriastrum habitat than the Proposed Action and the same as Alternatives 1, 3, and 4; would have the same amount of Project mapped suitable acres of impacts to Harwood's eriastrum as Alternatives 1, 3, and 4; and more modeled acres of impacts to Harwood's eriastrum as Alternatives 1, 3, and 4 (Appendix 4, Table 4.4-8).

Surveys for vegetation would be conducted in all disturbance areas and sensitive plants and rare alliances would be avoided. The increase in Project activities on Palo Verde Mesa may also further facilitate the spread of non-native plant species.

Alternative 2 would result in:

- Minor short- and long-term impacts to native vegetation pending successful restoration; Minor long-term impacts due to facilitating increased abundance of non-native plants, especially in dune habitats; and,
- Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities.

Wildlife

As discussed for Alternative 1, wildlife resources associated with Project segments along highways have been impacted in many ways, resulting in reduced populations of most wildlife species. Alternative 2, similar as with Alternative 1, parallels I-10 through the pass in the Plomosa Mountains—an important desert bighorn sheep movement corridor. Alternative 2, similar to the Proposed Action, would go through Copper Bottom Pass below Cunningham Peak, a rugged and remote area used by desert bighorn sheep, including as a lambing area. APM-BIO-18 and APM-BIO-27 (Appendix 2A, Section 2A.4) are intended to minimize disturbance to desert bighorn sheep in the Copper Bottom Pass area.

In comparison to the Proposed Action, Alternative 2 would have no direct impact on the Kofa NWR because the route avoids the refuge and is adjacent to I-10; would have negligible impacts to the Sonoran pronghorn; would impact a minor amount of Sonoran desert tortoise habitat in the Plomosa and Dome Rock mountains; and avoid the more suitable habitat for the Mojave desert tortoise near the Mule Mountains. Due to the increased length of Alternative 2 over that of Alternative 1, the possibility that shifting patches of Mojave fringe-toed lizard habitat may be impacted is increased.

Alternative 2 would result in:

- Minor short-term impacts to desert bighorn sheep in the Copper Bottom Pass area;
- Minor short- and long-term impacts to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts;
- Negligible short- and long-term impacts to sensitive wildlife species (excluding Mojave fringe-toed lizard), including nests of migratory birds;
- Minor long-term impact to wildlife habitat by contributing to an increase in abundance of non-native plants, especially in dune habitat; and,
- Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines.

Subalternatives to Alternative 2 (2A through 2E)

There would be minimal differences in biological resources impacts between the Alternative 2 subalternatives (2A through 2E) and Alternative 2.

4.4.7.4 Alternative 3: Avoidance Route

Impacts to biological resources from implementation of Alternative 3 would range from negligible to major. All APMs and BMPs apply except APM/BMP-BIO-19 (Appendix 2A, Section 2A.4) because the crossing of the Colorado River is not adjacent to existing high-voltage lines so matching conductor heights to reduce impacts to migratory birds is not applicable.

Vegetation

Impacts to vegetation from Alternative 3 would be as described for the Proposed Action from the Delaney Substation to where Alternative 3 would diverge from following the existing DPV1 line and proceed north to the I-10 corridor. Along I-10, Alternative 3 would have the same impacts as described for Alternative 1. When Alternative 3 turns south along the Plomosa Mountains it does not follow an existing utility corridor. Though there are unpaved roads crossing this segment, new, albeit temporary, access roads and work areas would impact existing Sonoran desertscrub communities where similar impacts have not occurred. Disturbance to soils could increase the possibility of spreading non-native plants to the area. Alternative 3 impacts to vegetation are similar to the Proposed Action from US 95 to Copper Bottom Pass.

Alternative 3 turns from Copper Bottom Pass near Cunningham Peak, passing high on the mountain slope into a rugged and remote portion of the Dome Rock Mountains. The area is in largely pristine condition, with few unimproved roads leading to the toe slope of the mountains. Construction of Alternative 3 would remove native vegetation and could facilitate spread of non-native plants into an area that has had little impact from human activities. From the Colorado River crossing to the substation, the impacts of Alternative 3 to vegetation resources are similar to that described for Alternative 1. Alternative 3 would cross 0.5 acre of microphyll wash (Appendix 4, Table 4.4-4); however, there would be a 200-foot setback and microphyll washes would be spanned through micrositing. Approximately 5.6 mile of proposed access roads would cross suitable Harwood's eriastrum habitat under Alternative 3; in total, approximately 27.3 acres of suitable habitat would be impacted by Project activities (Appendix 4, Tables 4.4-5 and 4.4-8).Application of APMs and BMPs would protect the plant from loss of individuals and maintain the ecological processes (e.g., sand transport) that sustain its habitat; therefore, these impacts would be minor to moderate.

Alternative 3 access roads would cross more suitable Harwood's eriastrum habitat than the Proposed Action and the same as Alternatives 1, 2, and 4; would have the same amount of Project mapped suitable acres of impacts to Harwood's eriastrum as Alternatives 1, 2, and 4; but less modeled acres of impacts than Alternative 2 (Appendix 4, Table 4.4-8).

Alternative 3 would result in:

- Moderate short-term impacts to native vegetation due to ground disturbance during construction pending restoration, and moderate long-term impacts to vegetation in areas where no linear facilities and few roads exist;
- Moderate long-term impacts due to facilitating spread and increased abundance of non-native plants into new areas, especially into the Dome Rock Mountains and dune habitats;

- Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities; and,
- Moderate short- and long-term impacts in areas where there are no existing linear facilities and few roads resulting in impacts to near-pristine examples of desert wash communities.

Wildlife

Impacts to wildlife from implementation of Alternative 3 would be similar to effects described for the Proposed Action and Alternative 1, with the exception of Segment x-05 along the west side of the Plomosa Mountains, and Segments cb-01, cb-04, and cb-05 that pass near Cunningham Peak to cross the Dome Rock Mountains.

Segment x-05 passes mostly north-south along the foothills and alluvial fan on the west side of the Plomosa Mountains. Though close to the LTVA, and the presence of numerous unimproved roads, various special status species may occur in the Sonoran desertscrub habitat within the corridor, mostly due to proximity of the Plomosa Mountains. Golden eagle, Sonoran pronghorn, Gila monster, elf owl, gilded flicker, and Lucy's warbler may be present.

Segment cb-01 passes high on the remote, steep mountain slopes of Cunningham Peak. Segment cb-04 crosses the Dome Rock Mountains through largely undisturbed desert wash vegetation that likely provides habitat for special status species such as Sonoran pronghorn, Gila monster, Sonoran desert tortoise, and Lucy's warbler. Segment cb-05 passes between the west side of the Dome Rock Mountains and the Colorado River in an area with very harsh desert conditions and large areas of desert pavement. There are few roads into this area of the Dome Rock Mountains, which is in largely pristine condition. The area is prime desert bighorn sheep habitat, which is often used for lambing grounds. Development of Alternative 3 could facilitate public access that would increase disturbance to wildlife in these remote habitats and may permanently alter the character and function of the area for wildlife, especially desert bighorn sheep.

In comparison to the Proposed Action, Alternative 3 would have no direct impact on the Kofa NWR because the route avoids the refuge and would have reduced impacts to the Sonoran pronghorn. Implementation of Alternative 3 would result in:

- Major long-term impacts to desert bighorn sheep in the Dome Rock Mountains by degrading nearly pristine habitat and facilitating increased recreational access to remote areas;
- Minor short- and long-term impacts to Sonoran pronghorn due to the vicinity to Kofa NWR;
- Minor short- and long-term impacts to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts;
- Negligible short- and long-term impacts to sensitive wildlife species (excluding Mojave fringe-toed lizard), including nests of migratory birds;
- Moderate long-term impact to wildlife habitat by contributing to an increase in abundance of non-native plants into remote areas and dune habitat; and,

- Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines, and additional hazard at the Colorado River.

Subalternatives to Alternative 3 (3A through 3M)

There would be minimal differences in biological resources impacts between the Alternative 3 subalternatives (3A through 3M) and Alternative 3.

4.4.7.5 Alternative 4: Public Lands Emphasis Route

Impacts to biological resources from implementation of Alternative 4 would range from negligible to major.

Vegetation

There is good representation of Sonoran desertscrub communities west of the Delaney Substation, past the agricultural fields and across the alluvial fan of the Eagletail Mountains. The area has been impacted by a buried natural gas pipeline and roads and has scattered invasive species such as red brome and non-native mustards. Alternative 4 continues through another 20 miles of good quality desert habitats to where it turns to parallel I-10. After entering Copper Bottom Pass, the route turns near the head of Johnson Canyon north of Cunningham Peak into a rugged and remote portion of the Dome Rock Mountains. The area is in largely pristine condition, with well represented desert wash vegetation and few unimproved roads leading to the toe slope of the mountains. Development of Alternative 4 may facilitate spread of invasive plant species to this very remote area, which could be exacerbated by increased access to the area by recreationists.

Alternative 4 would cross 0.5 acre of microphyll wash (Appendix 4, Table 4.4-4); however, there would be a 200-foot setback and microphyll washes would be spanned through micrositing. Approximately 5.6 mile of proposed access roads would cross suitable Harwood's eriastrum habitat under Alternative 4; in total, approximately 27.3 acres of suitable habitat would be impacted by Project activities (Appendix 4, Tables 4.4-5 and 4.4-8). Application of APMs and BMPs would protect the plant from loss of individuals and maintain the ecological processes (e.g., sand transport) that sustain its habitat; therefore, these impacts would be minor to moderate. Alternative 4 access roads would cross more suitable Harwood's eriastrum habitat than the Proposed Action and the same as Alternatives 1, 2, and 3; would have the same amount of modeled acres of impacts to Harwood's eriastrum as Alternatives 1 and 3; but fewer modeled acres of impacts than Alternative 2 (Appendix 4, Table 4.4-8).

Alternative 4 would result in:

- Moderate short- and long-term impacts to native vegetation pending restoration, and increased degradation of existing good quality habitats;
- Moderate long-term impacts due to facilitating spread and increased abundance of non-native plants into new areas, especially into the Dome Rock Mountains and dune habitats; and,
- Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities.

Wildlife

Alternative 4 extends across more than 40 miles of desert from north of the Eagletail Mountains to I-10 near the Bear Hills south of the town of Brenda, where there is good representation of quality Sonoran desertscrub vegetation, providing habitat for diverse Sonoran desert biotic communities. In Copper Bottom Pass, in the vicinity of Cunningham Peak at the head of Johnson Canyon, the area is in largely pristine condition, with few unimproved roads, providing prime desert bighorn sheep habitat that is often used for lambing grounds. Because Alternative 4 would bring human presence and noise closer to a developed wildlife water in Johnson Canyon used by desert bighorn sheep and mule deer, some animals may experience more stress as they seek water elsewhere. Development of Alternative 4 could lead to degraded habitat conditions by facilitating the spread of non-native vegetation, increase public access into remote habitats resulting in disturbance to wildlife, and may permanently alter the character and function of the area for wildlife, especially desert bighorn sheep.

Because Alternative 4 leaves the existing DPV1 corridor and crosses into near-pristine desert bighorn sheep habitat, the impacts to wildlife associated with Alternative 4 are substantially greater than the Proposed Action.

Implementation of Alternative 4 would result in:

- Major long-term impacts to desert bighorn sheep in the Dome Rock Mountains by degrading nearly pristine habitat and facilitating increased recreational access to remote areas;
- Minor short-term impacts to Sonoran pronghorn south of I-10;
- Minor short- and long-term impacts to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts;
- Negligible short- and long-term impacts to sensitive wildlife species (excluding Mojave fringe-toed lizard), including nests of migratory birds;
- Moderate long-term impact to wildlife habitat by contributing to an increase in abundance of non-native plants into remote areas and dune habitat; and,
- Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines.

Subalternatives to Alternative 4 (4A through 4P)

There would be minimal differences in impacts between the Alternative 4 subalternatives (4A through 4P) and Alternative 4. However, subalternative 4D passes along the foothills and alluvial fan on the west side of the Plomosa Mountains. Various special status species may occur in the Sonoran desertscrub habitat within the corridor, mostly due to its proximity to the Plomosa Mountains. This subalternative would replace Segment x-06 that follows the east perimeter of the La Posa LTVA, an area disturbed by persistent human presence and subject to high levels of recreation use, including OHV use. Implementing Subalternative 4D would result in additional impacts to vegetation and wildlife resources than would occur under Alternative 4.

4.4.7.6 Agency Preferred Alternative

Vegetation

As with Alternative 1, vegetation communities adjacent and near existing highway corridors have largely been degraded by long-term impacts associated with easy access off the highways for recreation; commercial, residential, and agricultural development adjacent to I-10, including the presence of roads, canals, and various utility lines. Evidence of OHV use is present throughout, resulting in damage to and loss of vegetation. Highway corridors function as dispersal routes for non-native invasive plants. The Preferred Alternative, where it is parallel to I-10, would have similar impacts to vegetation as described for Alternative 1 following the I-10 corridors. The impacts to vegetation under the Preferred Alternative through Copper Bottom Pass would be as described for the Proposed Action.

The Preferred Alternative is almost twice as long as either the Proposed Action or Alternative 1 on the Palo Verde Mesa. Segments x-15 and x-16 pass through sandy soil habitat of the big galleta Alliance, though not active dunes. Together these segments intersect more than 1 mile of the big galleta Alliance, which would be protected by a 200-foot setback. The impacts of the Preferred Alternative on the Palo Verde Mesa would be similar to that described for Alternative 1, plus the added impacts associated with Segments x-15 and x-16; this increases the likeihood that shifting pockets of suitable Harwood's eriastrum habitat or rare plant alliances may be impacted.

The Preferred Alternative would have the same amount of Project mapped suitable acres of impacts to Harwood's eriastrum as Alternatives 1, 3, and 4; more modeled acres of impacts to Harwood's eriastrum as Alternatives 1, 3, and 4 (Appendix 4, Table 4.4-8).

However, surveys for vegetation would be conducted in all disturbance areas and sensitive plants and rare alliances would be avoided. The increase in Project activities on Palo Verde Mesa may also further facilitate the spread of non-native plant species.

The Preferred Alternative would result in:

- Minor short- and long-term impacts to native vegetation pending successful restoration; Minor long-term impacts due to facilitating increased abundance of non-native plants, especially in dune habitats; and,
- Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities.

Wildlife

As with Alternative 1, wildlife resources associated with Project segments along highways have been impacted in many ways, resulting in reduced populations of most wildlife species. Similar to Alternative 1, the Preferred Alternative parallels I-10 through the pass in the Plomosa Mountains—an important desert bighorn sheep movement corridor. A portion of the Preferred Alternative also passes along the foothills and alluvial fan on the west side of the Plomosa Mountains. Various special status species may occur in the Sonoran desertscrub habitat within the corridor, mostly due to its proximity to the Plomosa Mountains.

The Preferred Alternative, similar to the Proposed Action, would go through Copper Bottom Pass below Cunningham Peak, a rugged and remote area used by desert bighorn sheep, including as a lambing area. APM-BIO-18 and APM-BIO-27 (Appendix 2A, Section 2A.4) are intended to minimize disturbance to desert bighorn sheep in the Copper Bottom Pass area.

In comparison to the Proposed Action, the Preferred Alternative would have no direct impact on the Kofa NWR because the route avoids the refuge and is adjacent to I-10; would have reduced impacts to the Sonoran pronghorn; would impact a minor amount of Sonoran desert tortoise habitat in the Plomosa and Dome Rock mountains; and avoid the more suitable habitat for the Mojave desert tortoise near the Mule Mountains. Due to the increased length of the Preferred Alternative over that of Alternative 1, the possibility that shifting patches of Mojave fringe-toed lizard habitat may be impacted is increased.

The Preferred Alternative would result in:

- Minor short-term impacts to desert bighorn sheep in the Copper Bottom Pass area;
- Minor short- and long-term impacts to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts;
- Negligible short- and long-term impacts to sensitive wildlife species (excluding Mojave fringe-toed lizard), including nests of migratory birds;
- Minor long-term impact to wildlife habitat by contributing to an increase in abundance of non-native plants, especially in dune habitat; and,
- Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines.

4.4.8 Residual Impacts

APMs and BPMs would not alleviate all environmental impacts to vegetation and wildlife. Residual impacts of this Project would include a permanent loss of vegetation due to the development of access roads, structure pads, and other permanent facilities resulting in a loss of wildlife breeding and foraging habitat. The likelihood of increased vehicle use on access roads and increased access into remote habitats could result in disturbance to wildlife. Additional residual impacts would result from the loss of primary plant production due to clearing of temporary work areas pending restoration efforts. In harsh desert conditions, the success of restoration often depends on rainfall, and slow growing vegetation may take many years (or decades) to achieve stature and function prior to ground clearing. The residual impacts to biological resources are not expected to be major, dependent to some degree on the selected route.

4.4.9 CDCA Compliance

Compliance with the CDCA is achieved through consistency with CMAs. Numerous LUPA CMAs have been determined to be applicable to the Project relative to the conservation of biological resources (Appendix 2C). Compliance with the CMAs is achieved through

implementation of Project-specific APMs/BMPs addressing biological and vegetation resources (Appendix 2A, Section 2A.4).

Specific CMAs address Harwood's eriastrum and its dune habitat. These measures include implementing an avoidance setback of 0.25-mile from all occurrences of the plant to protect ecological processes and establishing a limit (cap) for impacts to suitable habitat to a maximum of 1 percent throughout all BLM lands included within the CDCA. However, based on the distribution of potentially suitable habitat on the Palo Verde Mesa, Harwood's eriastrum is expected to be present along all Project alternatives crossing the Palo Verde Mesa. Therefore, if Project design is not consistent with CMA specifications, exceptions can be allowed through an amendment to the CDCA Plan, as long as the goals established by the LUPA are met. Since it can be shown that the linear nature of the Project can avoid impacts to the ecological processes (i.e., sand movement) that support plant populations, and meet the goal of promotion of the ecological processes, the CDCA Plan is further amended to allow Project construction to proceed. Specific measures for the conservation on Harwood's eriastrum are required under the conditions of this amendment that are implemented through BMP-BIO-31 (Appendix 2A, Section 2A.4).

Compliance with biological CMAs is demonstrated in Appendix 2C, with details of applicable APMs/BMPs provided in Appendix 2A, Section 2A.4.

4.4.10 Unavoidable Adverse Effects

Some environmental impacts resulting from the Project would be unavoidable. These impacts include increased mortality to avian species due to collisions with the transmission line and structure guy wires, and facilitating predation of small mammals, reptiles, and invertebrates by corvids and raptors that use transmission lines and structures as hunting perches. Mortality of fossorial wildlife is expected and mostly unavoidable during site clearing, and individual animals could be lost due to vehicle strikes during construction and maintenance activities. These unavoidable adverse effects to biological resources are not expected to be major.

4.4.11 Cumulative Effects

Development of the Project, in conjunction with other past development and current and foreseeable future projects (Appendix 3, Table 3.12-2), would contribute incrementally to the ongoing fragmentation and loss of natural habitats, increased mortality for some wildlife species, increased spread and abundance of non-native plants, increased noise/vibration during construction activities, and increased human presence in remote areas. Cumulative effects to vegetation and wildlife would be additive and proportional to the amount of ground disturbance, and loss and degradation of habitat for each individual project. All Project alternatives would have similar cumulative impacts, though the degree of impact could vary depending on the selected segments (e.g., a new corridor in an otherwise near pristine area). Cumulative impacts on biological resources would be minimized through surveys, design, and engineering, as well as APMs and BMPs. Similar measures would likely be required for most future projects.

Where linear utilities are collocated, the cumulative impacts are generally less than when utility corridors follow separate routes. However, on the Palo Verde Mesa, new structures in addition to

existing power lines, the Colorado River Substation, and solar energy development can cumulatively impact dune systems due to subtle changes in wind patterns and structures interrupting sand transport across the mesa.

In the case of the Kofa NWR, the proposed development of Segment p-06 would more than double the width of the existing utilities corridor resulting in greater fragmentation of habitat for desert bighorn sheep, Sonoran pronghorn, Sonoran desert tortoise, and other wildlife (USFWS 2017). Human activity associated with construction and maintenance, habitat disturbance and destruction, and visual separation caused by the transmission line can discourage wildlife from crossing the disturbed area and lead to greater fragmentation and isolation of the north part of the refuge from the remainder. The cumulative and incremental impacts of the Project in addition to the existing utilities may pose the greatest impact to the refuge (USFWS 2017).

The BLM sensitive plant species Harwood's eriastrum is restricted to active windblown sand dune habitat. The DRECP LUPA CMAs for sensitive plant species apply to Harwood's eriastrum, and include a cumulative limit (i.e., cap) for impacts to suitable habitat to a maximum of 1 percent from all projects throughout all BLM lands included within the DRECP. According to the DRECP distribution model for Harwood's eriastrum, there is 288,404 acres of Harwood's eriastrum habitat on BLM lands. Using the same model, Project-related ground disturbance on the Palo Verde Mesa with the implementation of Alternative 2 (the alternative with the greatest potential to impact Harwood's eriastrum) were calculated to potentially disturb 60.2 acres of Harwood's eriastrum habitat. Maximum Project-related impacts based on the DRECP model would constitute 0.02 percent of Harwood's eriastrum distribution range-wide, and this estimate for Project impact acres does not consider additional reduction in area of impact that would be achieved through micrositing. Other projects have occurred in Harwood's eriastrum modeled habitat on the Palo Verde Mesa and Chuckwalla Valley, and new structures in addition to existing power lines (e.g., DPV1), the Colorado River Substation, and solar energy development (e.g., Desert Quartzite Solar and gen-tie line) can cumulatively impact dune systems due to subtle changes in wind patterns and structures interrupting or altering sand transport across the mesa. Additional projects approved by BLM within Chuckwalla Valley together with the proposed Project may impact up to 373.8 acres of DRECP modeled habitat within Chuckwalla Valley; a total of 0.36 percent of modeled habitat in Chuckwalla Valley or 0.12 percent range wide. The cumulative impact cap of 1 percent to DRECP modeled Harwood's eriastrum habitat is applied to the species' entire distribution on BLM lands. The sum of impacted habitat from these various projects on BLM land would not collectively approach the 1 percent cap (i.e., 2,884 acres) (impacts on private land to not contribute to calculation of the impact cap).

The Mojave fringe-toed lizard, also restricted to wind-blown sand habitats, would lose up to 60.2 acres of habitat due to Project implementation. Other BLM-approved projects within the Chuckwalla Valley resulted in loss of DRECP modeled habitat for the Mojave fringe-toed lizard, such as the Colorado River Substation (77.3 acres), Desert Sunlight (1,293.4 acres), and Genesis (1,035.2 acres), and together with the proposed Project (60.2 acres) would impact a total of 2,465.7 acres of DRECP modeled habitat, or 1.9 percent of all modeled Mojave fringe-toed lizard habitat in Chuckwalla Valley (i.e., 132,117.6 acres).

Overall the past, present, and reasonably foreseeable future actions in the CEA are expected to result in:

- Long-term minor cumulative impacts where the proposed segments would be collocated or near past/present disturbances and/or existing linear facilities with some exceptions.
- Major, long-term cumulative impacts where Segment cb-01, Segment cb-02, and Segment cb-04 would enter remote and near-pristine areas where existing linear facilities are not present.
- Major, long-term cumulative impacts would occur were Segment p-06 would be collocated with existing utility corridors across the Kofa NWR. The cumulative effect of expanding the width of the utility corridor would conflict with the purposes for which the NWR was established by interfering with wildlife movement and habitat use.

Overall, the contribution by the Project to cumulative impacts to biological resources is dependent on the selected route segments. Routes through the Kofa NWR (Segment p-06), and through the remote, near pristine areas of the Dome Rock Mountains (Segments cb-01, cb-02, cb-04) would result in a greater contribution to cumulative impacts because these segments would result in greater disruption to wildlife than previously disturbed routes where wildlife has been exposed to persistent disturbances, habitat has been degraded, and animal populations are often reduced. Such contributions would result in significant degradation of biological resources that could not be fully mitigated, and this would be a more notable loss of habitat because past and present projects have already limited the availability of pristine landscapes with uncompromised biological conditions. Cumulatively, the indirect effects of this Project that facilitate human access into remote landscapes has a greater consequence than the direct impact to habitat and would make a negligible contribution to the total past, present, and reasonably foreseeable future disturbance in the CEA.

While many cumulative impacts to wildlife are foreseeable, the addition of the Project itself (excluding the Kofa NWR and pristine areas of the Dome Rock Mountains) when combined with other past, present, and reasonably foreseeable future actions, would not be the cause of a significant degradation of wildlife resources or affect the potential for wildlife resources, including special status species, to sustain current population levels. The Project's relatively short construction period (e.g., duration of disturbance), limited acres of permanent habitat loss, and implementation of all APMs/BMPs would be expected to result in generally minor effects limited to individual plants and animals within a localized area (i.e., no measurable population level impacts). The degree of change on a cumulative basis would be negligible once mitigation measures have been implemented and disturbed areas start to heal.

4.4.12 Irreversible and Irretrievable Commitment of Resources

4.4.12.1 Vegetation Communities

Environmental impacts that have irreversible negative effects on vegetation are situations where vegetation and topsoil are impacted and not restored. In most cases, reclamation efforts would be made, and irreversible impacts to vegetation would be minor, including unavoidable adverse impacts and residual impacts.

In areas of structure foundations, access roads, and SCS construction, vegetation communities and their habitat (topsoil) would be destroyed, but these areas would be minimal in extent, and vegetation community loss minimal relative to the acreage of each community in the region and would focus on low-sensitivity or low-value communities. Vegetation would take many decades to recover in such locations and may never recover under current climate regimes without soil nutrient enhancements and multiple seedings.

4.4.12.2 Special Status Species

Although environments of special status species throughout the analysis area have been recognized and would be avoided to the greatest extent, avoidance of every individual of all special status species is unlikely. Where individuals would be impacted, reclamation should mitigate such impacts, but relocation to suboptimal habitats or inadequate habitat reclamation could result in permanent declines for the species in those locations.

4.4.12.3 Noxious Weeds

Despite reclamation and control efforts, introduction and colonization of noxious weeds and other exotic invasive plant species could occur and persist in some areas.

4.4.12.4 Wildlife

Irreversible and irretrievable commitment of resources would occur in cases of wildlife mortality due to collisions with construction equipment, transmission lines, or structures. No other irreversible and/or irretrievable commitments of wildlife would occur.

4.4.13 Relationship of Short-term Uses and Long-term Productivity

4.4.13.1 Vegetation Communities

The productivity or function of vegetation would be affected by both short- and long-term impacts.

Short-term impacts to vegetation communities would be present until reclamation is conducted, resulting in short-term production loss. Following reclamation, short-term impact effects would be alleviated to vegetation communities and long-term productivity would be reestablished. However, even when vegetation is established during reclamation efforts, the composition of plant species in the recovery area is often different than the original vegetation community. Typically, grasses establish early on, whereas shrubs take much longer to reestablish. Because of the desert environment, reclamation and revegetation to pre-disturbance conditions is extremely difficult, if not impossible. Reclamation of herbaceous vegetation (e.g., perennial native grasses) should take less than 5 years, depending on weather during that time. Long-term establishment of native woody species (e.g., shrubs and riparian trees) would take longer periods of time, from 5 to 20 years to restore long-term woody vegetation productivity. Relative to short-term impacts that would include both short-term and long-term reclamation of native vegetation production, permanent loss of vegetation communities would be minimal in spatial scale. Vegetation of semi-arid regions generally takes years (herbaceous) to decades (woody) to recover from

disturbances that impact the aboveground plants themselves, but not the topsoil. Such recovery is very dependent on rainfall and temperature conditions during the recovery period.

4.4.13.2 Special Status Species

A Reclamation, Vegetation, and Monitoring Plan (Appendix 2B, Section 2B.10) would be prepared to address the reconstruction of disturbed ecosystems by returning the land to a stable and productive condition. If reclamation and relocation methods are employed for any special status plant species, the short-term impacts would be during the reclamation activities. Productivity of such plants would be reduced in the short-term but would be unaffected in the long-term once such plants have become reestablished. Permanent impacts to those plant species (individuals) would be based on survival of transplanted individuals, and persistence of restored habitat. Long-term loss of productivity would result if such plants do not survive, or suffer reduced growth following relocation. Given the importance of special status species, all efforts would be made to ensure the survival and continued productivity levels of such plants.

The long-term loss of productivity related to Project activities to special status wildlife species would be similar as discussed for common wildlife species, below. The APMs and BMPs identified for general wildlife would apply to special status wildlife species minimizing Project-related impacts.

4.4.13.3 Noxious Weeds

The introduction and colonization of noxious weeds and other exotic invasive plant species would be minimized with implementation of monitoring and control.

4.4.13.4 Wildlife

Construction of the Project would result in some short- and long-term impacts to wildlife resources and habitat. During construction, breeding and foraging within the area may decrease due to temporary habitat loss, construction noise, and human presence. In addition, there may be increased mortality due to collisions with construction equipment. The decrease in productivity during construction would be expected to be short-term; breeding and foraging within the Project ROW would commence following construction activities. Long-term productivity of some species may be impacted by collisions with power lines, as well as by long-term habitat loss, and increased mortality due to predation. Some predator species, especially raptors and corvids, would benefit from the increased perches provided by the transmission line.

4.5 CULTURAL RESOURCES

4.5.1 Introduction

This analysis of cultural resources provides an overview of potential direct and indirect impacts by the construction, operation, maintenance, and decommissioning of the Project. As stated in the PA, given the length of time of the Project's operational life before being decommissioned, decommissioning is considered as a separate undertaking to be addressed by future Section 106 analyses, but is included as part of this NEPA analysis. As noted in the PA, the ROW would stipulate, and the BLM shall ensure, that decommissioning would be considered a new action for

Section 106 review, and that historic properties potentially affected by decommissioning would be considered in accordance with the pertinent laws, regulations, and policies extant at the time.

Cultural resources that demonstrate integrity and significance under Criteria A, B, C, and/or D of the NRHP, are further classified as *historic properties*. Those cultural resources that have not been previously evaluated for eligibility for the NRHP are treated as eligible for the purposes of this analysis.

The BLM is using the substantial available Class I data, sensitivity model, and ethnographic information, including feedback from the tribes, as baseline data to inform the analysis of alternatives. This information has been summarized in tabular format in Section 4.5.4.2, as well as in Appendix 4 Tables 4.5-1 through 4.5-4 and provides the foundation for the impact analysis. A Class III inventory would be conducted on the selected route prior to issuance of any NTP for the Project per Section 106 requirements.

4.5.2 Methods for Analysis

4.5.2.1 Analysis Area

The analysis for the Project consists of areas where direct effects to cultural resources may occur. For the purposes of this discussion "analysis area" is defined as a 200-foot-wide corridor where direct effects are projected to occur.

In addition to direct impacts, indirect impacts to cultural resources as a result of the Project may occur, which could include visual, atmospheric, and auditory effects. Indirect atmospheric and auditory effects may occur in an area measuring 0.5-mile from each Action Alternative. From a visual standpoint, potential indirect effects to cultural resources were delineated to include 5 miles on either side of the Proposed Action and Action Alternatives. In certain situations, the 5-mile visual analysis area was adjusted based on the presence of topography that restricts the viewshed. The analysis identifies historic properties within the indirect visual effects analysis area whose character-defining properties could be adversely impacted.

4.5.2.2 Assumptions

The cultural resources data for this analysis are based on the results of Class I baseline data and ethnographic information; additional Class III survey data was gathered for Segments p-17 and p-18, and a portion of Segment p-16 in California (Gardiner et al. 2018). Based on the scope of the Project, the BLM has determined that the development of a Project-specific PA in consultation with interested Indian tribes, land-managing and permitting agencies, and other consulting parties is required (Appendix 2D). The Section 106 process is on-going; additional impacts may be identified through PA consultation efforts.

The PA would refine the direct and indirect APE based on design plans for the selected alternative. The Project's direct effects APE, defined as a corridor along the selected alternative where the construction of Project elements such as structures, access and spur roads, and other ancillary elements would occur, would be intensively investigated at the Class III survey level and all cultural resources evaluated per NRHP criteria.

Potential adverse effects to historic properties would be resolved in accordance with the provisions of the PA and specific Historic Property Treatment Plans (HPTPs). Avoidance of cultural resources by final design and construction would be the preferred adverse effect resolution measure.

Several approaches to the analysis of direct and indirect impacts to cultural resources are presented in this section. These consist of:

- Amount of short- and long-term disturbance within the 200-foot-wide analysis area corridor (direct effect);
- Number of structures within the 200-foot-wide analysis area corridor (indirect visual effect);
- Number of known historic properties within the 200-foot-wide analysis area (direct effect);
- Number of historic properties projected to occur within the 200-foot-wide analysis area corridor (direct effect);
- In the subalternative analysis, the acreage of previous Class III inventory survey is presented to provide comparable discussion of site density and survey coverage; and,
- Number and type of known locations of concern to Indian tribes within indirect effect analysis areas.

4.5.2.3 Environmental Effect Indicators, Magnitude, and Duration

The following impact indicators (and impact magnitude duration and definitions in Table 4-3) considered to constitute major impacts to cultural resources if they result from the construction, operation, maintenance, or decommissioning of the Project:

- Damage to or loss of a historic property that is listed, or eligible for listing, on the NRHP, Arizona Register of Historic Places (ARHP), or California Register of Historic Resources (CRHR);
- An activity would directly or indirectly alter the characteristics of the historic property that qualify it for inclusion in the NRHP, ARHP, or CRHR or impact its aspects of integrity (location, design, setting, materials, workmanship, feeling, or association);
- Loss or degradation would also include cases in which access to the historic property is restricted for future use (i.e., a sacred site);
- Increased access to historic properties that increases potential for vandalism or unauthorized collecting;
- A substantial increase in the potential for erosion or other natural processes that could affect historic properties;
- Increased deterioration of a historic property, except where such deterioration is a recognized quality of a property of religious and cultural significance to an Indian tribe; and,

- Disturbance of any human remains, including those interred outside of formal cemeteries.

Impact magnitude and duration definitions specific to cultural resources are defined in Table 4-3.

Table 4-3 Cultural Resources Impact Magnitude and Duration Definitions

ATTRIBUTE OF IMPACT		DESCRIPTION SPECIFIC TO CULTURAL RESOURCES
Magnitude	No impact	None
	Negligible	No measurable change to the current condition of cultural resources would result from Project construction, operation, maintenance, or decommissioning. There would be no effect to the existing NRHP/ARHP/CRHR qualities of individual historic properties.
	Minor	There would be a small, but measurable change to the current condition of historic properties as a result of Project construction, operation, maintenance, or decommissioning. While a change to a historic property would occur, it would not affect any of the NRHP/ARHP/CRHR qualities of individual historic properties, and the eligibility of the property to the NRHP/ARHP/CRHR would not be altered.
Magnitude	Moderate	An easily discernable and measurable change to the existing NRHP/ARHP/CRHR qualities of historic properties would occur as a result of Project construction, operation, maintenance, or decommissioning. While the existing qualities of an NRHP/ARHP/CRHR property may be diminished, it would not be to a degree that the properties' NRHP/ARHP/CRHR eligibility would be altered.
	Major	A large, easily measurable change in the current conditions would result in significant impacts to historic properties as a result of Project construction, operation, maintenance, and decommissioning and would substantially alter the NRHP/ARHP/CRHR qualities and eligibility status of individual historic properties.
Duration	Temporary	Limited to active construction or maintenance.
	Short-term	During construction (1.5 to 2 years), up to 10 years.
	Long-term	More than 10 years.

4.5.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. Historic properties would not be affected by the Project from any forms of ground disturbance. Because no access improvements would be made, the risk of damage to historic properties associated with vehicular access to areas currently without roads would not change. Project-related support structures and other

facilities would not be constructed, so resources sensitive to visual change would not be affected. Current conditions in the analysis area would continue under the No Action Alternative and there would be no changes that would alter historic properties beyond current conditions. The Project Area would remain undisturbed unless unrelated actions occur.

4.5.4 Construction of Action Alternative Segments

4.5.4.1 Direct and Indirect Effects Common to All Action Alternatives

Ground disturbance during construction is expected with all Action Alternatives and may result in the damage or loss of historic properties; however, the number and types of resources affected would vary depending on the individual alternative. Historic properties would be avoided by the Project as the primary means of precluding impacts. The primary contributor of permanent ground disturbance would be related to structure and SCS construction, as well as the construction of/improvements to access and spur roads. Temporary disturbance may also have direct effects to historic properties and would be related to temporary use areas utilized during Project construction, such as staging areas that would be reclaimed following construction.

Specific impacts to historic properties are unknown until Class III identification studies and indirect effect analyses of the selected route are completed, and additional information regarding engineering design is available. As a result, evidence is currently insufficient to state specific direct or indirect impacts to particular historic properties or to discuss specific measures to resolve potential effects to those properties.

General measures to resolve potential adverse direct and indirect effects to historic properties as a result of Project construction would be contained in the PA, and specific measures would be outlined in HPTPs. The HPTPs would be developed following Class III survey identification efforts following the signing of the ROD. Avoidance of historic properties by final design and construction would be the preferred measure for the resolution of potential direct impacts.

With the exceptions of Segments p-17, p-18, qs-01, x-10, and ca-09, which are discussed in Section 4.5.7, direct impacts due to construction could range between negligible (if eligible sites could be avoided by Project design) and major (if eligible sites could not be avoided by Project design). With the exception of the five noted segments, the range of direct impacts due to construction and the resolution of potential adverse effects are common to all segments; therefore, the impacts and resolution are not repeated for the segment-specific effects.

Indirect effects to historic properties could occur in areas where the construction of new roads into the Project Area would provide improved access into previously inaccessible areas. Improved access could lead to site damage by off-road vehicles and recreational use of these areas. Such damage could consist of vehicular damage to surface archaeological sites, and vandalism to sensitive areas where rock art is present. Measures to resolve potential adverse effects to historic properties as a result of improved access would be included in the PA and the ROD.

Indirect visual impacts could occur from the presence of structures in sight of NRHP-listed historic properties or properties eligible for inclusion in the NRHP under Criterion A, B, or C by altering the setting of the properties. The historic properties affected would vary by alternative.

Resolution measures to minimize the potential adverse effects of visual intrusions would be contained in the PA and HPTPs and implemented by Project design. For example, during Project design, support structures may be positioned so that they are not visible from the historic properties sensitive to visual intrusion.

Site types that are known to occur in the Project Area and known to be potentially sensitive to visual impacts include prehistoric trails, petroglyph sites, and intaglios. If sites of this type exhibit a high degree of integrity of setting, feeling, and association, and also qualify as NRHP-eligible historic properties, an assessment of indirect visual effects of the Project features (such as transmission line structures and access roads) on their NRHP qualities would be required and specified in HPTPs.

Additionally, other historic properties sensitive to indirect effects may be identified by future Class III survey field work of the direct effects analysis area and/or future studies of indirect effects to historic properties in the indirect effects analysis area. When identified, these properties would be subject to additional analysis to be specified in HPTPs.

The range of indirect impacts outlined above, and the resolution of potential adverse indirect effects is common to all segments; therefore, these are not repeated for the segment-specific effects.

4.5.4.2 Direct and Indirect Segment-specific Effects

Table 4-4 presents known cultural resources data from a 200-foot analysis corridor defined as the "direct effects analysis area" for the purposes of this document. The extent of previous cultural resources survey, counts of known historic properties, counts of cultural resources for which NRHP eligibility is unknown, and projections of total numbers of historic properties and sites of undetermined eligibility is presented by segment.

For analysis purposes, minimum survey coverage of 25 percent or more is considered to be adequate to estimate the projected number of cultural resources by eligibility category for each Project segment. In cases where survey coverage of at least 25 percent can be demonstrated with negative findings, the projected sensitivity for cultural resources is considered to be low. However, this does not take into account potential environmental variations that may affect the distribution of cultural resources on the landscape per segment.

Table 4-4 Known Survey and Anticipated Cultural Resources in Segments

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED / UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
PROPOSED ACTION SEGMENTS							
p-01	643.2	46.7	3.3	2	7	0.7/4	2.3/15
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
p-04	115.7	26.0	23.3	2	1	6.7/8	3.3/4
p-05	68.0	17.9	24.8	1	0	16.5/11	0.0/0
p-06	865.9	23.8	8.3	4	2	7.3/63	1.0/8
p-07	51.6	28.3	34.2	1	4	6.8/4	27.4/14
p-08	16.6	5.6	17.9	0	0	0.0/0	0.0/0
p-09	168.0	77.4	1.5	0	2	0.0/0	1.5/3
p-10	28.3	62.9	5.6	0	1	0.0/0	5.6/2
p-11	100.1	61.4	3.3	0	2	0.0/0	3.3/3
p-12	64.2	9.8	0.0	0	0	0.0/0	0.0/0
p-13	84.0	97.5	7.3	2	0	2.4/2	0.0/0
p-14	23.1	75.2	23.1	0	0	0.0/0	0.0/0
p-15e	68.5	31.1	14.1	0	3	0.0/0	14.1/10
p-15w	161.5	32.4	15.3	0	8	0.0/0	15.3/25
p-16	116.1	14.6	47.3	0	5	0.0/0	29.6/34
p-17	71.2	100	35.1	2	7	2.8/2	9.8/7
p-18	62.9	100	22.3	1	7	1.6/1	11.1/7
ACTION ALTERNATIVE SEGMENTS							
d-01	612.8	5.7	5.7	0	2	0.0/0	5.7/35
i-01	205.0	10.3	9.4	0	2	0.0/0	9.4/19

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED / UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
i-02	77.5	0.0	0.0	0	0	0.0/0	0.0/0
i-03	488.1	4.2	19.4	1	3	4.9/24	14.6/71
i-04	256.1	1.9	0.0	0	0	0.0/0	0.0/0
in-01	337.5	2.0	30.3	2	0	30.3/102	0.0/0
x-01	195.1	2.0	100.0	0	0	0.0/0	0.0/0
x-02a	80.4	0.0	0.0	0	0	0.0/0	0.0/0
x-02b	84.2	4.4	0.0	0	0	0.0/0	0.0/0
x-03	137.3	1.7	0.0	0	0	0.0/0	0.0/0
x-04	549.7	4.4	14.1	0	1	0.0/0	4.1/23
i-05	69.6	36.3	4.0	0	1	0.0/0	4.0/3
qn-01	15.1	89.6	22.2	1	1	7.4/1	7.4/1
qn-02	263.3	56.6	4.7	3	1	2.0/5	0.7/2
qs-01	75.1	94.1	0.0	0	0	0.0/0	0.0/0
qs-02	118.0	38.4	11.0	1	0	2.2/3	0.0/0
x-05	248.9	2.4	41.7	1	0	41.7/104	0.0/0
x-06	225.1	23.7	11.2	3	2	5.6/13	3.7/8
x-07	188.2	3.1	0.8	0	6	0.0/0	105.3/198
cb-01	77.9	4.8	0.0	0	0	0.0/0	0.0/0
cb-02	81.6	38.5	3.2	0	0	0.0/0	0.0/0
cb-03	106	15.6	12.0	1	0	6.0/6	0.0/0
cb-04	45.7	45.2	14.6	0	3	0.0/0	14.6/7
cb-05	107.9	8.7	0.0	0	0	0.0/0	0.0/0
cb-06	46.9	0.3	0.0	0	0	0.0/0	0.0/0
i-06	176.2	37.7	1.5	0	0	0.0/0	0.0/0
i-07	154.7	33.3	7.8	0	3	0.0/0	5.8/9

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED / UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
i-08s	32.5	28.9	0.0	0	0	0.0/0	0.0/0
x-08	32.4	23.5	13.2	1	0	13.2/4	0.0/0
ca-01	162.2	2.0	272.7	0	9	0.0/0	272.7/442
ca-02	82.8	10.1	35.7	0	3	0.0/0	35.7/30
ca-04	9.4	21.3	0.0	0	0	0.0/0	0.0/0
ca-05	161.9	3.4	109.1	0	6	0.0/0	109.1/177
ca-06	64.1	33.1	4.7	0	1	0.0/0	4.7/3
ca-07	74.7	70.4	3.2	0	0	0.0/0	0.0/0
ca-09	63.1	100	3.2	0	0	0.0/0	0.0/0
cb-10	46.8	14.1	0.0	0	0	0.0/0	0.0/0
x-09	19.8	30.3	0.0	0	0	0.0/0	0.0/0
x-10	31.1	60.8	0.0	0	0	0.0/0	0.0/0
x-11	51.7	1.5	125.0	0	1	0.0/0	125.0/65
x-12	30.7	4.9	133.3	0	2	0.0/0	133.3/41
x-13	48.7	3.3	62.5	0	1	0.0/0	62.5/30
x-15	35.6	62.9	0.0	0	0	0.0/0	0.0/0
x-16	57.3	13.3	26.3	0	1	13.2/8	13.2/8
x-19	24.2	100.0	16.5	0	3	0.0/0	12.4/3
SCS DISTRIBUTION LINE							
12kV Line[3]	7.6	5.3	0.0	0	0	0.0/0	0.0/0

Note: See Appendix 4, Section 4.5 for a discussion of how the density of projected sites was calculated.

[1]Density of known sites/100 acres includes sites that are previously recommended/determined ineligible for listing in the NRHP.

[2] (/) is used in this column to indicate a separation of data values.

[3]12kV Line corridor is 20-ft. wide.

4.5.5 Operations, Maintenance, and Decommissioning

Though most impacts to historic properties are expected to occur in association with construction, some continuing project-related activities would affect historic properties.

The maintenance and operating activities would have the potential to affect historic properties if they take place in sensitive areas identified by Class III survey. Areas requiring cultural resources monitoring during these activities would be identified and discussed in the PA. No Project activities requiring new ground disturbance would proceed without a cultural resources Class III survey to identify and evaluate any potential historic properties that may be present.

In addition, new roads established to support construction may result in increased access into areas that were previously inaccessible and/or used only intermittently. This increased access could result in unanticipated adverse effects to, or vandalism of, historic properties. Measures to resolve potential adverse effects to historic properties as a result of improved access would be included in the PA and the ROD.

Impacts associated with decommissioning would be similar to those identified for construction of the Proposed Action or Action Alternatives. The ROW would stipulate, and the BLM shall ensure, that decommissioning would be considered a new action for Section 106 review, and that historic properties potentially affected by decommissioning would be considered in accordance with the pertinent laws, regulations, and policies extant at the time.

4.5.6 Measures for the Resolution of Adverse Effects

Resolution measures for adverse effects to historic properties would be outlined in the PA and HPTPs (APM-CULT-01, APM-CULT-03; Appendix 2A, Section 2A.6). The PA has been developed (Appendix 2D) and would direct resolution measures. The PA ensures the priority of avoidance of historic properties during construction phases, and ensures the process of identifying, evaluating, and avoiding or mitigating is followed and would continue even after the NEPA process is complete. HPTPs would be developed in accordance with the stipulations contained in the PA following the Class III survey identification efforts and indirect studies. Measures contained in the PA and HPTPs would be implemented prior to and during construction and post-construction during maintenance activities and operations (APM-CULT-01, BMP-CULT-02, BMP-CULT-04; Appendix 2A, Section 2A.6). Resolution measures for adverse effects to historic properties located within the CDCA Plan area are further outlined by specific compliance requirements discussed in Section 4.5.9. Tribal consultation is on-going.

APMs and BMPs for cultural resources are contained in Appendix 2A, Section 2A.6.

4.5.7 Construction of Full Route Alternative and Subalternative Effects

In the following section, discussion of the percentage of previous Class III survey coverage is presented in a combined total of acreage examined to provide a cumulative percentage. In this way, the percentage of Class III survey coverage is comparable for comparison between alternative and subalternative segments.

4.5.7.1 Proposed Action

A total of 66 NRHP-eligible and unevaluated sites have been previously recorded within the 200-foot analysis corridor of the Proposed Action. Based on an extrapolation of the number of known cultural resource sites in the acreage surveyed, a total of 164 NRHP-eligible or unevaluated sites are projected to occur within the 200-foot analysis corridor of the Proposed Action (Appendix 4, Tables 4.5-1 through 4.5-4). Direct impacts due to construction could range between negligible (if eligible sites could be avoided by Project design) and major (if eligible sites could not be avoided by Project design). The Proposed Action has the potential to affect more known cultural resources sites than the other Action Alternatives.

Segments p-17 and p-18 of the Proposed Action cross the eastern base of the Palo Verde Mesa, a culturally and biologically sensitive area (AECOM 2012). Direct impacts due to construction could range between negligible (if eligible sites could be avoided by Project design) and major (if eligible sites could not be avoided by Project design). However, any impact to human remains would be major and subject to protocol and processes as presented in the Native American Graves Protection and Repatriation Act (NAGPRA) on Federal land and under the California Health and Safety Code Section 7050.5, "Discovery of Human Remains," on state or private land.

Indirect visual effects from the construction of the Proposed Action could occur for the following if they qualify as NRHP-eligible historic properties and exhibit a high degree of integrity of setting, feeling, and association:

- The Indian Well Site, located within the 1-mile-wide corridor of the Proposed Action.
- An undocumented rock ring site, located within the 1-mile-wide corridor of the Proposed Action.
- The Limekiln Wash Intaglio, located in the 200-foot analysis corridor of the Proposed Action.
- The NRHP-listed Ripley Intaglio Site, located within the 5-mile indirect effects analysis area of the Proposed Action.
- The NRHP-listed Mule Tank Discontiguous Rock Art District, a prehistoric district, located approximately within the 5-mile indirect effects analysis area of the Proposed Action.
- Other sensitive sites known or projected to occur in the 200-foot Proposed Action analysis corridor such as trails, intaglios, and prehistoric habitation sites with human remains.

The Proposed Action parallels the existing DPV1 transmission line. The construction of additional transmission structures may create additional visual intrusions on individual properties' NRHP qualities of integrity. Prehistoric trail segments have been recorded within 0.5-mile of Segments p-04, p-06, p-07, p-09, p-10, p-11, p-12, p-13, p-14, and p-15e. If these trails qualify as NRHP-eligible properties and exhibit a high degree of setting, feeling, and association, the construction of additional structures may create additional visual intrusions that affect their NRHP character-defining qualities. These potential effects would be assessed as part of the

indirect effects analysis. The indirect effects analysis would occur after the execution of the PA and signing of the ROD.

Other indirect effects to historic properties could occur if Project roads enhance accessibility, potentially making previously inaccessible properties more vulnerable to increased visitation and vandalism.

Resolution Measures

Potential adverse effects to historic properties would be resolved in accordance with the provisions of the PA and the development of specific HPTPs. Avoidance of cultural resources by final design and construction would be the preferred adverse effect resolution measure. APM-CULT-01 and BMP-CULT-03 (Appendix 2A, Section 2A.6) would be applicable to the resolution of potential adverse effect. For portions of the Project within the CDCA, adverse effect resolution measures as outlined in LUPA-CUL-4 would also be applicable.

4.5.7.2 Alternative 1: I-10 Route

A total of 23 NRHP-eligible and unevaluated sites have been previously recorded within the 200-foot analysis corridor of Alternative 1. Based on an extrapolation of the number of known cultural resources sites in acreage surveyed, a total of 75 NRHP-eligible or unevaluated sites are projected to occur within the 200-foot analysis corridor of Alternative 1 (Appendix 4, Tables 4.5-1, through 4.5-4). However, this projected count may be influenced by skewed metrics resulting from lower Class III survey coverage (less than 5 percent) of Segments i-03 (4.2 percent) and ca-05 (3.4 percent). Direct impacts due to construction could range between negligible (if NRHP-eligible sites could be avoided by Project design) and major (if NRHP-eligible sites could not be avoided by Project design). Alternative 1 would affect fewer cultural resources than the Proposed Action, Alternatives 2-4, or the Preferred Alternative.

Sensitive sites projected to occur in the 200-foot Alternative 1 analysis corridor include prehistoric trails and intaglios. These site types have been recorded within 0.5-mile of Segments i-03, qs-01, qs-02, i-06, i-07, i-08s, and ca-09. The NRHP eligibility of these sites is not known at this time. If these trails and intaglios qualify as NRHP-eligible properties and exhibit a high degree of setting, feeling, and association, the construction of structures may create visual intrusions that affect the NRHP character-defining qualities of these sites.

Other indirect effects to historic properties could occur if Project roads enhance accessibility, potentially making previously inaccessible properties more vulnerable to increased visitation and vandalism.

Resolution Measures

Resolution measures for Alternative 1 and all of the subalternative routes (1A through 1E) would be the same as those described for the Proposed Action.

Subalternative 1A

Subalternative 1A would result in a reduced visual impact (fewer planned transmission structures) and less potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 7.6 percent of the segments of Subalternative 1A have been investigated by Class III survey, while 13.3 percent of Segment i-01 (Alternative 1) has been previously investigated. A total of 26 NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 1A, and 19 NRHP-eligible cultural resource sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 1 that Subalternative 1A would replace.

While the data suggest that Subalternative 1A has a higher potential to affect historic properties based on the disturbance footprint, projected site counts for both Subalternative 1A and Alternative 1 may be the result of low representative Class III survey samples.

Subalternative 1B

Compared to Alternative 1, Subalternative 1B results in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

A total of 2.5 percent of the segments of Subalternative 1B have been investigated by Class III survey, while 13.3 percent of Segment i-01 (Alternative 1) has been previously investigated. Eighty-two NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 1B, and 19 NRHP-eligible cultural resource sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 1 that Subalternative 1B would replace.

While the data suggest that Subalternative 1B has a higher potential to affect historic properties based on projected site counts and the disturbance footprint, projected site counts for Subalternative 1B and Alternative 1 may be the result of low representative Class III survey samples.

Subalternative 1C

Compared to Alternative 1, Subalternative 1C results in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

A total of 2.0 percent of the segments of Subalternative 1C have been investigated by Class III survey, while 9.2 percent of Segments i-04 and i-05 (Alternative 1) has been previously investigated. A total of 102 NRHP-eligible sites are projected to occur within Subalternative 1C, and a total of 3 sites requiring NRHP evaluation are projected to occur along the portion of Alternative 1 that Subalternative 1C would replace.

While the data suggest that Subalternative 1C has a higher potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 1C and Alternative 1 may be the result of low representative Class III survey sample.

Subalternative 1D

Compared to Alternative 1, Subalternative 1D would result in a reduced visual impact (fewer count of transmission structures) and less potential to affect historic properties by ground disturbance (smaller footprint of temporary and permanent disturbance).

A total of 89.6 percent of Subalternative 1D has been investigated by Class III survey, while only 2.0 percent of Segment i-04 (Alternative 1) has been previously investigated. Two NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 1D, and no NRHP-eligible cultural resource sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 1 that Subalternative 1D would replace.

The data suggest that Subalternative 1D and Alternative 1 would have a comparable potential to affect historic properties based on projected site counts and the disturbance footprint.

Subalternative 1E

Compared to Alternative 1, Subalternative 1E would result in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (greater footprint of short- and long-term disturbance).

A total of 10.6 percent of Subalternative 1E has been investigated by Class III survey, while only 3.4 percent of Segment ca-05 (Alternative 1) has been previously investigated. A total of 104 cultural resource sites requiring NRHP evaluation are projected to occur within Subalternative 1E, and 177 cultural resource sites NRHP-eligible cultural resource sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 1 that Subalternative 1E would replace.

While the data suggests that Subalternative 1E has a lower potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 1E and for Alternative 1 may be the result of low representative Class III survey samples.

4.5.7.3 Alternative 2: BLM Utility Corridor Route

A total of 50 NRHP-eligible and NRHP-unevaluated cultural resources sites have been previously recorded within the 200-foot analysis corridor of Alternative 2. A total of 150 NRHP-eligible or NRHP-unevaluated cultural resources sites are projected to occur within the 200-foot analysis corridor of Alternative 2 (Appendix 4, Tables 4.5-1 through 4.5-4). However, this high projected count may be influenced by skewed metrics resulting from lower Class III survey coverage of Alternative 2 Segment x-07 (3.0 percent) and Segment i-03 (4.2 percent). Direct impacts due to construction could range between negligible (if NRHP-eligible sites could be avoided by Project design) and major (if NRHP-eligible sites could not be avoided by Project design). Alternative 2 would impact more known cultural resources sites than Alternatives 1, 3, and 4, less than the Proposed Action, and approximately the same as the Preferred Alternative.

Sensitive sites projected to occur in the Alternative 2 corridor include prehistoric trails and intaglios. These site types have been recorded within 0.5-mile of Segments i-03, qs-01, p-09, p-10, p-11, p-12, p-13, p-14, p-15e, p-16, x-07, x-15, x-16, and ca-09. The NRHP eligibility of all of these sites is not known at this time. If these trails and intaglios qualify as NRHP-eligible properties and exhibit a high degree of setting, feeling, and association, the construction of structures may create visual intrusions that affect the NRHP character-defining qualities of these sites. These potential effects would be assessed as part of the indirect effects analysis.

Other indirect effects to historic properties could occur if Project roads enhance accessibility, potentially making previously inaccessible properties more vulnerable to increased visitation and vandalism.

Indirect visual effects from the construction of Alternative 2 could occur to the following historic properties:

- The Limekiln Wash Intaglio, located within the 200-foot analysis corridor of Alternative 2 Segment p-13.
- The NRHP-listed Ripley Intaglio Site, within the 5-mile indirect effects analysis area of Alternative 2 Segment p-15e.

Both Segments p-13 and p-15e parallel the existing DPV1 transmission line. The construction of additional transmission structures may create additional visual intrusions on individual properties' NRHP qualities of integrity.

Resolution Measures

Resolution measures for Alternative 2 and all of the subalternative routes (2A through 2E) would be the same as those described under the Proposed Action.

Subalternative 2A

Compared to Alternative 2, Subalternative 2A would result in a greater visual impact (higher count of transmission structures) but a comparable amount of ground disturbance (comparable footprint of short- and long-term disturbance).

A total of 5.4 percent of the segments of Subalternative 2A has been investigated by Class III survey, while 37.9 percent of Segments p-01 and i-01 (Alternative 2) have been previously investigated. A total of 37 NRHP-eligible cultural resource sites are projected to occur within Subalternative 2A, and 38 NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 2 that Subalternative 2A would replace.

While the data suggest that Subalternative 2A has a slightly lower potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 2A may be the result of low representative Class III survey sample.

Subalternative 2B

Compared to Alternative 2, Subalternative 2B would result in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (greater footprint of short- and long-term disturbance).

A total of 12.7 percent of the segments of Subalternative 2B have been investigated by Class III survey, while 13.3 percent of Segment i-01 (Alternative 2) has been previously investigated. A total of 40 NRHP-eligible cultural resource sites or sites requiring NRHP evaluation are projected to occur within Subalternative 2B, and 19 NRHP-eligible cultural resource sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 2 that Subalternative 2B would replace.

While the data suggest that Subalternative 2B has a higher potential to affect historic properties based on the disturbance footprint, projected site counts for both Subalternative 2B and Alternative 2 may be the result of low representative Class III survey samples.

Subalternative 2C

Compared to Alternative 2, Subalternative 2C would result in a comparable visual impact (comparable count of transmission structures) and a lower potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 29.9 percent of the segments of Subalternative 2C have been investigated by Class III survey, while 41.3 percent of Segments p-11 and p-12 (Alternative 2) have been previously investigated. Ten sites requiring NRHP evaluation are projected to occur within Subalternative 2C, and two NRHP-eligible cultural resource sites are projected to occur along the portion of Alternative 2 that Subalternative 2C would replace.

The data suggest that Subalternative 2C has a higher potential to affect historic properties based on projected site counts and the disturbance footprint.

Subalternative 2D

Compared to Alternative 2, Subalternative 2D would result in a greater visual impact (higher count of transmission structures) but a reduced potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 15.6 percent of the segments of Subalternative 2D have been investigated by Class III survey, while 61.4 percent of Segment p-11 (Alternative 2) has been previously investigated. Six NRHP-eligible sites are projected to occur within Subalternative 2D, and two NRHP-eligible cultural resource sites are projected to occur along the portion of Alternative 2 that Subalternative 2D would replace.

The data suggests that Subalternative 2D has a higher potential to affect historic properties than Alternative 2 based on projected site counts and the disturbance footprint.

Subalternative 2E

Compared to Alternative 2, Subalternative 2E would result in a reduced visual impact (lower count of transmission structures) and reduced potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 7.6 percent of the segments of Subalternative 2E have been investigated by Class III survey, while 14.1 percent of Segments p-16 and x-16 (Alternative 2) has been previously investigated. For Subalternative 2E, 53 sites requiring NRHP evaluation are projected to be present, while 42 are projected to occur along the portion of Alternative 2 that Subalternative 2E would replace.

While the data suggest that Subalternative 2E has a slightly higher potential to affect historic properties based on the disturbance footprint, projected site counts for both Subalternative 2E and Alternative 2 may be the result of low representative Class III survey samples.

4.5.7.4 Alternative 3: Avoidance Route

A total of 35 NRHP-eligible or NRHP-unevaluated cultural resources sites have been previously recorded within the 200-foot analysis corridor of Alternative 3. A total of 134 NRHP-eligible or NRHP-unevaluated cultural resources sites are projected to occur within the 200-foot analysis corridor of Alternative 3 (Appendix 4, Tables 4.5-1 through 4.5-4). This high count of projected sites is likely inflated due to low representative Class III sample size, especially in Segments x-03, x-05, x-11, and ca-01, which have a combined sample size of less than 6.1 percent. Direct impacts due to construction could range between negligible (if NRHP-eligible sites could be avoided by Project design) and major (if eligible sites could not be avoided by Project design). Alternative 3 would impact fewer known cultural resource sites than the Proposed Action, Alternative 2, Alternative 4, and the Preferred Alternative but more than Alternative 1.

Sensitive sites projected to occur in the 200-foot Alternative 3 analysis corridor include prehistoric trails. These site types have been recorded within 0.5-mile of Segments i-03, p-07, p-09, p-14, x-05, cb-01, cb-05, ca-09, and cb-10. The NRHP eligibility of all of these sites is not known at this time. If these trails and intaglios qualify as NRHP-eligible properties and exhibit a high degree of setting, feeling, and association, the construction of structures may create visual intrusions that affect the NRHP character-defining qualities of these sites.

Other indirect effects to historic properties could occur if Project roads enhance accessibility, potentially making previously inaccessible properties more vulnerable to increased visitation and vandalism.

Resolution Measures

Resolution measures for Alternative 3 and all of the subalternative routes (3A through 3M) would be the same as those described under the Proposed Action.

Subalternative 3A

Compared to Alternative 3, Subalternative 3A would result in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties (greater footprint of short- and long-term disturbance).

Only 5.0 percent of the segments of Subalternative 3A have been investigated by Class III survey, while 37.9 percent of Segments p-01 and i-01 (Alternative 3) has been previously investigated. Forty-one sites requiring NRHP evaluation are projected to occur within Subalternative 3A, while 38 NRHP-eligible site or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 3 that Subalternative 3A would replace.

While the data suggests that Subalternative 3A has a higher potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 3A may be the result of low representative Class III survey sample.

Subalternative 3B

Compared to Alternative 3, Subalternative 3B would result in a reduced visual impact (lower count of transmission structures) and less ground disturbance (smaller footprint of short- and long-term disturbance).

Only 7.5 percent of the segments of Subalternative 3B have been investigated by Class III survey, while 12.7 percent of Segments p-02, p-03, p-04, x-03 (Alternative 3) has been previously investigated. A total of 19 NRHP-eligible or NRHP unevaluated cultural resources sites are projected to occur within Subalternative 3B, while 39 sites are projected to occur along the portion of Alternative 3 that Subalternative 3B would replace.

While the data suggest that Alternative 3 has a lower potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 3B and Alternative 3 may be the result of low representative Class III survey sample.

Subalternative 3C

Compared to Alternative 3, Subalternative 3C would result in a comparable visual impact (comparable count of transmission structures) and a lower potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 5.9 percent of the segments of Subalternative 3C have been investigated by Class III survey, while only 3.6 percent of Segments i-03 and x-03 (Alternative 3) been previously investigated. Thirty-four NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 3C, while a total of 111 cultural resources sites requiring NRHP evaluation are projected to occur along the portion of Alternative 3 that Subalternative 3C would replace.

While the data suggest that Subalternative 3C has a lower potential to affect historic properties based on the disturbance footprint, projected site counts for both Subalternative 3C and Alternative 3 may be the result of low representative Class III survey samples.

Subalternative 3D

Compared to Alternative 3, Subalternative 3D would result in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (greater footprint of short- and long-term disturbance).

Only 2.0 percent of Subalternative 3D has been investigated by Class III survey, and only 2.0 percent of Segment i-04 (Alternative 3) has been previously investigated. A total of 102 NRHP-eligible sites are projected to occur within Subalternative 3D, and no cultural resources sites are projected to occur along the portion of Alternative 3 that Subalternative 3D would replace.

While the data suggest that Subalternative 3D has a higher potential to affect historic properties based on the disturbance footprint, projected site counts for both Subalternative 3C and Alternative 3 may be the result of low representative Class III survey samples.

Subalternative 3E

Compared to Alternative 3, Subalternative 3E would result in a comparable visual impact (comparable counts of transmission structures) but a greater potential to affect historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

A total of 29.0 percent of Subalternative 3E has been investigated by Class III survey, while only 2.4 percent of Segment x-05 (Alternative 3) has been previously investigated. A total of 21 cultural resources sites requiring NRHP evaluation are projected to occur within Subalternative 3E, while a total of 93 cultural resources sites are projected to occur along the portion of Alternative 3 that Subalternative 3E would replace.

While the data suggest that Subalternative 3E has a lower potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 3E may be the result of low representative Class III survey sample. These effects must be also further evaluated in conjunction with the pairing of Subalternative 3E with Subalternatives 3D and 3G, or 3J.

Subalternative 3F

Compared to Alternative 3, Subalternative 3F would result in a comparable visual impact (comparable count of transmission structures) but less potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 23.7 percent of Subalternative 3F has been investigated by Class III survey, while only 1.0 percent of Segment x-05 (Alternative 3) has been previously investigated. A total of 21 NRHP-eligible or NRHP-unevaluated sites are projected to occur within Subalternative 3F, and 104 NRHP-eligible or NRHP-unevaluated sites are projected to occur along the portion of Alternative 3 that Subalternative 3F would replace.

The data suggest that Alternative 3 would have a higher potential to affect historic properties based on projected site counts and the disturbance footprint. These effects must also be further evaluated in conjunction with the pairing of Subalternative 3F with Subalternatives 3D and 3G, or 3J.

Subalternative 3G

Subalternative 3G consists of Segment qn-01. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 89.6 percent of Subalternative 3G has been investigated by Class III survey. Two NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 3G, which demonstrates a low sensitivity for cultural resources in the 200-foot analysis corridor.

The potential effect to historic properties by Subalternative 3G must be further evaluated in conjunction with the pairing of Subalternative 3G with Subalternatives 3D, 3E, 3F, 3H, and/or 3J.

Subalternative 3H

Subalternative 3H consists of Segment qn-02. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 56.6 percent of Subalternative 3H has been investigated by Class III survey. A total of seven NRHP-eligible cultural resources sites or sites requiring NRHP evaluation are projected to occur within Subalternative 3H.

The potential effect to historic properties by Subalternative 3H must be further evaluated in conjunction with the pairing of Subalternative 3H with Subalternatives 3D and 3L.

Subalternative 3J

Subalternative 3J consists of Segment i-05. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 36.3 percent of Subalternative 3J has been investigated by Class III survey. A total of three cultural resources sites requiring NRHP evaluation are projected to occur within Subalternative 3J.

The potential effect to historic properties by Subalternative 3J must be further evaluated in conjunction with the pairing of Subalternative 3J with Subalternatives 3E, 3F, or 3G and 3H.

Subalternative 3K

Compared to Alternative 3, Subalternative 3K would result in a greater visual impact (higher count of transmission structures) but less potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 44.8 percent of Subalternative 3K has been investigated by Class III survey, while 4.9 percent of Segment cb-01 (Alternative 3) has been previously investigated. Two cultural resources sites are projected to occur within Subalternative 3K and none along the portion of Alternative 3 that Subalternative 3K would replace.

The data suggest that Subalternative 3K would have a higher potential to affect historic properties than Alternative 3.

Subalternative 3L

Compared to Alternative 3, Subalternative 3L would result in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

A total of 45.5 percent of Subalternative 3L has been investigated by Class III survey, while 70.6 percent of Segments p-09, p-10, p-11 (Alternative 3) has been previously investigated. A total of 7 NRHP-eligible cultural resource sites are projected to occur within Subalternative 3L, and a total of 7 NRHP-eligible cultural resources sites are projected to occur along the portion of Alternative 3 that Subalternative 3L would replace.

The data suggests that Subalternative 3L has a comparable potential to affect historic properties based on the projected site counts and disturbance footprint. However, effects must be further evaluated in conjunction with the pairing of Subalternative 3L with Subalternatives 3D and 3H or 3J, 3G, and 3H.

Subalternative 3M

Compared to Alternative 3, Subalternative 3M would result in a comparable visual impact (comparable count of transmission structures) but a greater potential to affect historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

A total of 27.0 percent of Subalternative 3M has been investigated by Class III survey, while 4.1 percent of Segments cb-10, x-11, ca-01 (Alternative 3) has been previously investigated. A total of 65 sites requiring NRHP evaluation are projected to occur within Subalternative 3M, and a total of 244 sites requiring NRHP evaluation are projected to occur along the portion of Alternative 3 that Subalternative 3M would replace. This inflated site count for Alternative 3 is the result of a low representative Class III survey sample in Segment ca-01.

While the data suggest that Alternative 3 has a higher potential to affect historic properties than Subalternative 3M based on projected site counts and the disturbance footprint, projected site counts for Alternative 3 may be the result of low representative Class III survey sample.

4.5.7.5 Alternative 4: Public Lands Emphasis Route

A total of 41 NRHP-eligible or NRHP-unevaluated cultural resources sites have been previously recorded within the 200-foot analysis corridor of Alternative 4. A total of 170 NRHP-eligible or NRHP-unevaluated cultural resources sites are projected to occur within the 200-foot analysis corridor of Alternative 4 (Appendix 4, Tables 4.5-1 through 4.5-4). The projected count of sites may be influenced by skewed metrics resulting from lower Class III survey coverage (2 percent) of Alternative 4 Segment in-01. Direct impacts due to construction could range between negligible (if NRHP-eligible sites could be avoided by Project design) and major (if eligible sites could not be avoided by Project design). Alternative 4 would impact fewer cultural resource sites than the Proposed Action, Alternative 2, and the Preferred Alternative; but more than Alternative 1 and Alternative 3.

Sensitive sites projected to occur in the 200-foot Alternative 4 analysis corridor include prehistoric trails. These site types have been recorded within 0.5-mile of Segments d-01, x-04,

x-06, x-09, p-10, p-13, p-14, cb-02, cb-06, and ca-09. If these trails qualify as NRHP-eligible properties and exhibit a high degree of setting, feeling, and association, the construction of additional structures may create additional visual intrusions that affect their NRHP character-defining qualities.

Indirect visual effects from the construction of Alternative 4 could occur for the following properties:

- The Limekiln Wash Intaglio, located within the 200-foot analysis corridor of Alternative 4 Segment p-13.
- The NRHP-listed Eagletail Petroglyph Site, located within the 5-mile indirect effects analysis area of Alternative 4 Segment d-01.
- The NRHP-listed Ripley Intaglio Site, located within the 5-mile indirect effects analysis area of Alternative 4 Segment p-15e.

Alternative 4 Segments p-13 and p-15e parallel the existing DPV1 transmission line. The construction of additional transmission structures may create additional visual intrusions on the Limekiln Wash and Ripley Intaglio Site NRHP qualities of integrity.

The landscape of Alternative 4 Segment d-01 is largely native desert and the construction of structures would visually impact this area. Depending on the viewshed, the construction of structures may create visual intrusions that affect the NRHP character-defining qualities of the Eagletail Petroglyph Site.

Other indirect effects to historic properties could occur if Project roads enhance accessibility, potentially making previously inaccessible properties more vulnerable to increased visitation and vandalism.

Resolution Measures

Resolution measures for Alternative 4 and all of the subalternative routes (4A through 4P) would be the same as those described under the Proposed Action.

Subalternative 4A

Compared to Alternative 4, Subalternative 4A would result in a greater visual impact (higher count of transmission structures) and a greater potential to impact historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

A total of 43.2 percent of Subalternative 4A has been investigated by Class III survey, while only 5.7 percent of Segment d-01 (Alternative 4) has been previously investigated. A total of 33 NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 4A, while 35 cultural resources sites requiring NRHP evaluation are projected to occur along the portion of Alternative 4 that Subalternative 4A would replace. In addition, one NRHP-listed property, the Eagletail Petroglyph Site, is located within the 5-mile indirect effects analysis area of Segment d-01.

While the data suggest that Subalternative 4A has a comparable potential to affect historic properties based on the disturbance footprint, projected site counts for Alternative 4 may be the result of low representative Class III survey sample.

Subalternative 4B

Compared to Alternative 4, Subalternative 4B would result in a greater visual impact (higher count of transmission structures) and a greater potential to affect historic properties by ground disturbance (larger footprint of short- and long-term disturbance).

Only 3.6 percent of Subalternative 4B has been investigated by Class III survey, and only 1.9 percent of Segment x-04 (Alternative 4) has been previously investigated. A total of 111 NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 4B, whereas no cultural resources sites requiring NRHP evaluation are projected to occur along the portion of Alternative 4 that Subalternative 4B would replace.

While the data suggest that Subalternative 4B has a higher potential to affect historic properties based on the disturbance footprint, projected site counts for Subalternative 4B and Alternative 4 may be the result of low representative Class III survey samples.

Subalternative 4C

Subalternative 4C consists of Segment i-04. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 2.0 percent of Subalternative 4C has been investigated by Class III survey. No cultural resources sites are projected to occur within Subalternative 4C. However, this projected site count must be viewed with caution in consideration of the small representative Class III sample size. The potential effect to affect historic properties by Subalternative 4C must be further evaluated in conjunction with the pairing of Subalternative 4C with Subalternatives 4D or 4J.

Subalternative 4D

Subalternative 4D would result in a comparable visual impact (comparable count of transmission structures) and a lower potential to affect historic properties by ground disturbance (greater footprint of short- and long-term disturbance).

A total of 5.7 percent of Subalternative 4D has been investigated by Class III survey, and 26.7 percent of Segments i-05 and x-06 (Alternative 4) have been previously investigated. A total of 122 NRHP-eligible or NRHP-unevaluated sites are projected to occur within Subalternative 4D, whereas 22 NRHP-eligible or NRHP-unevaluated sites are projected to occur along the portion of Alternative 4 that Subalternative 4D would replace.

While the data suggests that Subalternative 4D has a higher potential to affect historic properties based on ground disturbance, the high projected site counts for Subalternative 4D are likely due to a low percentage of Class III survey. Any effects must be further evaluated in conjunction with the pairing of Alternative 4 with Subalternative 4C.

Subalternative 4E

Compared to Alternative 4, Subalternative 4E would result in the same visual impact (same count of transmission structures) and comparable potential to impact historic properties by ground disturbance (comparable footprint of short- and long-term disturbance).

A total of 4.8 percent of Subalternative 4E has been investigated by Class III survey, while 44.8 percent of Segments p-10 and cb-02 (Alternative 4) has been previously investigated. No NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 4E. Two NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 4 that Subalternative 4E would replace.

The data suggest that Alternative 4 has a slightly greater potential to affect historic properties based on projected site counts and the disturbance footprint.

Subalternative 4F

Compared to Alternative 4, Subalternative 4F would result in the same visual impact (same count of transmission structures) but a lower potential to impact historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 8.7 percent of Subalternative 4F has been investigated by Class III survey, while 62.6 percent of Segments cb-06 and p-13 (Alternative 4) has been previously investigated. No NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 4F, whereas three cultural resources NRHP-eligible sites are projected to occur along the portion of Alternative 4 that Subalternative 4F would replace.

The data suggest that Subalternative 4F would have a lower potential to affect historic properties based on the disturbance footprint than Alternative 4. However, the null value of projected site counts for Subalternative 4F may be the result of low representative Class III survey sample.

Subalternative 4G

Compared to Alternative 4, Subalternative 4G would result in a comparable visual impact (comparable count of transmission structures) but a lower potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 43.7 percent of Subalternative 4F has been investigated by Class III survey, while 29.9 percent of Segments cb-02, cb-04, and cb-06 (Alternative 4) has been previously investigated. A total of two NRHP-eligible sites are projected to occur within Subalternative 4G, whereas a total of ten NRHP-eligible sites are projected to occur along the portion of Alternative 4 that Subalternative 4G would replace.

The data suggest that Subalternative 4G would have a lower potential to affect historic properties based on projected site counts and disturbance footprint than Alternative 4.

Subalternative 4H

Subalternative 4H consists of Segments x-08 and i-07. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 31.6 percent of

Subalternative 4H has been investigated by Class III survey. A total of 12 NRHP-eligible cultural resources sites or sites requiring NRHP evaluation are projected to occur within Subalternative 4H. The potential effect to historic properties by Subalternative 4H must be further evaluated in conjunction with the pairing of Subalternative 4H with Subalternatives 4G and 4K.

Subalternative 4J

Subalternative 4J consists of Segment i-05. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 36.3 percent of Subalternative 4J has been investigated by Class III survey. A total of three cultural resources sites requiring NRHP evaluation are projected to occur within Subalternative 4J. The potential effect to historic properties by Subalternative 4J must be further evaluated in conjunction with the pairing of Subalternative 4J with Subalternative 4C.

Subalternative 4K

Subalternative 4K consists of Segments i-08s, ca-04, and x-09. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 28.2 percent of Subalternative 4K has been investigated by Class III survey. No cultural resources sites are projected to occur within Subalternative 4K. The potential effect to historic properties by Subalternative 4K must be further evaluated in conjunction with the pairing of Subalternative 4K with Subalternative 4H and 4N.

Subalternative 4L

Subalternative 4L consists of Segments cb-10 and x-11. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 7.5 percent of Subalternative 4L has been investigated by Class III survey. A total of 13 sites requiring NRHP evaluation are projected to occur within Subalternative 4L. However, this high projected site count is the result of low representative Class III survey sample in Segment x-11 of Subalternative 4L (1.5 percent). The potential effect to historic properties by Subalternative 4L must be further evaluated in conjunction with the pairing of Subalternative 4L with Subalternative 4M.

Subalternative 4M

Compared to Alternative 4, Subalternative 4M would result in a comparable visual impact (comparable count of transmission structures) and a comparable potential to disturb historic properties based on ground disturbance (comparable footprint of short- and long-term disturbance).

A total of 2.0 percent of Subalternative 4M has been investigated by Class III survey, and 32.4 percent of Segment p-15w (Alternative 4) has been previously investigated. A total of 442 NRHP-unevaluated sites are projected to occur within Subalternative 4M, while 25 NRHP-eligible sites are projected to occur along Segment p-15w.

The data suggest that Subalternative 4M has a higher potential to effect historic properties based on ground disturbance; however, the high projected site counts for Subalternative 4M may be the

result of low representative Class III survey sample. These effects must be also further evaluated in conjunction with the pairing of Subalternative 4M with Subalternative 4L.

Subalternative 4N

Subalternative 4N consists of Segment x-10. It does not replace a specific segment; for that reason, it is presented in terms of its standalone attributes. A total of 60.8 percent of Subalternative 4N has been investigated by Class III survey with negative results. No cultural resources sites are projected to occur within Subalternative 4N. The potential effect to historic properties by Subalternative 4N must be further evaluated in conjunction with the pairing of Subalternative 4N with Subalternatives 4H, 4K, and 4M.

Subalternative 4P

Compared to Alternative 4, Subalternative 4P would result in a higher visual impact (greater count of transmission structures), but a lower potential to affect historic properties by ground disturbance (smaller footprint of short- and long-term disturbance).

A total of 60.4 percent of Subalternative 4P has been investigated by Class III survey, while 54.0 percent of Segments x-13, x-12, ca-06, ca-07, ca-09, and x-19 (Alternative 4) have been previously investigated. A total of 36 NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur within Subalternative 4P, whereas 74 NRHP-eligible sites or sites requiring NRHP evaluation are projected to occur along the portion of Alternative 4 that Subalternative 4P would replace. Additionally, one NRHP-listed property, the Mule Tank Discontiguous Rock Art District, is within the 1-mile analysis area of Segment p-17 and would need to be evaluated to determine how the visual impacts affect the integrity of the setting and its NRHP status.

The data suggest that Subalternative 4P demonstrates a higher potential to affect historic properties than Alternative 4 segments it would replace.

4.5.7.6 Agency Preferred Alternative

A total of 49 NRHP-eligible or NRHP-unevaluated cultural resources sites have been previously recorded within the 200-foot analysis corridor of the Preferred Alternative. A total of 132 NRHP-eligible or NRHP-unevaluated cultural resources sites are projected to occur within the 200-foot analysis corridor of the Preferred Alternative (Appendix 4, Tables 4.5-1 through 4.5-4). However, this high projected count may be influenced by skewed metrics resulting from lower Class III survey coverage of Segment i-03 (4.2 percent). Direct impacts due to construction could range between negligible and major, if NRHP-eligible sites could not be avoided by Project design. The Preferred Alternative has the potential to affect more cultural resource sites than Alternative 1, Alternative 3, and Alternative 4, about the same as Alternative 2, and less than the Proposed Action.

Sensitive sites projected to occur in the Preferred Alternative's 200-foot analysis corridor include prehistoric trails and intaglios. These site types have been recorded within 0.5-mile of Segments i-03, p-09, p-10, p-11, p-12, p-13, p-14, p-15e, p-16, x-15, x-16, and ca-09. The NRHP eligibility of all of these sites is not known at this time. If these trails and intaglios qualify as NRHP-eligible properties and exhibit a high degree of setting, feeling, and association, the construction of structures may create visual intrusions that affect the NRHP character-defining qualities of

these sites. Other indirect effects to historic properties could occur if Project roads enhance accessibility, potentially making previously inaccessible properties more vulnerable to increased visitation and vandalism.

Indirect visual effects from the construction of the Project under the Preferred Alternative could occur to the following historic properties:

- The Limekiln Wash Intaglio, located within the 200-foot analysis corridor of Segment p-13.
- The NRHP-listed Ripley Intaglio Site, within the 5-mile indirect effects analysis area of Segment p-15e.

Both Segments p-13 and p-15e parallel the existing DPV1 transmission line. The construction of additional transmission structures may create additional visual intrusions on individual properties' NRHP qualities of integrity.

Resolution Measures

Resolution measures for the Preferred Alternative would be the same as those described under the Proposed Action.

4.5.8 Residual Impacts

For historic properties that are determined eligible for the NRHP or listed on the NRHP under Criterion D, provided that the provisions of a HPTP for data recovery are followed, no residual impacts would occur. For those historic properties determined eligible for or listed on the NRHP under Criteria A, B, or C, impacts to their NRHP qualities of setting, feeling, and/or association may be considered to be residual. However, it is anticipated that these properties would at least partially retain the NRHP qualities that make them eligible under Criteria A, B, or C. As a result, the residual impact to these properties would be moderate.

4.5.9 CDCA Plan Compliance

CMAs LUPA-CUL-4, LUPA-TRANS-CUL-1 through LUPA-TRANS-CUL-6, and DFA-VPL-CUL-1 through DFA-VPL-CUL-7 would apply to the Project (Appendix 2C). DFA-VPL-CULT-7 would also apply to the Project (Appendix 2C) and would be satisfied by identifying the need for specific compliance with the NHPA in Chapters 3, Sections 5.3 and 5.5, and Appendix 5, Table 5.3-1, as well as Appendix 2D.

LUPA-CUL-4 is specific to the Project design to minimize impacts on cultural resources, including those places of elevated cultural or spiritual significance to Federally recognized tribes. Compliance with LUPA-CUL-4 would be satisfied with BMP-CULT-03, which states that the applicant would follow avoidance and stipulations outlined in the PA (Appendix 2D) and appropriate HPTPs, and APM-CULT-01 and APM-CULT-02 (Appendix 2A, Section 2A.6), in which the applicant commits to following those stipulations.

LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 are specific to the responsibility of the applicant to pay for costs associated with the Project's cultural resources compliance. Compliance with

LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 would be satisfied by APM-CULT-01 and APM-CULT-02 (Appendix 2A, Section 2A.6), in which the applicant commits to conducting a cultural resources inventory of the direct and indirect APE, preparing HPTPs, and conducting cultural resource monitoring during Project construction, operations, maintenance, and decommissioning (as appropriate) to meet stipulations outlined in the PA (Appendix 2D).

LUPA-TRANS-CUL-2 and DFA-VPL-CUL-2 are specific to the applicant's payment of compensatory mitigation fees for cumulative and indirect effects to historic properties as a result of Project construction, operations, maintenance, and decommissioning. Compliance with LUPA-TRANS-CULT-2 and DFA-VPL-CUL-2 would be satisfied by BMP-CULT-05 (Appendix 2A, Section 2A.6), which outlines the fee structure of the compensatory mitigation fee. The compensatory mitigation fee structure is also outlined in the stipulations contained within the PA (Appendix 2D).

LUPA-TRANS-CUL-3 and DFA-VPL-CUL-3 are specific to the applicant's payment of management fees as part of the compensatory mitigation fee contained in LUPA-TRANS-CUL-2 and DFA-VPL-CUL-2, respectively. Compliance with LUPA-TRANS-CUL-3 and DFA-VPL-CUL-3 would be satisfied by BMP-CULT- 05 (Appendix 2A, Section 2A.6), which outlines the fee structure of the management fee as part of the compensatory mitigation fee. The management fee and compensatory mitigation fee structure is also outlined in the stipulations contained within the PA (Appendix 2D).

LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 are specific to the development of a cultural resources sensitivity model based on existing cultural resources data in the CDCA Plan area for consideration in Project planning and alternative selection. (Appendix 2D) Compliance with LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 would be satisfied with BMP-CUL-06 (Appendix 2A, Section 2A.6). This compliance measure has been met.

LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 are specific to the provision of a statistically significant cultural resources sample survey to be used in Project planning (Appendix 2D). Compliance with LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 would be satisfied by BMP-CULT-07 (Appendix 2A, Section 2A.6), which requires cultural resources Class III survey of Segments p-17 and p-18 to be conducted during the NEPA and CEQA analyses to meet the conditions of LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5. This compliance measure has been met.

LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 are specific to the applicant's justification to include culturally sensitive areas through NEPA and CEQA analyses (Appendix 2D). Compliance with LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 would be satisfied by BMP-CULT-08 (Appendix 2A, Section 2A.6), which requires such justification from the Project applicant. This compliance measure has been met.

DFA-VPL-CUL-7 addresses completion of the Section 106 process (Appendix 2D). Compliance with DFA-VPL-CUL-7 is satisfied by identifying the need for specific compliance with the NHPA in Chapters 3 and 5. Chapter 5 summarizes the process of drafting the PA and the consultation process and efforts of tribal consultation with Indian tribes, respectively. Appendix 2D is the PA for the Project.

4.5.10 Unavoidable Adverse Effects

If historic properties cannot be avoided by Project design and construction, the disturbance, damage, or loss to that property as a result of ground disturbance is considered to be an unavoidable adverse effect.

4.5.11 Cumulative Effects

The Project Area is crossed by numerous utility and transportation corridors, including I-10, US 95, SR 95, the CAP canal, the DPV1 transmission line, the EPNG line, as well as local roads. The landscape has been further altered by the development of the Town of Quartzsite and the City of Blythe, and the expansion of historic and modern agriculture. The scope of this development has resulted in the loss of historic properties by construction, as well as visual impacts to historic properties on the landscape. Large linear projects, such as DPV1, I-10, and the CAP canal have had the effect of altering the viewshed of the native landscape and disrupting the prehistoric trails and elements of traditional native infrastructure across the desert, all of which contribute to cumulative effects.

Reasonably foreseeable future actions include the development of large solar facilities in the western portion of the Project Area (Table 4-5), all of which have the potential to cumulatively impact cultural resources. These cumulative effects are manifest in terms of the loss of historic properties due to ground disturbance associated with construction or operations and maintenance, and the changes to the viewshed of historic properties. Those historic properties considered to be especially sensitive to indirect effects are typically those for which integrity of setting, feeling, and association are contributors to the property's NRHP eligibility and its ability to convey a sense of its own significance. Increased visual degradation to properties that are eligible under NRHP Criteria A, B, and C, and that retain integrity of setting, feeling, and association, would result in permanent cumulative impacts. If effects to NRHP qualities are measurable this would constitute a permanent cumulative effect.

Table 4-5 Potential Disturbance in 5-Mile CEA from Reasonably Foreseeable Projects

ZONE	PROJECT	TYPE	ACRES
EP&K	Harquahala Solar Project	Solar Facility	3,514
EP&K	La Paz County land conveyance	Solar Facility	5,935
QTZ	Plomosa 9 Placer Claim	Mine	20
QTZ	Quartzsite WWTP Renovations	Infrastructure	16.7*
CB	West Port Gold	Mine	40
CR&CA	Blythe Energy Power Plant/Sonoran Energy Project	Power Plant	76
CR&CA	Blythe Mesa Solar Project	Solar Facility	7,025
CR&CA	Desert Quartzite Solar	Solar Facility	4,800
CR&CA	Crimson Quartzsite Solar	Solar Facility	2,700
Total			24,110

* expansion would be within the existing footprint and is therefore not included in total.

The La Paz County Land Conveyance would remove 5,935 acres from Federal oversight. However, most of the land in the Project Area would remain under Federal jurisdiction and therefore be subject to protection afforded by cultural resource laws and evaluation of effects in accordance with NEPA. While the loss of cultural sites eliminates the potential to preserve the sites in place or to study the sites at a later time period when new evaluation techniques might exist, the impact to historic properties would be resolved through data recovery and other methods and would have the benefit of increasing scientific knowledge regarding the past lifeways of prehistoric, protohistoric, and historic populations in the region.

In the western Project Area, within the boundary of the CDCA, the BLM has addressed the reasonably foreseeable cumulative effect of construction and development on public lands through the development of the DRECP PA. This PA contains measures to address cumulative effects not addressed by data recovery or other traditional adverse effect resolution measures.

4.5.12 Irreversible and Irretrievable Commitment of Resources

Because cultural resources are non-renewable resources, any disturbance, damage, or loss to a resource that is or may be eligible for the NRHP would constitute an irreversible and irretrievable impact to that resource. However, archaeological data recovery of sites along the transmission line would increase knowledge and understanding about the history of southwestern Arizona and southeastern California, which would be a benefit (positive impact) to science. Data recovery along the Project would contribute to our understanding of prehistoric cultures, as well as to our understanding of historic era transportation, settlement, and mining. Investigations in these areas could help contribute our understanding and knowledge of the use and formation of the landscape in southwestern Arizona and southeastern California.

4.5.13 Relationship of Short-term Uses and Long-term Productivity

The short-term use of the ROW during construction of the Project would result in ground disturbance. If that ground disturbance results in the disturbance, damage, or loss of cultural resources that are or may be eligible for the NRHP, the long-term potential of that resource is reduced or eliminated. This is primarily true of resources eligible under Criterion D; however, if a resource eligible under Criterion A, B, or C is damaged or lost due to construction that would also affect its long-term potential.

4.6 CONCERNS OF INDIAN TRIBES

4.6.1 Introduction

The Project is within ancestral lands of Indian tribes, and tribal communities have maintained a spiritual stewardship and cultural connection to the landscape. The natural and cultural resources within and near the Project Area contain cultural and spiritual energy for Indian tribes, and continue to play fundamental roles in cultural traditions, group identities, and ongoing religious and ceremonial traditions.

Indian tribes with ancestral ties to the Project Area include:

- Agua Caliente Band of Cahuilla Indians
- Ak-Chin Indian Community
- Augustine Band of Cahuilla Indians
- Cabazon Band of Mission Indians
- Chemehuevi Tribe of the Chemehuevi Indian Reservation
- Cocopah Indian Tribe of Arizona
- Colorado River Indian Tribes (CRIT)
- Fort McDowell Yavapai Nation
- Fort Mojave Indian Tribe
- Fort Yuma Quechan Tribe
- Gila River Indian Community
- Hopi Tribe of Arizona
- Moapa Band of Paiute Indians
- Morongo Band of Mission Indians
- Salt River Pima-Maricopa Indian Community
- San Manuel Band of Mission Indians
- Soboba Band of Luiseño Indians
- Tohono O'odham Nation
- Torres-Martinez Desert Cahuilla Indians
- Twenty-Nine Palms Band of Mission Indians
- Yavapai-Apache Nation of the Camp Verde Indian Reservation
- Yavapai-Prescott Indian Tribe
- Pueblo of Zuni

Discussion of the concerns of Indian tribes relevant to the Project including regulatory requirements, tribal land use and cultural affiliation, and areas of potential significance and sensitivity to Indian tribes are presented in Chapter 3. The status of consultation in accordance with Section 106 of the NHPA of 1966, as amended, is presented in Appendix 5, Table 5.3-1.

4.6.2 Methods for Analysis

4.6.2.1 Analysis Area

The analysis area for the Project consists of areas where direct effects to places of Indian tribal concern may occur. Direct effects are defined by areas where ground disturbance would occur for Project construction, such as structure locations, access roads, lay down areas, and spur roads, among others. The analysis area is defined as a 200-foot-wide corridor where direct effects are expected to occur. Baseline data for the analysis area are presented in Section 3.6 and are considered to provide an appropriate measure for the analysis of potential direct effects of the Project. For Section 106 purposes, the APE for direct effects is defined differently (Appendix 2D).

In addition to direct impacts, indirect impacts to resources as a result of the Project may occur. Indirect impacts to resources include visual, atmospheric, and auditory effects. As presented in Section 4.5, indirect atmospheric and auditory effects may occur in an area measuring 0.5-mile from each Action Alternative or subalternative. Potential indirect visual effects were delineated to include resources within 5 miles on either side of the alternatives and subalternatives. In certain situations, the 5-mile visual analysis area was adjusted based on the presence of topography that restricts the viewshed.

4.6.2.2 Assumptions

The PA and ROD would outline protocols for minimizing impacts to areas of concern to Indian tribes, such as options for regulating access, provisions for the inclusions of tribal members in cultural resources investigations and fieldwork, and the preparation of ethnographic studies, among other provisions, as required.

The following assumptions underlie the Section 106 consultation process:

- Indian tribes may choose not to divulge particularly sensitive information outside of the tribal community.
- Community members may have their own beliefs, which may not necessarily be shared by members of the tribal council.
- BLM can only address areas of concern to Indian tribes that are made known.
- Indian tribes may share new concerns during the Section 106 and NEPA process, and the BLM will attempt to address these in the PA.
- Some tribes may defer to other tribes in the decision-making process.

4.6.2.3 Environmental Effects Indicators, Magnitude, and Duration

To date, the BLM has invited affiliated Indian tribes to participate in the Section 106 consultation, established formal lines of communication for scheduled meetings and conference calls, held Section 106 and PA development meetings, and sponsored a tribal tour of Project alternatives. As a result of those communications, impact indicators have been developed specific to issues of tribal concern. These are not all inclusive, and other areas of concern to Indian tribes may be identified during continued Section 106 consultation.

Based on the result of Section 106 consultation and Project outreach, the following issues have been identified specific to issues of concern to Indian tribes:

- Existing Access: Tribal representatives from the CRIT, Fort Yuma Quechan Tribe, and the Twenty-Nine Palms Band of Mission Indians expressed concerns regarding construction of the Project limiting existing access into areas of tribal spiritual use, especially in the Mule Mountains. For example, DCRT may need to restrict non-Project personnel from entering the work area. While this may temporarily limit access, other access routes outside of the construction zone could continue to be used to accommodate entry to areas of spiritual use. If tribes communicate special occasions when access for religious ceremonies are planned, BLM can include provisions in the PA or the ROD that would limit construction activities in a particular area for short periods of time to accommodate the access (if an alternate route is not available).
- New Access: Tribal representatives from the CRIT, Fort Yuma Quechan Tribe, and the Twenty-Nine Palms Band of Mission Indians all expressed concerns regarding construction of the Project providing new access into sensitive areas that were previously inaccessible because of difficult entry. Tribal concerns were specific to increased OHV use that could lead to the vandalism and damage of cultural resources as a consequence of the Project. Effect resolution measures can be included in the PA and HPTPs.
- Native Infrastructure and Interconnection of the Cultural and Natural Environment: The CRIT, Fort Yuma Quechan Tribe, and Twenty-Nine Palms Band of Mission Indians expressed concerns regarding the interconnectedness of cultural resource sites, natural features of the landscape, and prehistoric trail networks. Concern was expressed regarding the cumulative effects of projects erasing the ancestral footprint of the tribes from the landscape. The direct and indirect effects of the Project on prehistoric properties and features of Native infrastructure (such as trails) are presented in Section 4.5. Effect resolution measures can be included in the PA and HPTPs.
- Places of Elevated Spiritual Importance to Tribes: The CRIT, Fort Yuma Quechan Tribe, and Twenty-Nine Palms Band of Mission Indians all expressed concerns regarding specific culturally sensitive areas, especially in the Mule Mountains and the Palo Verde Mesa. Concern was expressed regarding visual impacts of Project infrastructure to areas of elevated spiritual importance, such as the Ripley Intaglio Site. The direct and indirect effects of the Project on known places of elevated spiritual importance to tribes are discussed in Section 4.5.

- The Colorado River: The CRIT, Fort Yuma Quechan Tribe, and Twenty-Nine Palms Band of Mission Indians all expressed concern about the influence of the Colorado River on their spiritual belief and cultural history. As such, the Colorado River crossing and the indirect and direct effects of its siting on the landscape and potential impact to cultural resources are of great concern to the Indian tribes. Effect resolution measures can be included in the PA and HPTPs.
- Treatment of Human Remains: The CRIT expressed concern regarding the treatment of human remains and mortuary items. It is their belief that if human remains are encountered, they should not be removed but avoided entirely and left in place.
- Intrusion on Pristine Landscapes: The CRIT, Fort Yuma Quechan Tribe, and Twenty-Nine Palms Band of Mission Indians all expressed desire to restrict Project disturbance to areas already disturbed in order to limit impacts to pristine landscapes. Pristine and undisturbed landscapes are important to tribal spiritual life and are high-energy places that should be preserved.

The following are impact indicators identified specific to these issues of concern to Indian tribes:

- Project-related changes that would restrict Indian tribal access into traditional use areas and areas of elevated spiritual significance.
- Project-related changes that result in new access into areas where access had previously been limited. This would be the result of new access roads that would open up areas to OHV traffic and could result in vandalism of cultural resources.
- Project ground disturbance that results in the loss or destruction of prehistoric properties and erases the connection between individual sites and natural features of the landscape.
- Project-related changes that modify visual aspects of areas of elevated spiritual importance.
- Project-related changes that would modify visual aspects of the Colorado River.
- Project-related changes resulting in new disturbance in pristine environments that would affect the spiritual energy of a natural landscape.

Non-NRHP eligible cultural resources may be of importance to the tribes and must be considered when assessing impacts to Indian tribes. Impact magnitude and duration definitions specific to concerns to Indian tribes are defined in Table 4-6.

Table 4-6 Impacts of Concern to Indian Tribes: Magnitude and Duration Definitions

ATTRIBUTE OF IMPACT		DESCRIPTION SPECIFIC TO INDIAN CONCERNS
Magnitude	No impact	There would be no change to the current condition of areas of concern to Indian tribes as a result of Project construction, operation, maintenance, or decommissioning. There would be no effect to the existing access of specific areas; prehistoric or ethnohistoric cultural resources, areas of elevated spiritual importance,or the Colorado River; human remains; or pristine qualities of existing undeveloped landscapes.
Magnitude	Negligible	There would be no measurable change to the current condition of areas of concern to Indian tribes as a result of Project construction, operation maintenance, and decommissioning. While a change to the existing access of specific areas may occur, it would not affectthat access. Prehistoric or ethnohistoric cultural resources, areas of elevated spiritual concern and the Colorado River would not be affected to a measurable degree. There would be no measurable change to the pristine qualities of existing undeveloped landscapes.
	Minor	There would be a small, but measurable, change to the current condition of areas of concern to Indian tribes as a result of Project construction, operation maintenance and decommissioning. While a small change to the existing access of specific areas may occur, it would not negatively affect that access. While prehistoric or ethnohistoric cultural resources, areas of elevated spiritual concern, the Colorado River, and pristine qualities of existing undeveloped landscapes would be affected, it would not negatively affect those areas of concern.
	Moderate	An easily discernable and measurable change to the current condition of areas of concern to Indian tribes as a result of Project construction, operation, maintenance and decommissioning would occur. Changes to existing access would occur that would require a general effect resolution measure to minimize impacts. Prehistoric or ethnohistoric cultural resources, areas of elevated spiritual importance, the Colorado River, and the pristine qualities of existing undeveloped landscapes would be affected to a measurable degree.
	Major	A large, easily measurable change in condition to areas of concern to Indian tribes would occur as a result of Project construction, operation maintenance and decommissioning. Changes to existing access would occur that would require specific resolution measures to minimize impacts. Prehistoric or ethnohistoric cultural resources, areas of elevated spiritual importance, the Colorado River, and the pristine qualities of existing desert landscapes would be substantially altered. Human remains would be encountered by the Project.
Duration	Temporary	Limited to active construction or maintenance.
	Short-term	During construction (1.5–2 years), up to 10 years.
	long-term	More than 10 years.

4.6.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. The Project Area would not be affected by Project-related ground disturbance, and no effect to traditional native infrastructure and the interconnected natural landscape would occur. There would be no change to existing access, and new access would not be implemented. The Colorado River, pristine areas, and areas of elevated spiritual importance to tribes would not be affected. Changes in the environment would be limited to ongoing current actions or from disturbance associated with new actions unrelated to the Project.

4.6.4 Construction of Action Alternative Segments

4.6.4.1 Direct and Indirect Effects Common to All Action Alternatives

Direct Effects

Ground disturbance during construction is expected with the Proposed Action and all Action Alternatives and may affect areas of tribal concern. The magnitude and duration of any potential effect would vary depending on the type of disturbance and the area of tribal concern affected. The primary contributor of permanent ground disturbance would be related to structure and SCS construction as well as the construction of/improvements to access and spur roads. Temporary disturbance during Project construction may also have direct effects to areas of tribal concern. The effects of construction on areas of specific tribal concern are:

- Limitations to tribal access;
- Effects on traditional native infrastructure and the interconnected cultural and natural environment (i.e., traditional cultural landscape);
- New development in areas that are predominantly pristine;
- The location of the crossing of the Colorado River;
- Effects on areas of elevated spiritual importance; and
- Discovery and treatment of human remains.

Impacts to cultural resource sites would be the same as discussed in section 4.5. Should a tribal cultural landscape be identified during additional study, impacts to the landscape would be evaluated. Measures to resolve potential adverse effects to areas of tribal concern as a result of Project construction would be contained in the PA (Appendix 2D), HPTP, and the Tribal Participation Plan. Avoidance of impacts by final design and construction would be the preferred adverse effect resolution measure.

Indirect Effects

Indirect effects to cultural resources and areas of tribal concern could occur in areas where the construction of new roads into the Project Area would provide improved access into previously inaccessible areas. Improved access could lead to site damage by OHV and recreational use of these areas. Such damage could consist of vehicular damage to surface archaeological sites, and vandalism to sensitive areas. However, the number and types of cultural resources affected would vary by segment and alternative and would be assessed in detail when an alternative is selected. Effect resolution measures to minimize or resolve potential adverse effects to cultural resources and areas of tribal concern as a result of improved access would be included in the PA, ROD, and Project APMs and BMPs.

Indirect impacts would occur from the presence of structures in sight of areas of tribal concern by altering their setting, feeling, and association. However, the number and types of cultural resources affected would vary by segment and alternative and would be assessed in detail when an alternative is selected. Effect resolution measures to minimize the potential adverse effects of visual intrusions would be contained in the Project-specific PA, ROD, Project APMs and BMPs, and implemented by Project design.

Petroglyphs and intaglios are often areas of elevated spiritual importance to Indian tribes and are considered to be sensitive to indirect visual effects. Trails are of significance to Indian tribes as part of traditional native infrastructure associated with the interconnectedness of the cultural and natural environment, and also considered to be sensitive to indirect visual effects. To the extent that a site or prehistoric feature exhibits a high degree of integrity of setting, feeling, and association, the Project could affect its character-defining qualities. These potential effects would be assessed as part of the more detailed indirect effects analysis after BLM selects either a specific Action Alternative or discontinues further study by selecting the No Action Alternative. With selection of an Action Alternative, if effects to prehistoric or ethnohistoric cultural resource character-defining qualities are measurable beyond a small change, this would constitute a moderate to major long-term effect. While the features identified as concerns of Indian tribes are described in the segment and full-route alternative analysis, the nature of the effects are common to all (unless specified in the detailed effects analysis) and are not repeated in the segment analysis or full-route alternative analysis.

4.6.4.2 Direct and Indirect Segment-specific Effects

Potential effects to cultural resource sites by segment are discussed in Section 4.5 and Appendix 4, Tables 4.5-1 through 4.5-4. Direct and indirect segment-specific effects to areas of concern to Indian tribes are summarized in Table 4-7. This table summarizes information itemized in the cultural resources assessments of each segment (Section 4.5) and known tribal concerns (Section 3.6). Consultation and coordination with tribes is ongoing, therefore additional areas of concern to Indian tribes may be identified in the future.

Table 4-7 Direct and Indirect Segment-Specific Effects to Areas of Concern to Indian Tribes

Segment No.	Existing Access	New Access	Native Infrastructure and the Interconnectedness of the Cultural and Natural Environment	Places of Elevated Spiritual Importance	Colorado River	Treatment of Human Remains	Intrusion on Pristine Landscapes
PROPOSED ACTION SEGMENTS							
p-01							
p-02							
p-03							
p-04			X				
p-05							
p-06			X	X			
p-07			X				
p-08							
p-09			X				
p-10			X				
p-11			X				
p-12			X				
p-13			X	X			
p-14			X				
p-15e			X	X	X		
p-15w							
p-16							
p-17				X		X	
p-18				X			
ALTERNATIVE ACTION SEGMENTS							
d-01			X	X			
i-01							
i-02							
i-03			X				

Segment No.	Existing Access	New Access	Native Infrastructure and the Interconnectedness of the Cultural and Natural Environment	Places of Elevated Spiritual Importance	Colorado River	Treatment of Human Remains	Intrusion on Pristine Landscapes
i-04							
in-01							
x-01							
x-02a			X				
x-02b			X				
x-03							
x-04			X				X
i-05							
qs-01			X				
qs-02				X			
qn-01							
qn-02			X	X			
x-05			X				X
x-06			X				
x-07			X				
i-06				X			
i-07			X	X			
cb-01			X				X
cb-02			X				X
cb-03			X				
cb-04							X
cb-05			X				
cb-06			X				
x-08			X				
i-08s			X	X			
ca-01							
ca-02			X				

Segment No.	Existing Access	New Access	Native Infrastructure and the Interconnectedness of the Cultural and Natural Environment	Places of Elevated Spiritual Importance	Colorado River	Treatment of Human Remains	Intrusion on Pristine Landscapes
ca-04					X		
ca-05							
ca-06							
ca-07							
ca-09							
cb-10			X		X		
x-09							
x-19							
x-10							
x-11							
x-12							
x-13							
x-15			X				
x-16			X				
x-19							

Additional trails are known to be present in the Project Area and were utilized by the Mohave people and others. Major trails include the Coco-Maricopa Trail and the Salt Song Trail.

While the Salt Song Trail is metaphysical, and is not physically present on the landscape, consultation received from the Twenty-Nine Palms Band of Mission Indians notes that locations named in the Salt Songs may be tied to physical locations of importance in or around the Project (Madrigal [Twenty-Nine Palms Band of Mission Indians] to MacDonald [BLM], 5/12/2017).

Segments cb-10, ca-04, and p-15e cross the Colorado River. The CRIT, Fort Yuma Quechan Tribe, and Twenty-Nine Palms Band of Mission Indians all expressed concern about the Colorado River, and its influence on their spiritual belief and cultural history. As such, the Colorado River crossing and the indirect and direct effects of its siting on the landscape and potential impact to cultural resources are of great concern to the Indian tribes and should be addressed by an indirect effects analysis and continued government-to-government Section 106 consultation.

4.6.5 Operations, Maintenance, and Decommissioning

Though most impacts are expected to occur in association with construction, continuing Project-related activities and Project effects to areas of tribal concern would continue after construction, including periodic access and occasional ground disturbance as described in Chapter 2.

These maintenance and operating activities would have the potential to affect tribal concern if they take place in culturally sensitive areas by restricting access, or when scheduled at times of years that are spiritually significant to Indian tribes. Such activities should be scheduled in communication with the Indian tribes as to not interfere with tribal ceremonial functions or restrict access to places of tribal importance. These measures should be addressed in the PA or the ROD.

Ground disturbance associated with operation and maintenance activities may have the potential to affect areas of tribal concern if they take place in sensitive areas. These activities would be addressed in the PA.

In addition, Project operation and maintenance may result in the maintenance of access roads established during construction that provide the opportunity for continued access into areas that were previously inaccessible and/or used only intermittently. The maintenance of an expanded road network that could accommodate increased access should be regularly assessed to ensure that no unanticipated adverse effects or vandalism of sensitive cultural resources occur.

Given the length of time of the Project's use life and decommissioning, decommissioning would require further analysis in the future. It is anticipated that decommissioning activities would be addressed by future Section 106 analyses (Section 4.5.5).

4.6.6 Resolution Measures for the Resolution of Adverse Effects

Resolution measures for adverse effects to cultural resources and areas of concern to Indian tribes would be outlined in the PA and HPTPs developed for the treatment of adverse effects to specific historic properties (APM-CULT-01, APM-CULT-03; Appendix 2A, Section 2A.6) and

ongoing government-to-government Section 106 consultation. The PA would be finalized prior to the issuance of the Project ROD, and measures contained in the PA and HPTPs would be implemented prior to and during construction and post-construction during maintenance and operation activities (APM-CULT-01, BMP-CULT-02, BMP-CULT-04) (Appendix 2A, Section 2A.6).

Resolution measures for adverse effects to historic properties located within the CDCA Plan area are further outlined by specific compliance requirements discussed in Section 4.5.9. APMs and BMPs for minimizing effects to areas of tribal concern are contained in Appendix 2A, Section 2A.6.

4.6.7 Construction of Full Route Alternative and Subalternative Effects

4.6.7.1 Proposed Action

The Proposed Action follows the existing DPV1 transmission line; as a result, concerns to Indian tribes regarding new disturbance, access considerations, and intrusion on culturally significant environments would be minimized with the following exceptions:

Segment p-17 includes a site with exposed human remains and may indicate an increased potential for encountering additional human remains with ground disturbing activities; Indian tribes have indicated that human remains should not be disturbed and should remain in place. Impacts to concerns to Indian tribes would be major and long-term and could be resolved only through avoidance.

Segments p-17 and p-18 pass through a culturally significant area that Indian tribes do not want physically disturbed by construction, made more accessible to the public through new access roads, nor changed by visual intrusions of Project structures or facilities. Impacts to areas of concern to Indian tribes would be major and long-term.

Other segments associated with the Proposed Action are near intaglio sites and petroglyphs, both of which are site types of elevated spiritual importance to Indian tribes. If these features are measurably affected by visual changes, the sites would be permanently affected from a perspective of Indian tribes. Depending on the viewshed and structure placement, indirect visual impacts to intaglio sites and petroglyphs could range between negligible and major. If there are measurable effects, they would be long-term.

Previously recorded cultural resources sites that contain prehistoric trail segments are located on Segments p-04, p-06, p-07, p-09, p-10, p-11, p-12, p-13, p-14, and p-15e. Additional trails are known to be present in the western portion of the Project Area and were utilized by the Mohave people and others. Major trails include the Coco-Maricopa Trail and the Salt Song Trail (a metaphysical trail). Trails are of significance to Indian tribes as part of traditional native infrastructure associated with travel across the landscape. Trails may also be potentially sensitive to indirect visual effects. Depending on the viewshed and structure placement, indirect visual impacts to trail segments could range between negligible and major. If there are measurable effects, they would be long-term.

Segment p-15e crosses the Colorado River, which is of spiritual importance to Indian tribes. Visual considerations of the river crossing should be considered in an indirect effects analysis. Given that Segment p-15e parallels the existing DPV1 transmission line, visual effects may be minor to moderate, but would be long-term.

The Mule Tank Discontiguous Rock Art District containing petroglyphs and intaglios is located within the 1-mile analysis corridor of Segments p-17 and p-18. The Ripley Intaglio Site is located within the 5-mile indirect effects analysis area of Segment p-15e. Potential visual effects to this site have been expressed by the Quechan Tribe of the Fort Yuma Indian Reservation.

Resolution Measures

Resolution measures for concerns to Indian tribes would be developed and outlined in the PA, HPTPs, or the ROD, and identified during ongoing Section 106 government-to-government consultation. The PA would be finalized prior to the issuance of the Project ROD, and measures contained in the PA and HPTPs would be implemented prior to and during construction and post-construction during maintenance activities and operations.

In addition, APMs and BMPs as well as stipulations that would be a part of the ROD outline specific protocols for areas of tribal concern. These APMs, BMPs, and stipulations address, but are not limited to, protocols specific to coordination and communication with Indian tribes, roads and access, compliance with applicable laws, and confidentiality, among other procedures that may resolve potential adverse effects.

4.6.7.2 Alternative 1: I-10 Route

Previously recorded cultural resources sites that contain prehistoric trail segments are located on Alternative 1 Segments i-03, qs-01, i-06, i-07, i-08s, and ca-09. The importance of trails to Indian tribes and the type and magnitude of effects would be the same as those described for the Proposed Action.

Two sites located along Segment i-07 (a component of Alternative 1) contain intaglios. In addition, a site with an intaglio and prehistoric and historic petroglyphs is located within the 1-mile analysis corridor of Segment qs-02 and petroglyph sites are located within the 1-mile analysis corridor of Segment i-06. The importance of intaglios and petroglyphs to Indian tribes and the type and magnitude of effects would be the same as those described for the Proposed Action.

Segment ca-04 crosses the Colorado River. The Colorado River is of spiritual importance to Indian tribes. Visual considerations of the river crossing should be considered in an indirect effects analysis. Given that Segment ca-04 parallels the existing I-10 freeway corridor, visual effects may be minor to moderate, but would be long-term.

Resolution Measures

Resolution measures for concerns to Indian tribes would be the same as those described for the Proposed Action.

Subalternatives to Alternative 1

Subalternative 1A

Previously recorded cultural resources sites that contain prehistoric trail segments are located within 0.5-mile of Segments x-02a and x-02b. Segment i-01 (Alternative 1) has no known concerns to Indian tribes. As a result, Subalternative 1A has a greater potential to impact areas of known concern to Indian tribes.

Subalternative 1B

Previously recorded cultural resources sites that contain prehistoric trail segments are located within the 1-mile corridor of Segments x-02a and x-02b. Segment i-01 has no known concerns to Indian tribes. As a result, Subalternative 1B has a greater potential to impact areas of known concern to Indian tribes.

Subalternatives 1C, 1D, and 1E.

No concerns to Indian tribes have been identified for Subalternatives 1C, 1D, and 1E.

4.6.7.3 Alternative 2: BLM Utility Corridor Route

Previously recorded cultural resources sites that contain prehistoric trail segments are located on Segments i-03, qs-01, p-09, p-10, p-11, p-12, p-13, p-14, p-15e, p-16, x-07, x-15, x-16, and ca-09. The importance of trails to Indian tribes and the type and magnitude of effects would be the same as those described for the Proposed Action.

Alternative 2 includes segments near intaglios. The Ripley Intaglio Site is located within the 5-mile indirect effects analysis area of Segment p-15e. Another site containing an intaglio is within the 200-foot analysis corridor of Segment p-13. The importance of intaglios to Indian tribes and the type and magnitude of effects would be the same as those described in the Proposed Action.

Segment p-15e crosses the Colorado River. The Colorado River is of spiritual importance to Indian tribes. Visual considerations of the river crossing should be considered in an indirect effects analysis. Given that Segment p-15e parallels the existing DPV1 transmission line, visual effects may be minor to moderate, but would be long-term.

Resolution Measures

Resolution measures for concerns to Indian tribes would be the same as those described for the Proposed Action.

Subalternatives to Alternative 2

Subalternative 2A

Trails may potentially exist in Segments d-01, x-02a, and x-02b. Additionally, the Eagletail Petroglyph Site, is within the 5-mile indirect effects analysis area of Segment d-01. Segments p-01 and i-01 (Alternative 2) have no known concerns to Indian tribes. As a result, Subalternative 2A has a greater potential to impact areas of known concern to Indian tribes.

Subalternative 2B

Trails may potentially exist in Segment p-04. Segment i-01 (Alternative 2) has no known concerns to Indian tribes. As a result, Subalternative 2B has a greater potential to impact areas of known concern to Indian tribes.

Subalternative 2C

Trails may potentially exist in Segments cb-02, cb-06, p-11, and p-12. As a result, potential impacts to areas of concern to Indian tribes are comparable between Subalternative 2C and Alternative 2.

Subalternative 2D

Trails may potentially exist in Segments cb-03 and p-11. As a result, potential impacts to areas of concern to Indian tribes are comparable between Subalternative 2D and the segment it replaces.

Subalternative 2E

Trails may potentially exist in Segment ca-02. As a result, potential impacts to areas of Indian tribal concern are comparable between Subalternative 2E and the segments it replaces.

4.6.7.4 Alternative 3: Avoidance Route

Segments cb-01, x-05, and cb-04 cross through areas of largely undisturbed desert where new access and new visual intrusions would be introduced. As a result, potential impacts to concerns to Indian tribes regarding new access and intrusion on pristine landscapes would be moderate to major and long-term.

Previously recorded cultural resources that contain prehistoric trail segments are potentially located on Segments i-03, p-07, p-09, p-14, x-05, cb-01, cb-05, ca-09, and cb-10. The importance of trails to Indian tribes and the type and magnitude of effects would be the same as those described in the Proposed Action.

Segment cb-10 crosses the Colorado River, which is of spiritual importance to Indian tribes. Visual considerations of the river crossing should be considered. Given that Segment cb-10 is located in an agricultural landscape, visual effects may be moderate to major, but would be long-term.

Resolution Measures

Resolution measures for concerns to Indian tribes would be the same as those described for the Proposed Action.

Subalternatives to Alternative 3

Subalternative 3A

Trails may potentially exist in Segments d-01, x-02a, and x-02b. Additionally, the Eagletail Petroglyph Site, is within the 5-mile indirect effects analysis area of Segment d-01. Segments p-

01 and i-01 (Alternative 3) have no known concerns to Indian tribes. As a result, Subalternative 3A has a greater potential to impact areas of known concern to Indian tribes.

Subalternative 3B

There are no known issues of concern to Indian tribes in Segments i-01 or i-02. Trails may potentially exist in Segment p-04 (Alternative 3). As a result, Subalternative 3B has a lower potential to impact areas of known concern to Indian tribes.

Subalternative 3C

Trails may potentially exist in Segment x-04 and i-03. As a result, potential impacts to areas of concern to Indian tribes are comparable between Subalternative 3C and Alternative 3.

Subalternative 3D

No issues of concern to Indian tribes have been identified for Subalternative 3D or Alternative 3, and effects to areas of concern to Indian tribes would be comparable.

Subalternative 3E

Subalternative 3E consists of Segments qs-01 and x-07. It would replace Segment x-05, and must be combined with Subalternatives 3D and 3G, or 3J. Subalternative 3E and Segment x-05 may all contain trails; however, Segment x-05 crosses through an undeveloped landscape that would potentially impact concerns to Indian tribes regarding new access and intrusion on pristine landscapes. As a result, Subalternative 3E appears to have a lesser impact to areas of concern to Indian tribes. While Subalternative 3E needs to be assessed in conjunction with its pairing with Subalternatives 3D and 3G, or 3J, none of these subalternatives have known issues of concern to Indian tribes.

Subalternative 3F

Subalternative 3F consists of Segment x-06. It would replace Segment x-05 (Alternative 3) and would need to be combined with Subalternatives 3D and 3G, or 3J. Subalternative 3F and Segment x-05 contain trails, however, Segment x-05 crosses through an undeveloped landscape and that would potentially impact concerns to Indian tribes regarding new access and intrusion on pristine landscapes. As a result, Subalternative 3F appears to have a lesser impact to areas of concern to Indian tribes. While Subalternative 3F needs to be assessed in conjunction with its pairing with Subalternatives 3D and 3G, or 3J, none of these subalternatives have known issues of concern to Indian tribes.

Subalternative 3G

Subalternative 3G consists of Segment qn-01. No known issues of concern to Indian tribes are present on Segment qn-01. However, Subalternative 3G should be further assessed in conjunction with its pairing with Subalternatives 3D, 3E, 3F, 3H, and/or 3J.

Subalternative 3H

Subalternative 3H consists of Segment qn-02. No known issues of concern to Indian tribes are present on Segment qn-02, although one site located within the 1-mile analysis corridor of Segment qn-02 contains an intaglio. However, Subalternative 3H should be further assessed in conjunction with its pairing with Subalternatives 3D and 3L.

Subalternative 3J

Subalternative 3J consists of Segment i-05. No known issues of concern to Indian tribes are present on Segment i-05. However, Subalternative 3J should be further assessed in conjunction with its pairing with Subalternatives 3E, 3F, or 3G, and 3H.

Subalternative 3K

Trails may potentially exist on Subalternative 3K. There are no known issues of concern to Indian tribes on Segment cb-04 (Alternative 3). As a result, Subalternative 3K has a greater potential to impact areas of known concern to Indian tribes.

Subalternative 3L

Trails may potentially exist in Subalternative 3L and the segments of Alternative 3 it replaces. As a result, potential impacts to areas of concern to Indian tribes are comparable between Subalternative 3L and the segments it replaces. Potential impacts must be assessed in conjunction with its pairing with Subalternative 3H, although Subalternative 3H has no known areas of concern to Indian tribes.

Subalternative 3M

The crossing at the Colorado River in Segment p-15e parallels the existing DPV1 transmission line so the visual impact of the crossing would be less intrusive than that of Alternative 3. Subalternative 3M appears to have a similar potential to impact areas of known concern to Indian tribes.

4.6.7.5 Alternative 4: Public Lands Emphasis Route

Previously recorded cultural resources sites that contain prehistoric trail segments are potentially located on Segments d-01, x-04, x-06, x-09, p-10, p-13, p-14, cb-02, cb-06, and ca-09. The importance of trails to Indian tribes and the type and magnitude of effects would be the same as those described in the Proposed Action.

The Eagletail Petroglyph Site, potentially sensitive to indirect visual impacts, is located within the 5-mile indirect effects analysis area of Segment d-01 in the Eagletail Mountains. Depending on the viewshed and structure placement, indirect visual impacts to this property could range between negligible and moderate. If there is a measurable effect, it would be long-term.

With the exception of Segment x-04, the eastern portion of Alternative 4 crosses through areas largely disturbed by prior actions, including existing utilities such as transmission lines, the I-10 corridor, agricultural areas, and the CAP canal. Existing access could be utilized through much of this area, thus minimizing new access. The proximity of new transmission line structures near

existing utilities and transportation corridors would not eliminate the visual effect but may create additional intrusions.

Segment x-04 crosses through an area of largely undisturbed desert where new access and new visual intrusions would be introduced. As a result, potential impacts of tribal concerns could occur and would require a more detailed assessment by an indirect effects analysis in consideration of Project design details. If these effects are measurable beyond a small change, they would constitute a moderate to major long-term effect.

Alternative 4 includes segments near intaglios. The Ripley Intaglio Site is located within the 5-mile indirect effects analysis area of Segment p-15e. Another site containing an intaglio is within the 200-foot analysis corridor of Segment p-13. The importance of intaglios to Indian tribes and the type and magnitude of effects would be the same as those described in the Proposed Action.

Segments cb-02 and cb-04 cross through areas of largely undisturbed desert where new access and new visual intrusions would be introduced. As a result, potential impacts to concerns to Indian tribes regarding new access and intrusion on pristine landscapes would be moderate to major and long-term.

Segment p-15e crosses the Colorado River, which is of spiritual significance to Indian tribes. Visual considerations of the river crossing should be considered in an indirect effects analysis. Given that Segment p-15e parallels the existing DPV1 transmission line, visual effects may be minor to moderate, but would be long-term.

Resolution Measures

Resolution measures for concerns to Indian tribes would be the same as those described for the Proposed Action.

Subalternatives to Alternative 4

Subalternative 4A

There are no known issues of concern to Indian tribes on Subalternative 4A and is less likely to impact areas of known concern to Indian tribes.

Subalternative 4B

Subalternative 4B would have impacts to areas of concern to Indian tribes that are comparable between Subalternative 4B and the segment of Alternative 4 it replaces.

Subalternative 4C

Subalternative 4C has no known issues of concern to Indian tribes on Subalternative 4C. However, potential impacts must be further assessed in conjunction with pairing Subalternative 4C with Subalternatives 4D or 4J.

Subalternative 4D

Both segments of Subalternative 4D are projected to contain trails; in addition, Segment x-05 crosses through an undeveloped landscape that would potentially impact concerns to Indian

tribes regarding new access and intrusion on pristine landscapes. Subalternative 4D would be paired with Subalternatives 4C or 4J, which have no known concerns to Indian tribes. Because it crosses through an undeveloped landscape, Subalternative 4D would have a greater potential to impact areas of known concern to Indian tribes than the segments of Alternative 4 it would replace.

Subalternative 4E

Subalternative 4E is projected to contain trails and both Segments cb-01 and cb-02 (Alternative 4) cross through undeveloped landscapes that would potentially impact concerns to Indian tribes regarding new access and intrusion on pristine landscapes. As a result, potential impacts to areas of concern to Indian tribes are comparable between Subalternative 4E and the segments of Alternative 4 it replaces.

Subalternative 4F

Subalternative 4F is projected to contain trails. As a result, potential impacts to areas of concerns to Indian tribes are comparable between Subalternative 4F and the segments of Alternative 4 it replaces.

Subalternative 4G

Both segments of Subalternative 4G are projected to contain trails, as does Segment cb-02 of Alternative 4. However, Segment cb-02 and cb-04 of Alternative 4 cross through undeveloped landscapes that would potentially impact concerns to Indian tribes regarding new access and intrusion on pristine landscapes. As a result, Subalternative 4G would have a lesser potential to impact areas of known concern to Indian tribes than the segments of Alternative 4 it replaces.

Subalternative 4H

Subalternative 4H, which includes Segment i-07, is projected to contain trails, and the Limekiln Wash Intaglio is within the segment's 200-foot analysis corridor. As a result, Subalternative 4H has high potential to have a major to moderate effect on areas of concern to Indian tribes. These potential impacts must be further assessed in conjunction with the pairing of Subalternative 4H with Subalternatives 4G and 4K, which also are identified as including features of concern to Indian tribes.

Subalternative 4J

There are no known issues of concern to Indian tribes on Subalternative 4J. Any potential impacts must be further assessed in conjunction with the pairing of Subalternative 4J with Subalternative 4H, which has a high potential to have a moderate to major effect on areas of concern to Indian tribes.

Subalternative 4K

Subalternative 4K is projected to contain trails; as a result, Subalternative 4K demonstrates the potential to impact areas of known concern to Indian tribes. The potential effect to areas of concern to Indian tribes by Subalternative 4K must be further evaluated in conjunction with its

potential pairing with Subalternative 4H, which also has areas of concern to Indian tribes, and Subalternative 4N.

Subalternative 4L

Subalternative 4L contains trails and crosses the Colorado River in an agricultural landscape. Because the Colorado River is of spiritual significance to Indian tribes, the visual impacts of this crossing would need to be assessed. As a result, Subalternative 4L would have potential to impact areas of known concern to Indian tribes. The potential effect to areas of concern to Indian tribes by Subalternative 4L must be further evaluated in conjunction with its pairing with Subalternative 4M, although no areas of concern have been identified for Subalternative 4M.

Subalternative 4M

There are no known issues of concern to Indian tribes on Subalternative 4M or the segment of Alternative 4 it replaces. The potential effect to areas of concern to Indian tribes by Subalternative 4M must be further evaluated in conjunction with its pairing with Subalternative 4L.

Subalternative 4N

There are no known issues of concern to Indian tribes on Subalternative 4N. The potential effect to areas of concern to Indian tribes by Subalternative 4N must be further evaluated in conjunction with the concerns to Indian tribes identified for Subalternatives 4H, 4K, and 4M.

Subalternative 4P

Segments p-17 and p-18 of Subalternative 4P contain numerous issues of concern to Indian tribes. Human remains are known to exist along Segment p-17, and the area surrounding both segments is still utilized by modern Indian tribes. Additionally, the Mule Tank Discontiguous Rock Art District, is located within the 1-mile analysis corridor of Segment p-17 and would need to be evaluated for visual impacts. While trails are projected to occur along Alternative 4, the potential impact to areas of concern to Indian tribes is substantially greater on Subalternative 4P.

4.6.7.6 Agency Preferred Alternative

Within the Preferred Alternative, previously recorded cultural resources sites that contain prehistoric trail segments are located on Segments i-03, p-09, p-10, p-11, p-12, p-13, p-14, p-15e, p-16, x-15, x-16, and ca-09. The importance of trails to Indian tribes and the type and magnitude of effects would be the same as those described in Section 4.6.7.1. In addition, Segment x-05 crosses through an undeveloped landscape that would potentially impact concerns to Indian tribes regarding new access and intrusion on pristine landscapes.

The Preferred Alternative includes segments near intaglios. The Ripley Intaglio Site is located within the 5-mile indirect effects analysis area of Segment p-15e. Another site containing an intaglio (Limekiln Wash) is within the 200-foot analysis corridor of Segment p-13. The importance of intaglios to Indian tribes and the type and magnitude of effects would be the same as those described in the Proposed Action.

Segment p-15e crosses the Colorado River. The Colorado River is of spiritual importance to Indian tribes. Visual considerations of the river crossing should be considered in an indirect effects analysis. Given that Segment p-15e parallels the existing DPV1 transmission line, visual effects may be minor to moderate, but would be long-term.

Resolution Measures

Resolution measures for concerns to Indian tribes would be the same as those described for the Proposed Action.

4.6.8 Residual Impacts

The construction of a new transmission line on the landscape would have some residual effect on issues of concern to Indian tribes because of the permanence of the infrastructure for the life of the Project. In particular, the visual effects of the transmission line infrastructure would have a residual impact on the environment and continue to contribute to the erasing the ancestral footprint of the Indian tribes from the landscape. The residual effect would be more pronounced in locations where the transmission line does not parallel existing infrastructure. Visual aspects can also be addressed through Project design and resolution of adverse effects, but the changes to environmental conditions cannot be avoided.

Secondly, the access requirements for operations and maintenance leave the residual possibility of increasing recreational access into areas that may currently be visited infrequently. This increases the risk of inadvertent damage or vandalism to features significant to Indian tribes. Access concerns may be addressed in the PA or the ROD by including specific protocols to restrict access into sensitive areas by barrier placement or providing regular patrols to prevent damage or vandalism.

4.6.9 CDCA Plan Compliance

The same CMAs, BMPs, and APMs discussed under Section 4.5.9 above are applicable to areas of concern of Indian tribes. CMAs LUPA-CUL-4, LUPA-TRANS-CUL-1 through LUPA-TRANS-CUL-6, and DFA-VPL-CUL-1 through DFA-VPL-CUL-7 would apply to the Project (Appendix 2C). DFA-VPL-CULT-7 would also apply to the Project (Appendix 2C) and would be satisfied by information provided in Chapter 3 and Chapter 5, Sections 5.3 and 5.5.2, as well as Appendix 2D.

LUPA-CUL-4 is specific to the Project design to minimize impacts on cultural resources, including those places of elevated cultural or spiritual significance to Federally recognized tribes. Compliance with LUPA-CUL-4 would be satisfied with BMP-CULT-03, which states that the applicant would follow avoidance and stipulations outlined in the PA and appropriate HPTPs, and APM-CULT-01 and APM-CULT-02 (Appendix 2A, Section 2A.6), in which the applicant commits to following those stipulations.

LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 are specific to the responsibility of the applicant to pay for costs associated with the Project's cultural resources compliance. Compliance with LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 would be satisfied by APM-CULT-01 and APM-CULT-02 (Appendix 2A, Section 2A.6), in which the applicant commits to conducting a cultural

resources inventory of the direct and indirect APE, preparing HPTPs, and conducting cultural resource monitoring during Project construction, operations, maintenance, and decommissioning (as appropriate) to meet stipulations outlined in the PA (Appendix 2D).

LUPA-TRANS-CUL-2 and DFA-VPL-CUL-2 are specific to the applicant's payment of compensatory mitigation fees for cumulative and indirect effects to historic properties as a result of Project construction, operations, maintenance and decommissioning. Compliance with LUPA-TRANS-CULT-2 and DFA-VPL-CUL-2 would be satisfied by BMP-CULT-05 (Appendix 2A, Section 2A.6), which outlines the fee structure of the compensatory mitigation fee. The compensatory mitigation fee structure is also outlined in the stipulations contained within the PA (Appendix 2D).

LUPA-TRANS-CUL-3 and DFA-VPL-CUL-3 are specific to the applicant's payment of management fees as part of the compensatory mitigation fee contained in LUPA-TRANS-CUL-2 and DFA-VPL-CUL-2, respectively. Compliance with LUPA-TRANS-CUL-3 and DFA-VPL-CUL-3 would be satisfied by BMP-CULT-05 (Appendix 2A, Section 2A.6), which outlines the fee structure of the management fee as part of the compensatory mitigation fee. The management fee and compensatory mitigation fee structure is also outlined in the stipulations contained within the PA (Appendix 2D).

LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 are specific to the development of a cultural resources sensitivity analysis based on existing cultural resources data in the CDCA Plan area for consideration in Project planning and alternative selection. Compliance with LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 would be satisfied with BMP-CULT-06 (Appendix 2A, Section 2A.6). The BLM has prepared a sensitivity analysis (Kline 2017).

LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 are specific to the provision of a statistically significant cultural resources sample survey to be used in Project planning. Compliance with LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 would be satisfied by BMP-CULT-07 (Appendix 2A, Section 2A.6), which requires cultural resources Class III survey of Segments p-17 and p-18 to be conducted during the NEPA and CEQA analyses to meet the conditions of LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5. The Class III survey of Segments p-17 and p-18 has been conducted.

LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 is specific to the applicant's justification to consider areas sensitive to cultural resources in NEPA and CEQA analyses. Compliance with LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 would be satisfied by BMP-CULT-08 (Appendix 2A, Section 2A.6), which requires such justification from the Project applicant.

DFA-VPL-CUL-7 speaks to completion of the Section 106 process. Compliance with DFA-VPL-CUL-7 is satisfied in Appendix 3, Section 3.6.1.1 and Appendix 5, Section 5.3. Appendix 3, Section 3.6.1.1 presents the regulatory requirement of the NHPA that includes Section 106. Appendix 5, Section 5.5.2 summarizes the process of drafting the PA. Appendix 5, Section 5.3 presents the efforts of consultation with Indian tribes. Appendix 2D is the PA for the Project.

4.6.10 Unavoidable Adverse Effects

Changes to the landscape and access changes would be an unavoidable adverse effect if concerns to Indian tribes cannot be avoided by Project design, APMs, BMPs, and resolution measures. The CRIT have expressed that the Project would result in adverse impacts on the CRIT that appreciably exceed those of the general population, as development impacts their ancestral ties to the land.

Prior to construction, continuing Section 106 consultation would be required to identify areas of elevated spiritual importance to Indian tribes to identify these areas for avoidance. Class III cultural resource surveys would be conducted to identify sites that need to be avoided or addressed by adverse effect resolution measures. Monitoring during construction would minimize the potential for inadvertent damage to intact subsurface deposits that could not be identified during Class III surveys. However, if excavation damages cultural features or disturbs human remains, the damage done would be unavoidable.

Areas of concern to Indian tribes that are sensitive to visual change would need to be assessed so that impacts could be minimized through analysis of the viewshed and structure placement. An unavoidable impact would occur to the extent that transmission line infrastructure can be seen from intaglios, petroglyphs, or other resources of elevated concern to Indian tribes. Project elements that introduce intrusion to pristine landscapes and the crossing of the Colorado River would also constitute an unavoidable adverse effect to Indian tribes.

Unavoidable adverse effects may also occur if the Project changes existing access to culturally important areas to tribes, or if new access results in damage to resources that have previously been largely inaccessible.

4.6.11 Cumulative Effects

The Project Area is crossed by numerous utility and transportation corridors, including the I-10 corridor, SR 78, US 95, SR 95, the DPV1 transmission line, numerous local transmission and distribution lines, solar facilities, and the El Paso natural gas pipeline, as well as local roads. The landscape has been further altered by the development of the Town of Quartzsite and the City of Blythe, and the expansion of historic and modern agriculture. Future plans for the area include the development of additional large solar facilities in the western portion of the Project Area (Appendix 3, Table 3.12-2).

Various tribes have been consulted and informed of the Project. Tribes have expressed interest and concern about potential effects to the native landscape, the viewshed, trails and elements of Native infrastructure across the desert, cultural resource sites, and areas of elevated spiritual importance that are within their traditional territories and may have been inhabited or used by their ancestors. Noted concerns include the transmission lines and solar facilities within the viewshed. Past actions affecting concerns of Indian tribes include vandalism and looting of prehistoric sites, unauthorized excavation of prehistoric sites, recreational use that impacts cultural resources, roadway and infrastructure construction, and urban and rural developments. Past, present, and reasonably foreseeable future development (Appendix 3, Tables 3.12-1 and 3.12-2; and Appendix 7, Figure 3.12-1,) would contribute to cumulative impacts to concerns of Indian tribes in the region.

All of this development has had the effect of substantially altering the native landscape of affiliated Indian tribes. Large linear projects, such as DPV1 and the construction of I-10 and the CAP canal have had the effect of altering the viewshed of the native landscape and disrupting the trails and elements of traditional native infrastructure across the desert. In particular, the DPV1 transmission corridor crosses the viewshed of the Mule Tank Discontiguous Rock Art District. Additional structures along Segments p-17 and p-18 in the line of site of this resource would continue to cumulatively affect the viewshed. The increase in visual degradation, combined with all previous disturbances and developments, may result in a moderate to major cumulative impact on the Mule Tank Discontiguous Rock Art District.

Future projects in the western portion of the Project Area include large solar facilities (Blythe Mesa Solar, Desert Quartzite Solar, and Crimson Solar Projects) and the Blythe Energy Power Plant and Sonoran Energy Project, all of which cumulatively affect issues of concerns to Indian tribes, including potential visual impacts to the Mule Mountains, an area of importance to the tribes. These cumulative effects are manifest in terms of the loss of pristine environment, erasure of the tribal footprint on the landscape, vandalism of archaeological sites due to increased OHV traffic and visitation, potential restriction to areas of elevated spiritual importance for Indian tribal ceremonies, and the disruption of Native infrastructure. Cumulative impacts to cultural resource sites would be the same as those described in Section 4.5.11. Impacts to prehistoric cultural resources that convey the significance of the landscape, including those not eligible for the NRHP and historic properties mitigated through data recovery, cumulatively impact the cultural landscape and linkage. The development of the Project further contributes to these cumulative effects. Minimization of cumulative effects of this Project would be addressed through implementation of the PA which directs avoidance of sites and minimization of the Project footprint before any consideration of mitigation of sites and data recovery.

4.6.12 Irreversible and Irretrievable Commitment of Resources

Given the strong ancestral ties of Indian communities to the landscape of the Project, construction related to the Project that would measurably affect existing tribal access into spiritual areas; enhance public access into previously remote areas and increase the risk of resource damage; result in the loss or diminishment of the Indian cultural landscapes, TCPs, and pristine areas; or result in the disturbance of human remains would constitute an irreversible and irretrievable impact to Indian values. Impacts to cultural resources, including those not eligible for the NRHP, as well as sites mitigated, represent an irreversible and irretrievable commitment of those resources. However, provisions of the PA (Appendix 2D) requiring detailed ethnographic and ethnobotanical studies, and cultural landscape overviews, would be a benefit (positive impact) to the tribes by compiling their traditional use of the landscape into a reference for future generations.

4.6.13 Relationship of Short-term Uses and Long-term Productivity

The short-term use of the ROW during construction of the Project could result in measurable effects to areas of tribal concern by altering existing tribal access into spiritual areas; enhancing public access into previously remote areas; the loss or diminishment of the tribal cultural landscapes, TCPs, and pristine areas; or the disturbance of human remains. If the short-term use

of the ROW results in the measurable alteration of these areas of concern to Indian tribes, the long-term potential of their qualities would be reduced or eliminated.

4.7 LAND USE

4.7.1 Introduction

Potential impacts to land use in this section are discussed in terms of land ownership, compliance with management of lands, and land use authorizations and ROWs (including lands and realty actions).

4.7.2 Methods for Analysis

4.7.2.1 Analysis Area

The analysis area for land use includes a 4,000-foot corridor encompassing the Project. Because there is some flexibility in final siting of the temporary use areas (construction), Project structures, and SCS, this analysis area includes all potential disturbance areas along with areas where indirect effects could occur.

4.7.2.2 Assumptions

No assumptions were made when performing the analysis of Project impacts on land use.

4.7.2.3 Environmental Effect Indicators, Magnitude, and Duration

Impacts to land use described in this section would occur if the Project would:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with existing utility ROWs;
- Conflict with existing or authorized land uses, specifically where the Project would create a direct long-term impact;
- Physical conflict with existing residential, commercial, industrial, military, or agricultural uses (i.e., displacement of homes, businesses, solar energy facilities, center-pivot irrigation agriculture fields);
- Conflict with planned land uses, specifically residential subdivisions or other sensitive land uses at the final plat approval stage;
- Existing land uses not being restored to allow for pre-construction uses or activities (for areas disturbed and not containing permanent structures);
- Significant nuisance impacts to existing land uses; or
- Interference with military operations at the YPG.

Impacts to land use may be negligible, minor, moderate, or major, and may have durations that are qualified as temporary, short term, or long term (Table 4-8).

Table 4-8 Land Use Impact Magnitude and Duration Definitions

ATTRIBUTE OF IMPACT		DESCRIPTION SPECIFIC TO LAND USE
Magnitude	Negligible	Very little effect on land uses such that the effect would not be perceptible to a human observer or user. Action would be in compliance with land management plans and zoning and would not conflict with existing ROWs or other authorized uses. Less than 5 percent of a land area associated with a particular use would be affected.
	Minor	Action would be in compliance with land management plans and zoning and would not conflict with existing ROWs or other authorized uses. Less than 10 percent of a land area associated with a particular use would be affected.
Magnitude	Moderate	Action may or may not be in compliance with land management plans and zoning and may or may not conflict with existing ROWs or other authorized uses. Less than 25 percent of a land area associated with a particular use would be affected.
	Major	Action would not be in compliance with land management plans and zoning or would conflict with existing ROWs or other authorized uses. More than 25 percent of a land area associated with a particular use would be affected.
Duration	Temporary	Limited to active construction or decommissioning.
	Short-term	10 years or less.
	Long-term	More than 10 years.

4.7.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. The BLM-administered land on which the Project is proposed would continue to be managed as it currently exists. Lands in the analysis area would remain as is, which is primarily undeveloped desert land available for grazing, subject to existing closures or restrictions. Current land uses in the analysis area described in Section 3.7 would continue under the No Action Alternative. There would be no changes that would alter existing land uses beyond current conditions.

4.7.4 Construction of Action Alternative Segments

4.7.4.1 Direct and Indirect Effects Common to All Action Alternatives

Construction

BLM-authorized land uses such as roadways, transmission lines, utilities, and pipelines; oil, gas, solar energy, and mining leases; and other permits, leases, and easements (HDR 2017d); may be temporarily affected by changes in access, but these uses would not be precluded by construction of the Project. For non-BLM lands, ROWs would be obtained as easements or leases, as appropriate. Encroachment permits would be obtained for the crossing of Federal, state, and county roadways, as applicable.

4.7.4.2 Direct and Indirect Segment-specific Effects

Segment-specific discussions that follow are broken out by Proposed Action and Action Alternatives, and are presented for:

- Those segments that were found not to meet the criteria of an appropriate use on the Kofa NWR and would not be compatible with the goals of the refuge;
- Segments that would not be within a designated utility corridor; and,
- Segments that would conflict with a land use plan.

An amendment to the CDCA Plan would be required for all California segments to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 2C). Segments that would include a land use plan amendment to address issues with visual resources management are described in Section 4.11.8.

Proposed Action Segments Segment p-06 would cross 24 miles of the Kofa NWR; however, the Project was not found to be an appropriate use within the goals of the refuge and therefore approval to cross the Kofa NWR would not be granted to DCRT (Appendix 1A). The authorization of a ROW within the Kofa NWR requires a “Finding of Appropriateness of a Refuge Use” to determine whether the use meets the criteria for an appropriate use. The Kofa NWR was established in 1939 “for the conservation and development of natural wildlife resources, with an emphasis on conservation of desert bighorn sheep” (USFWS 2017). Management objectives include to “maintain and enhance the natural diversity of flora and fauna…” and to “recover population and maximize genetic diversity of desert bighorn sheep; reintroduce Sonoran pronghorn and establish a viable population; manage fire; manage wildlife waters; and prevent establishment of invasive species” (USFWS 2017). Upon review of the application for the ROW for this segment, the USFWS determined that the Project does not meet the criteria for an appropriate use because it “does not promote wildlife-dependent recreation and does not support the purpose for which the refuge was established and the mission of the NWR System” (USFWS 2017).

The USFWS (2017) found that the construction and maintenance of the Project on the Kofa NWR:

- "May cause habitat fragmentation, degrade habitat quality through introduction of contaminants, disrupt wildlife movement corridors, alter hydrology, facilitate introduction of invasive species, and disturb wildlife";
- "Would conflict with the legal requirements to maintain biological integrity, diversity, and environmental health";
- "Will create additional traffic on the east-west road across the northern part of Kofa NWR…" that "will increase the likelihood of off-road vehicular incursions";
- "Would increase fire danger from the power line directly";
- Would be "damaging and detrimental to the quality of wildlife-dependent recreation including hunting, wildlife viewing, wildlife photography, and interpretation"; and that
- The cumulative and incremental impacts of the new proposed ROW in addition to the existing power line and pipeline ROWs may pose the greatest impact to the refuge (USFWS 2017).

The Project was found not to be an appropriate use of the refuge; therefore, this would be a major impact on land use if the Project were approved.

Alternative Segments

- Segments x-01, x-02b, x-03 and x-04 cross BLM-administered land that is not within a designated utility corridor.
- Segments qn-02, x-05, and x-06, and a portion of the BLM-administered land in Segments qs-01 and qs-02, would not be within a designated utility corridor.
- None of the BLM-administered land in Segments cb-01, cb-02, cb-04, cb-05, and cb-06 would be within a designated utility corridor.
- A portion of Segment i-03 would fall approximately 0.2-mile outside of a designated corridor
- Alternative Segments x-01 through x-04, Segments x-05 and x-06, and Segments cb-01, cb-02, cb-04, cb-05, and cb-06, would not be consistent with the La Paz County Zoning Plan.
- Alternative Segment qn-02 crosses a Tier III growth area, which is identified for growth beyond 2035. This would be a minor, long-term impact on land use and this segment would not be in compliance with the Town of Quartzsite General Plan.

4.7.5 Operations, Maintenance, and Decommissioning

The presence of the Project during operations would have effects on land use plan compliance and land use authorizations and rights. The presence of the Project would also have negligible to minor long-term effects on residential, agricultural, military, and industrial uses. Maintenance

activities would not affect land use plan compliance or land uses. After decommissioning, previous land uses could be restored.

4.7.5.1 Land Use Plan Compliance

The analysis area is located within 14 Federal, state, and local planning areas; the Project would be in compliance with these plans except for the Yuma RMP, Lake Havasu RMP, CDCA Plan (LUPA-BIO-PLANT-2), La Paz County Zoning Plan, and Town of Quartzsite General Plan (Appendix 4, Table 4.7-1).

Land Use Plan Amendments

Yuma RMP

The acreage of BLM-administered land that would be required for the Project outside of a designated utility corridor is 2,122 acres in aggregate (Appendix 4, Table 4.7-2). This would affect less than 0.1 percent of the 1.3 million acres of lands managed under the Yuma RMP. The impacts of the RMP amendment to land use is that these additional lands would be open to ROW development.

CDCA Plan

None of the Proposed Action or Action Alternative segments in California would be in compliance with CMA LUPA-BIO-PLANT-2 (Section 4.4.9). The amendment to the CDCA Plan to bring the Project into compliance with CMA LUPA-BIO-PLANT-2 would not result in any effects on current land uses in the study area. This amendment would not conflict with any other management direction in the CDCA Plan.

Designated Utility Corridors, Land Use Authorizations and Rights-of-Way

The Project would be authorized on BLM-managed land with a ROW grant containing terms and conditions the holder must comply with to prevent undue and unnecessary degradation, including that the Project will not conflict with any valid any existing authorizations. The terms and conditions would come from DRECP's CMAs (Appendix 2C), applicable Interagency Operating Procedures within the WWEC corridor 30-52, ROW regulation and policy, APMs, and BMPs, as necessary. Further, the designation of the utility corridor is for the use proposed. Thus, there would not be significant impacts to designated utility corridors.

4.7.6 Mitigation Measures

There are no MMs identified for land use for any of the specific segments and thus, no MMs have been identified for any of the full-route alternatives or subalternatives described below. The applicant has committed to APMs, and the BLM developed required BMPs, that would further reduce impacts to land use.

4.7.7 Construction of Full Route Alternative and Subalternative Effects

4.7.7.1 Proposed Action

Segment p-06 was determined to not be an appropriate use on the Kofa NWR (USFWS 2017); therefore, the USFWS would not issue approval for a ROW for Segment p-06.

No amendment to the Yuma RMP would be necessary to grant the Project ROW under the Proposed Action, as all proposed segments would be within designated corridors. The Proposed Action segments in California would not be in compliance with the CDCA Plan (CMA LUPA-BIO-PLANT-2); therefore, an amendment to the CDCA Plan would be necessary for the Project to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 4, Table 4.7-1).

4.7.7.2 Alternative 1: I-10 Route

Alternative 1 would avoid the Kofa NWR but would not be consistent with the Town of Quartzsite General Plan where the alternative passes through the Dome Rock 14-Day Camping Area within the Quartzsite planning area, and portions of it would not be consistent with the La Paz County Zoning Plan for segments outside existing corridors (Appendix 4, Table 4.7-1). Overall, besides avoiding the Kofa NWR, Alternative 1 would have greater impacts to land use (as described in Section 4.7.4) than the Proposed Action.

Unlike the Proposed Action, a Yuma RMP amendment would be necessary prior to granting the project ROW under Alternative 1, because three alternative segments would not be within a designated corridor. As under the Proposed Action, the Proposed Action and Action Alternative segments in California would not be in compliance with the CDCA Plan (CMA LUPA-BIO-PLANT-2); therefore, an amendment to the CDCA Plan would be necessary for the Project to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 4, Table 4.7-1).

Subalternatives to Alternative 1 (1A through 1E)

One additional segment than under Alternative 1 would require a Yuma RMP amendment for a ROW under Subalternatives 1A and 1B.

4.7.7.3 Alternative 2: BLM Utility Corridor Route

Alternative 2 would avoid the Kofa NWR but would not be consistent with the La Paz County Zoning Plan where the alternative would not occur along the DPV1 or I-10 in the La Paz County planning area. Alternative 2 would not be consistent with the Town of Quartzsite General Plan where the alternative passes through the La Posa LTVA and Dome Rock 14-Day Camping Area within the Quartzsite planning area, and portions of it would not be consistent with the La Paz County Zoning Plan for segments outside existing corridors (Appendix 4, Table 4.7-1). Overall, besides avoiding the Kofa NWR Alternative 2 would have greater impacts to land use (as described in Section 4.7.4) than the Proposed Action.

Unlike the Proposed Action, a Yuma RMP amendment would be necessary to grant the ROW under Alternative 2, because two alternative segments would not be within a designated corridor. As under the Proposed Action, the Proposed and Alternative Segments in California would not be in compliance with the CDCA Plan (CMA LUPA-BIO-PLANT-2); therefore, an amendment

to the CDCA Plan would be necessary for the Project to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 4, Table 4.7-1).

Subalternatives to Alternative 2 (2A through 2E)

Under Subalternative 2A, the route would pass through an area classified as a low known sensitivity area which indicates it does not undermine proposed allocations. Subalternative 2A would also include more NRCS-classified farmland in California. Under Subalternatives 2A and 2B, one additional segment than under Alternative 2 would require an RMP amendment to grant a ROW and under Subalternative 2C three additional segments than under Alternative 2 would require an RMP amendment prior to granting the project ROW. The impacts under Subalternatives 2D and 2E would not differ from Alternative 2.

4.7.7.4 Alternative 3: Avoidance Route

Alternative 3 would avoid the Kofa NWR but would not be consistent with the La Paz County Zoning Plan where the alternative would not occur along the DPV1 or I-10 in the La Paz County planning area (Appendix 4, Table 4.7-1). Overall, besides avoiding the Kofa NWR Alternative 3 would have greater impacts to land use (as described in Section 4.7.4) than the Proposed Action.

Unlike the Proposed Action, a Yuma RMP amendment would be necessary to grant the ROW under Alternative 3, because five alternative segments would not be within a designated corridor. As under the Proposed Action, the Proposed and Alternative Segments in California would not be in compliance with the CDCA Plan (CMA LUPA-BIO-PLANT-2); therefore, an amendment to the CDCA Plan would be necessary for the Project to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 4, Table 4.7-1).

Subalternatives to Alternative 3 (3A through 3M)

Alternative 3 subalternatives 3A and 3H would require an additional Yuma RMP amendment. Subalternative 3E would not be consistent with the Town of Quartzsite General Plan.

4.7.7.5 Alternative 4: Public Lands Emphasis Route

Alternative 4 would not cross the Kofa NWR but would not be consistent with the La Paz County Zoning Plan where the alternative would not occur along the DPV1 or I-10 in the La Paz County planning area (Appendix 4, Table 4.7-1). Overall, besides avoiding the Kofa NWR Alternative 4 would have greater impacts to land use (as described in Section 4.7.4) than the Proposed Action.

Unlike the Proposed Action, a Yuma RMP amendment would be necessary to grant the ROW under Alternative 4, because five alternative segments would not be within a designated corridor. As under the Proposed Action, the Proposed Action and Action Alternative segments in California would not be in compliance with the CDCA Plan (CMA LUPA-BIO-PLANT-2); therefore, an amendment to the CDCA Plan would be necessary for the Project to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 4, Table 4.7-1).

Subalternatives to Alternative 4 (4A through 4P)

One additional segment than under Alternative 4 would require an RMP amendment prior to granting the project ROW under Subalternatives 4B and 4D.

4.7.7.6 Agency Preferred Alternative

The Preferred Alternative would avoid the Kofa NWR. The Preferred Alternative would not be consistent with the La Paz County Zoning Plan (Appendix 4, Table 4.7-1) where the alternative would not occur along the DPV1 or I-10 in the La Paz County planning area. However, La Paz County and the Town of Quartzite have expressed support for the Preferred Alternative in their written comments. The Preferred Alternative would affect more solar energy facilities than the Proposed Action. Overall, the Preferred Alternative would have less impacts to land use (as described in Sections 4.7.4.1 and 4.7.5) than the Proposed Action.

Unlike the Proposed Action, a Yuma RMP amendment would be necessary to grant the ROW under the Preferred Alternative, because Segment x-05 and a portion of Segment i-03 would not be within a designated corridor. As under the Proposed Action, the portion of the Preferred Alternative in California would not be in compliance with the CDCA Plan (CMA LUPA-BIO-PLANT-2); therefore, an amendment to the CDCA Plan would be necessary for the Project to be in compliance with CMA LUPA-BIO-PLANT-2 (Appendix 4, Table 4.7-1).

4.7.8 Residual Impacts

There would not be any mitigation for land use; therefore, there would not be any residual impacts.

4.7.9 CDCA Plan Compliance

CMA LUPA-LANDS-8 would apply to the Project; all new transmission lines of 161kV or greater must be located in a designated utility corridor unless it would be located within a DFA (Appendix 2C). Because all Proposed Action and Action Alternative segments would be located within a DFA (Appendix 7, Figure 3.2-2c), the Project would be in compliance with this CMA.

Except for CMA LUPA-BIO-PLANT-2, the Project would be in compliance with all of the CMAs in the CDCA Plan that apply to the Project (Appendix 2C). CDCA Plan compliance with CMA LUPA-BIO-PLANT-2 would be achieved through BMP-BIO-31 (Section 4.4.9; Appendix 2A, Section 2A.4).

4.7.10 Unavoidable Adverse Effects

There would not be any moderate or major unavoidable adverse effects associated with the Project.

4.7.11 Cumulative Effects

The past and present land uses in the CEA (Table 3.12-1) have had a direct effect on the conversion of lands from one use to another (i.e., undeveloped land that is converted to a power plant, transmission line ROW, solar energy facility, etc.).

Reasonably foreseeable actions in the CEA that, when combined with the Project, may have cumulative land use effects include solar energy facilities, a power plant, and mines (Appendix 4, Table 4.7-3). The overall cumulative impact of these developments is generally consistent with the long-term management planning tools such as BLM RMPs and numerous state, county, and municipal-level long-range planning documents.

The Project would have moderate, short-term cumulative impacts to the management of lands and future or planned land uses since the Project would limit non-compatible future or planned land uses such as other transmission lines, pipelines, or renewable energy development from being located within the same footprint as the Project. This would also be true for other similar projects provided in Appendix 3, Table 3.12-2 since they would also limit other projects from being located in the same footprint. As development occurs, the rural environment would become increasingly more residential, commercial, and industrial; however, the limited availability of water would limit expansive future residential, commercial, and water-dependent industrial development, as it has in the past.

In general, an increase in development would contribute to changes in land use and the modification of the character of the CEA. As development occurs, the rural environment would become increasingly more residential, commercial, and industrial. If populations increase as a result of development, the use of designated recreation areas and dispersed recreation within the CEA also could increase. The cumulative effects of past, present, and reasonably foreseeable projects to land use would be minor to moderate, although this Project would contribute only negligibly to this overall cumulative effect.

4.7.12 Irreversible and Irretrievable Commitments of Resources

There would not be any irreversible or irretrievable commitments related to land use.

4.7.13 Relationship of Short-term Uses and Long-term Productivity

The short-term changes to land use would not affect the long-term productivity related to existing and future land uses.

4.8 RECREATION

4.8.1 Introduction

Effects to recreation resources are discussed in this section in terms of adjacent recreation areas and OHV use. Impacts would be minor and similar for each alternative.

4.8.2 Methods for Analysis

4.8.2.1 Analysis Area

The analysis area for recreation would include all potential disturbance areas along with all portions of the study area where indirect effects could occur.

4.8.2.2 Assumptions

The following assumption was made when performing the analysis of Project effects on recreation:

- OHV routes in Johnson Canyon would need to be closed for the duration of Project construction except for Alternative 1.

4.8.2.3 Environmental Effect Indicators, Magnitude, and Duration

Effects to recreational resources described in this section would occur as a result of:

- Project-related changes that alter or otherwise physically affect established, designated, or planned recreation areas, resources, experiences, or activities;
- Increased demand for recreation activities due to the influx of people during construction and operation that would exceed capacity for that activity in a given area such as a campground, wilderness, or hunting area and/or trails;
- Conflicts with applicable Federal, state, or local recreation policies;
- Conflicts with established recreational areas;
- Decreased accessibility to areas established, designated, or planned for recreation;
- An activity that would result in an effect to existing recreational OHV designations/routes, which results in the activity being incompatible with OHV designations (open, closed, closed except for administrative use, etc.) and/or OHV routes;
- Prevents long-term recreational use or use during peak season or impedes or discourages existing recreational activities; or
- Physically degrade existing recreation resources.

4.8.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. The BLM-administered land on which the Project is proposed would continue to be managed as it currently exists. Lands in the analysis area would remain as is, which is primarily undeveloped desert land available for dispersed and developed recreation, subject to existing closures or restrictions. Current recreational use (recreation opportunities and activities, recreation settings, desired recreation experiences, and adjacent recreation areas) in the analysis area described in Section 3.8 would continue under the No Action Alternative. There would be no changes that would alter existing

recreation opportunities and activities, settings, desired experiences, or adjacent recreation areas in the analysis area beyond current conditions and recreation trends.

4.8.4 Construction of Action Alternative Segments

4.8.4.1 Direct and Indirect Effects Common to All Action Alternatives

Construction

Potential construction related effects would be localized, short-term, and negligible to moderate. Construction of the Project would not permanently preclude the use of or access to any existing recreation opportunities or activities, but some temporary effects to these resources would occur during the construction phases of the Project. Recreation use would be temporarily affected as construction noises, visual disturbances, vehicle and equipment travel, and/or the presence of other humans within approximately 1 mile of a recreation area or opportunity could detract from these recreation opportunities and activities. Recreation users that seek opportunities for solitude commonly seek areas where they would be less likely to see other humans. Access to developed and dispersed recreation areas may be temporarily precluded, restricted, or more cumbersome at locations with active construction.

As described in Appendix 2A, temporary signs directing vehicles to alternative park access and parking would be posted in the event construction temporarily obstructs parking areas near trailheads (BMP-REC-01, BMP-REC-02; Appendix 2A, Section 2A.7). Temporary signs advising recreation users of construction activities and directing them to alternative recreation routes, as appropriate, would be posted on both sides of all recreation route intersections or as determined through DCRT coordination with the respective jurisdictional agencies. This may cause adjacent recreation areas unaffected by the construction, whether developed and/or available for dispersed recreation, to become temporarily more crowded while construction in the area is active. For example, those wishing to camp in an area affected by the construction would be more likely to concentrate in campsites unaffected by construction, causing those areas to be more crowded than they might normally be. This would be a short-term, moderate effect on other recreation areas that due to its short duration would not lead to an accelerated deterioration of these areas.

A schedule of construction activities would be posted near entrances to recreational areas as well as the Project website. Signs would be installed near access roads notifying the public of construction activities in the area, as well as to the eventual presence of permanent Project facilities (BMP-REC-01, BMP-REC-02; Appendix 2A, Section 2A.7).

OHV users may be temporarily affected by construction noises, visual disturbances, vehicle and equipment travel, and/or the presence of construction workers. Access to designated OHV routes may be temporarily precluded, restricted, or more cumbersome during active construction. As described for Recreation Opportunities/Activities above, BMP-REC-01 and BMP-REC-02 (Appendix 2A, Section 2A.7) would inform OHV riders of alternative parking areas and OHV routes.

The recreation experience may be affected for some OHV users, in particular those that were familiar with the area prior to construction of the Project. Some unauthorized OHV use could

occur during construction when workers are not present (such as on weekends or in between construction phases).

4.8.4.2 Direct and Indirect Segment-specific Effects

Segment-specific discussions that follow are broken out by Proposed Action and Action Alternatives, and are presented for:

- Segments that could cause temporary disruption to access to recreation areas during construction;
- Segments that could impact the recreation experience for users of recreation areas;
- Segments that would affect access to OHV routes;
- Segments that could affect the recreation experience of OHV users; and
- Segments that could pose a safety hazard to OHV users.

Proposed Action Segments

- Segment p-01 would affect recreation access to the Big Horn Mountains WA, and by extension, the Hummingbird Springs WA.
- Segments p-03 through p-06 would affect recreation access in the eastern portion of the Project Area on the Yuma East Undeveloped, La Posa Destination, and Plomosa SRMAs.
- Segment p-06 would affect recreation access on the Kofa NWR.
- Segment p-06 has substantially more OHV routes located within 0.5-mile of the proposed route than the other Proposed Action segments in the eastern portion of the Project Area, and the most proposed Arizona Peace Trail. Therefore, this segment would affect the recreation experience on more OHV routes than the other Proposed Action segments in the eastern portion of the Project Area and would also have the potential for the most increase in illegal OHV use. The ROW would include none or very little OHV routes or the proposed Arizona Peace Trail for Segments p-01 or p-02.
- Segment p-07 has substantially more OHV routes located within 0.5-mile of the proposed route in the Quartzsite area than the other Proposed Action segments and therefore would affect the recreation experience on more OHV routes than the other Proposed Action segments near Quartzsite. It would also have the potential for the most increase in illegal OHV use.
- Segments p-07 through p-09 and p-12 would require self-supporting structures to reduce the safety hazards to OHV users (MM-REC-02).
- Segment p-09 has substantially more OHV routes located within 0.5-mile of the proposed route in the Copper Bottom Pass area than the other Proposed Action segments, but Segment p-13 has substantially more proposed Arizona Peace Trail within 0.5-mile of the proposed route in the Quartzsite Zone than the other proposed segments. Proposed Action Segments p-09 and p-13 would affect the recreation experience on more OHV routes than the other Proposed Action segments in the Quartzsite Zone, and would also have the

potential for the most increase in illegal OHV use. Proposed Action Segment p-14 would include very few OHV routes.

- Segment p-17 would affect relatively more classified OHV routes in the area near the Colorado River and in California of the Proposed Segments. Therefore, this segment would affect the recreation experience on more OHV routes than the other Proposed Segments in this area and would also have the potential for the most increase in illegal OHV use.
- Segments p-09, p-10, and p-11 would include helicopter fly yards during construction which could decrease the recreation experience for some users of the La Posa and Colorado River SRMAs and OHV users in the vicinity of the fly yards.
- The construction of segments associated with the crossing of the Colorado River would temporarily inhibit boating activity during wire stringing and pulling. These restrictions would be temporary in nature and boat traffic would be allowed to resume after each wire stringing activity was completed.

Alternative Segments

- With the exception of Segments x-01, i-01, and i-02, all other Action Alternative segments in the eastern portion of the Project Area would affect recreation access to the Yuma East Undeveloped, La Posa Destination, and Plomosa SRMAs.
- Segments qn-02, qs-01, qs-02, and x-07 would have substantially more effects to recreation areas near Quartzsite than the other Action Alternative segments. All of these segments would cross both the La Posa LTVA and Dome Rock Camping Areas.
- Segment i-06 would bisect the Dome Rock Camping Area and Segment i-08s would cross the Ehrenberg Sandbowl OHV Area; therefore, these segments would have substantially more effect on recreation areas in the Copper Bottom area than the other Action Alternative segments.
- Segment in-01 has the greatest amount of OHV routes located with 0.5-mile of the Action Alternative segments in the eastern portion of the Project Area. Segments i-03 and x-04 have the largest portion of proposed Arizona Peace Trail. Therefore, these Action Alternative segments would affect the recreation experience on more OHV routes than the other Action Alternative segments in the eastern portion of the Project Area and would also have the potential for the most increase in illegal OHV use. The ROW would include none or very little OHV routes or proposed Arizona Peace Trail for Segments i-01 and x-02a.
- Segment qn-02 has the greatest amount of OHV routes located with 0.5-mile of the Action Alternative segments near Quartzsite. Alternative Segments qs-01 and qs-02 have the largest portion of proposed Arizona Peace Trail. Therefore, these segments would affect the recreation experience on more OHV routes than the other Action Alternative segments near Quartzsite and would also have the potential for the most increase in illegal OHV use.
- Segments i-06 and i-07 have substantially more OHV routes located within 0.5-mile of the Project than the other Action Alternative segments in the Copper Bottom area.

Segment cb-02 has the largest portion of proposed Arizona Peace Trail of the Action Alternative segments. Therefore, these segments would affect the recreation experience on more OHV routes than the other Action Alternative segments in the Copper Bottom area and would also have the potential for the most increase in illegal OHV use.

- Segment cb-02 includes Johnson Canyon; in addition to having high OHV recreational value in the Copper Bottom area, the proposed Arizona Peace Trail and other OHV routes along this segment would be closed temporarily during construction.
- Segments x-15 and x-16 would affect relatively more classified OHV route in the area near the Colorado River and in California of the Alternative Segments. Therefore, these segments would affect the recreation experience on more OHV routes than the other Alternative Segments in this area and would also have the potential for the most increase in illegal OHV use.
- Segments i-04, i-06, qn-02, qs-02, cb-05, cb-06, and cb-07 would require self-supporting structures to reduce the safety hazards to OHV users (MM-REC-02).
- A helicopter fly yard for Segments cb-01/cb-02 could decrease the recreation experience for some users of the La Posa and Colorado River SRMAs and OHV users in the vicinity of the fly yard.
- The construction of segments associated with the crossing of the Colorado River would temporarily inhibit boating activity during wire stringing and pulling. These restrictions would be temporary in nature and boat traffic would be allowed to resume after each wire stringing activity was completed.

4.8.5 Operations, Maintenance, and Decommissioning

The ROW would generally be open to recreation where on public land unless specifically prohibited by the BLM or other regulatory authority (e.g., OHV use). As described in Appendix 2A, Section 2A.7, plastic mesh or paint would be used to mark guy wires in areas used for recreation. Permanent high visibility guy markers would be installed during construction (BMP-REC-03; Appendix 2A, Section 2A.7).

The presence of a transmission line after construction would not be likely to eliminate a recreational use or access to recreation but the quality of, or experience associated with, a recreational use may be altered. In particular, the effect of the Project on segments not already occupied by the DPV1 or other transmission lines would be greater than on segments within existing transmission ROWs. For example, OHV riding in Johnson Canyon is a popular recreation pursuit because its pristine qualities and technical challenges that are unique to the area; OHV users in this area may experience more impacts to their recreational experience than in other areas.

Depending on the perception of the decreased quality to an individual – and the extent of familiarity with the area pre- and post-Project – this effect would be negligible to moderate and long-term. Effects to the recreation experience related to views of the Project structures are provided in Section 4.11.

Maintenance activities could result in disturbance to recreationists and would be generally limited to vehicular traffic associated with routine inspections of the line and traffic and noise resulting from scheduled or unscheduled maintenance as well as periodic trimming and removal of vegetation. Maintenance or repair activities would occur intermittently over the life of the Project; however, the effects would be temporary as maintenance would occur only once in many months to years and the effects would cease upon completion of the maintenance or repair activity.

In areas not previously occupied by a transmission line, there would be an increased safety risk to OHV users of collision with guy wires and other Project structures. This would be a minor to moderate effect on the safety risk to OHV users. The operation of the Project in the presence of the current DPV1 or other transmission lines may increase the risk for some users (by increasing the number of guy lines and structures) or decrease the risk for some users (because users are already aware of the safety risk from these features). Using self-supporting lattice structures or monopole structures would mitigate this risk to negligible to minor (MM-REC-02).

Following construction activities, the presence of permanent new or widened roads that would be used for operation and maintenance of the Project could change the OHV use patterns in the area, subject to Federal, state, and local OHV and traffic laws and regulations. New access roads constructed for the Project would be signed and would be closed to the public, but illegal OHV use would not be entirely preventable on the new and widened access roads. This would result in an increased chance for user-created route proliferation. An increase in user-created trails would conflict with the BLM's OHV-use strategies, creating management challenges and potentially increasing user conflicts. The resultant effect from increased OHV use would be a minor to moderate effect to recreation opportunities/activities.

Decommissioning and removal of the transmission line upon completion of the Project would result in relinquishing the ROW. Land previously occupied by the ROW and associated transmission line structures would be available for other land uses and the effect to the recreation experience due to the infrastructure would be removed.

4.8.6 Mitigation Measures

The following MMs have been identified for recreation:

MM-REC-01: To mitigate effects related to the temporary construction closure of the proposed Arizona Peace Trail and other OHV routes through Johnson Canyon, MM-REC-01 would require that construction of the Project occur outside of peak OHV season. Construction in Johnson Canyon would occur between the months of July and September when there are fewer recreational users in the area.

MM-REC-02: In areas of high OHV use, such as in Copper Bottom Pass and the Ehrenberg Sandbowl OHV Area, Project structures with guy lines would be replaced with self-supporting (no guy lines) lattice structures or monopoles. Additionally, in all other areas where guyed V structures are used, the anchor position would be placed no less than 50 feet from any trail or road, and the lowest guy line would be at least 15 feet above any road or trail crossed by a guy wire. This would reduce the safety risk to OHV users.

MM-REC-03: New access roads will be gated where appropriate, and signage including road status will be posted at all new access road junctions. This would preclude and/or minimize recreational use of access roads.

In addition, the BLM developed required BMPs that would further reduce impacts to recreation resources (Appendix 2A, Section 2A.7).

4.8.7 Construction of Full-Route Alternative and Subalternative Effects

4.8.7.1 Proposed Action

There would be negligible to minor effects to recreation areas under the Proposed Action. The most substantial effect would be related to temporary changes in access to recreation areas. Under the Proposed Action, the long-term effects to recreation would be negligible because of the presence of the existing DPV1; there would be little change to the present condition.

There would be negligible to moderate effects on OHV routes and the proposed Arizona Peace Trail. The Project would not preclude use of existing OHV routes, but the ROW and associated new or widened access roads may increase illegal OHV use, in particular in portions of the analysis area and ROW with higher current OHV route densities. Because the Proposed Action would follow the existing DPV1, the Project would have negligible changes on the recreation experience of OHV users on OHV routes and the proposed Arizona Peace Trail.

4.8.7.2 Alternative 1: I-10 Route

Under Alternative 1, the temporary changes in access to recreation areas during construction would be similar to the Proposed Action. However, the long-term effects to recreation quality on recreation areas in the Project Area except in the eastern portion (where Alternative 1 would be the same as the Proposed Action) would be greater than those under the Proposed Action, because the Project would be a new, substantial feature on the landscape that would change a recreational user's experience from the current condition.

The most substantial difference in recreation effects between Alternative 1 and the Proposed Action is to camping areas near Quartzsite and to the Ehrenberg Sandbowl OHV Area. The La Posa LTVA and the Dome Rock Camping Area would be crossed by several Alternative 1 segments. There would be minor to major effects to these recreation areas under Alternative 1. Also, the north end of the Ehrenberg Sandbowl OHV Area would be crossed by Alternative 1, but it would not be crossed by the Proposed Action. This would be a minor effect on the Ehrenberg Sandbowl OHV Area. The Kofa NWR would not be crossed, thus no impacts to recreation areas or uses in this area would occur.

The effects to OHV routes and the proposed Arizona Peace Trail under Alternative 1 would be the similar to those under the Proposed Action.

Subalternatives to Alternative 1 (1A through 1E)

There would not be any differences in recreation effects between the Alternative 1 subalternatives (1A through 1E) and Alternative 1.

4.8.7.3 Alternative 2: BLM Utility Corridor Route

Under Alternative 2, the temporary changes in access to recreation areas during construction would be similar to the Proposed Action. The long-term effects to recreation quality on recreation areas would be the same as under the Proposed Action in all areas except near Quartzsite, which would be greater than those under the Proposed Action because the Project would be a new, substantial feature on the landscape that would change a recreational user's experience from the current condition.

A substantial difference in recreation effects between Alternative 2 and the Proposed Action is to the La Posa LTVA near Quartzsite. The La Posa LTVA would be crossed by two Alternative 2 segments. There would be minor to moderate effects to the La Posa LTVA under Alternative 2. However, in comparison to Alternative 1, Alternative 2 would avoid the Dome Rock Camping Area and the Ehrenberg Sandbowl OHV Area.

The effects to OHV routes and the proposed Arizona Peace Trail under Alternative 2 would be the similar to those under the Proposed Action.

Subalternatives to Alternative 2 (2A through 2E)

The only subalternative that would have differences in effects to recreation from Alternative 2 is Subalternative 2C; the route would go through Johnson Canyon (Segment cb-02) rather than Copper Bottom Pass, which would have a larger effect on OHV use because Johnson Canyon is undeveloped, and the Project could take away from the user's experience. Also, during construction of Segment cb-02 the proposed Arizona Peace Trail and other OHV routes would be temporarily closed, which would have moderate effects on OHV users. Mitigation would reduce this to a minor effect (Section 4.8.6).

4.8.7.4 Alternative 3: Avoidance Route

Under Alternative 3, the temporary changes in access to recreation areas during construction would be similar to the Proposed Action. The long-term effects to recreation quality on recreation areas would be the same where Alternative 3 includes Proposed Action segments and greater where Alternative 3 includes Action Alternative segments because within the Action Alternative segments, the Project would be a new, substantial feature on the landscape that would change a recreational user's experience from the current condition. This alternative would avoid the Kofa NWR. Unlike Alternatives 1 or 2, Alternative 3 would not affect the Dome Rock Camping Area, La Posa LTVA, or the Ehrenberg Sandbowl OHV Area.

Alternative 3 would avoid both Johnson Canyon and Copper Bottom Pass, which would be less of an effect to OHV routes in this area than the Proposed Action.

Subalternatives to Alternative 3 (3A through 3M)

Subalternatives 3E and 3F would go through the La Posa LTVA, which would result in greater impacts to recreation than Alternative 3. Subalternative 3K would go through Johnson Canyon (Segment cb-02) rather than Copper Bottom Pass, which would have a larger effect on OHV use than Alternative 3 because Johnson Canyon is undeveloped and the Project could take away from the user's experience. Also, during construction of Segment cb-02 the proposed Arizona Peace

Trail and other OHV routes would be temporarily closed, which would have moderate effects on OHV users. Mitigation would reduce this to a minor effect (Section 4.8.6). Subalternative 3L would go through the Dome Rock Camping Area, which would result in greater impacts to recreation than Alternative 3.

4.8.7.5 Alternative 4: Public Lands Emphasis Route

Under Alternative 4, the temporary changes in access to recreation areas during construction would be similar to the Proposed Action. The long-term effects to recreation quality on recreation areas would be the same where Alternative 4 includes Proposed Action segments and greater where Alternative 4 includes Action Alternative segments because within these Action Alternative segments, the Project would be a new, substantial feature on the landscape that would change a recreational user's experience from the current condition. This alternative would avoid the Kofa NWR. Alternative 4 would avoid the Ehrenberg Sandbowl OHV Area and Dome Rock Camping Area but would run adjacent to the La Posa LTVA.

Alternative 4 would run through Johnson Canyon, which would be more of an effect to OHV routes in this area than the Proposed Action.

Subalternatives to Alternative 4 (4A through 4P)

The only subalternative that would have differences in effects to recreation resources from Alternative 4 is Subalternative 4E: the route would avoid Johnson Canyon and instead go over Cunningham Peak; this would reduce OHV effects.

4.8.7.6 Agency Preferred Alternative

Under the Preferred Alternative, the temporary changes in access to recreation areas during construction would be similar to the Proposed Action. The long-term effects to recreation quality on recreation areas would be the same as under the Proposed Action except on Segment x-05 where the Project would be a new, substantial feature on the landscape that would change a recreational user's experience from the current condition; in this location the effects on recreation would be greater than those under the Proposed Action. Similar to the Proposed Action, the Preferred Alternative would avoid the La Posa LTVA and the Dome Rock Camping Area.

The effects to OHV routes and the proposed Arizona Peace Trail under the Preferred Alternative would be the similar to those under the Proposed Action.

4.8.8 Residual Effects

Depending on the alternative (Section 4.8.7), after implementation of MMs, there would be residual negligible to minor effects from illegal OHV use, minor to moderate effects related to the temporary construction closure of the proposed Arizona Peace Trail through Johnson Canyon, and residual negligible to minor increase in safety risk to OHV users, respectively. Additionally, there would be minor to major residual recreation effects under some alternatives from the crossing of the La Posa LTVA and Dome Rock Camping Area near Quartzsite and

minor residual recreation effects on the Ehrenberg Sandbowl OHV Area, because these effects (other than safety risk to OHV users) would not be mitigated.

4.8.9 CDCA Plan Compliance

CMAs DFA-REC-1, DFA-REC-2, DFA, REC-4, DFA-REC-5, DFA-REC-7 would apply to the Project (Appendix 2C). The Project would comply with these CMAs through BMP-REC-01 (Appendix 2A, Section 2A.7).

4.8.10 Unavoidable Adverse Effects

Under some alternatives (Section 4.8.7), during construction the temporary closure of OHV use in portions of the Copper Bottom Pass area, and the proximity to Quartzsite camping areas would be an unavoidable, short-term, adverse, moderate effect on OHV users on the proposed Arizona Peace Trail and other OHV routes. The effect of temporary OHV closures and the safety risk to OHV users would be mitigated to a minor effect (Section 4.8.6).

In the long term, under all alternatives the main unavoidable adverse effect would be increased development in natural areas heavily used for recreation. The addition of the Project would impact the scenic views of recreationists, increasing the perception of development and clutter in conjunction with the existing DPV1 transmission line. New or expanded access routes would remain after construction, increasing the access in and around otherwise natural areas, which would affect the character of the recreation environment in some areas. This would be an unavoidable, long-term, adverse negligible to moderate impact.

4.8.11 Cumulative Effects

Historic proliferation of authorized and unauthorized roads and trails, the establishment of Federal, state, county and private lands, and community development have all shaped the recreation opportunities, settings, and desired experiences in the CEA. Though land in the analysis area is largely undeveloped, it is characterized by both developed (i.e., utility ROWs) and undeveloped desert, agricultural lands, and by areas used for grazing, transportation corridors, utilities, recreation, and widely dispersed, low-density residential development. In general, construction activities from the Project, when considered with other linear ROW projects (e.g., solar energy facility generation tie-in lines, transmission lines, and pipeline projects) would contribute to the modification of the character of the recreation setting, which would contribute to potentially detracting from desired recreation experiences. Construction activities of the Project and other reasonably foreseeable actions may detract from or temporarily hamper access to recreational opportunities.

Where the Project would occur in existing ROWs and currently developed/disturbed areas, the likelihood that users are currently pursuing primitive or unconfined recreational settings and solitude is low, therefore no cumulative impacts are anticipated. However, it is more possible that users will be pursuing primitive and unconfined recreational opportunities and solitude in currently undeveloped areas of the CEA. In conjunction with the Project, reasonably foreseeable future actions in undeveloped areas would have a minor cumulative effect on the recreation experience and availability of primitive or unconfined recreational settings and solitude in the

CEA. Larger projects, such as solar facilities, and specifically the proposed 5,935-acre La Paz County land conveyance, would permanently remove lands from recreation.

The Proposed Action and portions of the other alternative routes would be constructed adjacent to the existing DPV1. The DPV1 was constructed across or adjacent to recreation areas in La Paz and Maricopa Counties in Arizona, and Riverside County in California, including the Kofa NWR. Adding the Project adjacent to this existing ROW would intensify the overall development that crosses these recreational resources. Any additional projects that may traverse these recreational areas would further increase the industrial development and further reduce the undeveloped, natural landscape of the recreational areas.

OHV riders may have cumulatively more opportunities available as a result of the Project and other past transmission line and pipeline development projects, since these projects required new access roads just as the Project would. New access roads used for construction (as well as maintenance) provide additional avenues for riders to gain access to locations that were previously unavailable. Adding the Project structures with guy wires adjacent to a ROW that already contains the DPV1 or other transmission lines would cumulatively add to the safety risk to OHV riders in some cases; however, MM-REC-02 would reduce this cumulative effect (Appendix 2, Section 2.4). Both increasing authorized and unauthorized OHV use is likely to result in increasing complaints from landowners and the public. As the Project adds to road density at the same time OHV use increases, there would be a need for additional enforcement and physical barriers to protect some areas.

The quality of the recreational setting and desired experiences could be degraded by the loss of undeveloped landscape character and visual intrusion on the landscape as a result of the cumulative impact of the Project construction and the past, present, and reasonably foreseeable actions identified in Appendix 3, Tables 3.12-1 and 3.12-2. The cumulative impact of this alteration of the recreation setting would be minor since recreation settings would be available in adjacent settings, and other cumulative actions would be far-removed and would not affect adjacent lands along the entire ROW. Operation and maintenance activities of the Project would result in minor cumulative effects, since the Project would already be constructed and standard operation and maintenance activities would be so periodic as to not affect recreation opportunities, experiences, or desired settings.

4.8.12 Irreversible and Irretrievable Commitment of Resources

There would not be any irreversible or irretrievable adverse effects on recreation related to the Project.

4.8.13 Relationship of Short-term Uses and Long-term Productivity

The short-term changes to recreation would not affect the long-term productivity related to existing and future recreation.

4.9 SOCIOECONOMICS

4.9.1 Introduction

Impacts to socioeconomics are discussed in terms of effects on the economy, population, housing, tax revenues, public services, property values, and the tourism and recreation related economy.

4.9.2 Methods for Analysis

4.9.2.1 Analysis Area

Impacts to socioeconomics are analyzed at the county level and/or at the census block group geographic level, as appropriate. Economic effects from the Project were estimated using the RIMS II regional economic model (BEA 1997).

4.9.2.2 Assumptions

The construction phase of the Project would have a greater impact on socioeconomic factors than the operations and maintenance phase. The decommissioning phase would be similar to the construction phase relative to anticipated socioeconomic impacts.

4.9.2.3 Environmental Effect Indicators, Magnitude, and Duration

Potential impacts to socioeconomic conditions may be either positive or negative. The following types of potential impacts were included in the socioeconomic impact analysis to determine presence, duration, and intensity:

- Change in employment opportunities, directly or indirectly, resulting from the Project, compared to current and historic trends;
- Change in taxes resulting from the Project, compared to current and historic trends;
- Change in population, increased infrastructure, or other change that induces growth resulting from the Project;
- Physical division of an established community resulting from the Project;
- Displace substantial numbers of people or existing housing on a permanent basis, necessitating the construction of replacement housing outside the local region;
- Project-related induced long-term population growth to an extent that could not be accommodated by existing local housing, local services, and infrastructure;
- Project-related substantial long-term reduction in revenue for local businesses, government agencies, or Indian tribes;
- Project impacts that would substantially alter the lifestyles or quality of life, including non-market values, of populations using, or residing in proximity to, the Project;

- Project impacts that would substantially alter production or delivery of current levels of ecosystem services to local and regional populations;
- Conflict with applicable land use plans and policies associated with socioeconomics, public services, or utilities created by the Project;
- Percent change in property values; and,
- Change in revenue generated by recreation.

4.9.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. Current conditions in the analysis area described in Chapter 3 would continue under the No Action Alternative.

4.9.4 Construction of Action Alternative Segments

4.9.4.1 Direct and Indirect Effects Common to All Action Alternatives

The Project would involve a relatively short-term construction phase followed by long-term (50 years) operation and maintenance of a new transmission line and appurtenant facilities, including the SCS and substation equipment. During the construction phase, crews responsible for specific construction tasks would likely not remain in any one area for the full duration of the construction period, which is estimated by DCRT to be approximately 24 months. Thus, impacts at any one location along the construction route would be for a shorter time period than the full construction phase.

Overall, the Project could contribute to future economic development and long-term job growth in the region by improving reliability of the electrical grid and increasing the ability of the grid to meet the demand of future growth such as facilitating solar and other new electrical generating facilities.

Economic Effects

As shown in Appendix 2, Table 2.2-28, the construction crew for the transmission line would consist of approximately 120 workers and take a year and a half to two years to complete. Substation work would require a crew of about 40 workers over a year.

Construction of the Project is projected to support approximately 160 short-term construction jobs for up to two years, as well as another 63 indirect jobs that would be supported by local purchases of supplies and materials for construction, based on the RIMS II multipliers for the three-county region (Appendix 4, Table 4.9-1). An additional 100 new positions would be supported by (induced) household expenditures by the construction workforce (local and non-local) during the construction period. Further, as detailed in Appendix 4, Table 4.9-2, Project construction would impact local earnings, based on the RIMS II multipliers, in addition to the earnings of the construction workforce (direct earnings), roughly doubling this amount.

The third impact that can be calculated using the RIMS II model is the change in "final demand" or overall economic benefit to the local region. Based on a $241 million direct construction cost and the RIMS II multiplier of 2.0214[1] to capture the direct, indirect, and induced economic impacts, there would be an overall economic impact of $487.2 million related to construction of the Project.

Population and Housing

Approximately 55 percent of the construction workforce is expected to consist of non-local employees who would reside in the analysis area during the construction period but very few of these employees are expected to be accompanied by their families. Two scenarios regarding indirect and induced jobs and associated population and housing impacts were considered. At the low end (Scenario One) the indirect and induced jobs are assumed to be filled entirely by local residents and estimates of population effects include only the direct Project construction workers and their accompanying families. At the high end (Scenario 2) half the indirect and induced jobs are assumed to be filled by workers who migrate to the analysis area.

Under Scenario One, approximately 92 construction workers and family members would move into the area for the duration of the Project, including about eight children. Under Scenario Two, approximately 190 workers and family members would move into the area for the duration of the Project, including about 16 children. Appendix 4, Tables 4.9-3 and 4.9-4 provide a breakdown of these estimates and the resultant percentage increases in population, respectively. Due to the low percentages (less than 0.1 percent for each area considered), the Project's impact on population would be considered negligible and short-term.

Non-local workers would require housing in the analysis area. For purposes of considering potential effects on housing conditions, the number of projected non-local workers is compared to the estimated availability of rental housing, motel/hotel rooms, and RV sites within the analysis area. As detailed in Appendix 4, Table 4.9-5, for Scenario One, only 77 housing units would be required and for Scenario Two, 158 housing units would be required. Vacancy rates described in that same section suggest that the Project's impact on available housing would negligible.

Tax Revenue Effects

Construction-related economic activity would also generate additional tax revenues for state and local governments in the Project Area. Sources of new tax revenues would be sales and use taxes, and property taxes. Tax rates vary depending on whether the land is leased or owned, public or private, so it would be difficult to estimate what the tax proceeds would be from the Project before a final route is selected. In any case, income from taxes generated by the Project could be considered a positive impact for local units of government.

Effects on Public Services

In addition to the temporary increase in demand for housing described above, the non-local construction workforce and any non-local workers and families who migrate to the area to fill

[1] This multiplier is based on the RIMS II 2007 Benchmark Input-Output Table for the Nation and 2015 regional data.

indirect employment opportunities, would also create additional short-term demands for public services such as police and fire protection, education, and medical services. Much like the housing situation, these added demands are unlikely to create substantial challenges in the Project Area due to the comparatively small numbers of non-local workers. The effects on public services during the construction period should be negligible to minor and short-term.

Effects on Property Values

The primary impacts to residential and other developed properties during construction are from noise, dust, heavy equipment, and perhaps access. An inventory of land use within the analysis area for the Proposed Action and Action Alternatives was completed. Residential or Rural Residential land accounted for 8 percent of the total area within the land use analysis area. The majority of that is classified as Rural Residential (just under 12,000 acres out of 12,799 acres), indicating that the land use analysis area is primarily rural in nature with few residences present. Construction phase impacts would be short-term as construction in any specific area would be accomplished fairly quickly. Therefore, it is unlikely that the construction phase would have a lasting impact on property values.

Effects on Recreation and Tourism Economy

Based on the recreation impact analysis provided in Section 4.8, impacts to recreation and recreation areas would be localized and short-term and primarily related to noise, dust, visual disturbance and restricted access during construction. Considering the large number of recreational opportunities and their areal extent, the reduction in recreation users coming to the area should be minor, as most users would likely move to other nearby locations not impacted by construction activities.

Recreation activities, such as OHV riding, hunting, wildlife viewing, hiking and equestrian activities, might be temporarily affected in some locations or displaced to other locations for short periods of time. These short-term, localized impacts are unlikely to result in a discernible impact to the tourism- and recreation-related economy.

4.9.5 Operations, Maintenance, and Decommissioning

In contrast to the large workforce and expenditures required for construction, ongoing operations and maintenance would require few workers (DCRT 2019) and have relatively little direct economic impact in the Project Area. Decommissioning the Project would require more workers than during operations and maintenance, but it is unlikely the workforce and expenditures would be as large as that associated with construction. After decommissioning, there would be no further economic or social effects associated with the Project.

4.9.5.1 Economic Effects

The operations and maintenance phase would require a minimal workforce with an annual payroll of $195,000 (DCRT 2017). There would be comparatively few other expenditures for materials or supplies. In contrast to the No Action Alternative; however, each of the Action Alternatives would meet the purpose and need for the Project in improving reliability of the electrical grid in California and Arizona, increasing the ability of the grid to meet demand

growth in the region, or facilitating potential renewable generation development in the region. The long-term economic impacts from these aspects cannot be modeled in RIMS II, but would be positive and could be major.

4.9.5.2 Tax Revenue Effects

The transmission line and appurtenant facilities could produce more substantial property tax revenues for local governments once fully constructed. It would be difficult to accurately estimate property taxes before a final route is selected. Property tax revenues would decrease over time during the period of operations due to depreciation in the value of the facilities.

4.9.5.3 Population Effects

Ongoing operations and maintenance would require relatively few workers. The Project would have negligible to minor long-term effects on the population of the Project Area.

4.9.5.4 Housing Effects

The Project would have negligible to minor, long-term effects on housing within the Project Area.

4.9.5.5 Effects on Public Services

The Project would have negligible to minor long-term effects on most public services within the Project Area during the operations and maintenance phase. However, to the extent the Project improves reliability of the electrical grid in southern California and Arizona and increases the ability of the grid to meet demand growth in the region, it could provide long-term improvements for the area in terms of electric utility service. Taxes collected on the transmission line and associated facilities have the potential to improve public services.

4.9.5.6 Effects on Property Values

The concern that transmission lines may cause long-term decreases in property values has led to extensive research on the subject, but the conclusions are not clear or consistent. Instead the research indicates that the effects of transmission lines on property values appear to differ depending on the situation. The majority of the existing literature has focused on urban residential properties in densely populated northern regions. This, in conjunction with the inconsistent results, makes it difficult to directly apply the findings to the largely rural Project Area.

Property owners allowing the use of a portion of their property for the transmission line ROW would be compensated by DCRT for the encumbrance the line creates upon their land and potential reductions in their property values.

In general, because of the small amount of residential land in the analysis area, its distance from the Project, and the nature of rural residential properties, loss of property value is anticipated to range from negligible to moderate.

4.9.5.7 Effects on Recreation and Tourism Economy

Ongoing operations and maintenance should have little or no long-term effect on the tourism- and recreation-related economy. As noted in the previous section on property values, it has been demonstrated that impacts from visual disturbance dissipate quickly with distance from transmission lines; given the vast area available for high-quality recreation the transmission line and its associated facilities should have negligible impact on the recreation and tourism economy.

4.9.6 Mitigation Measures

There are no MMs identified for socioeconomics for any of the specific segments. No MMs have been identified for any of the full-route alternatives or subalternatives described below.

4.9.7 Construction of Full Route Alternative and Subalternative Effects

4.9.7.1 Proposed Action

Two areas of local concern during scoping were impacts to residential property values and to the recreation and tourism economy. In both cases the Proposed Action probably produces the lowest negative impacts as it crosses fewer residential areas overall, and, being located adjacent to the existing DPV1 line over a large distance, it would likely have a lower visual impact on currently undeveloped areas. Among the five full-route alternatives, the Proposed Action would impact the second lowest acreage of residential and rural residential lands within 2,000 feet of the line (the land use study area), at 1,833 acres over the full length of the line.

4.9.7.2 Alternative 1: I-10 Route

Socioeconomic impacts for Alternative 1 would be largely the same as for the Proposed Action, with the exceptions of impacts to residential properties, and recreation and tourism in the Project Area. Regarding residential properties, Alternative 1 would impact the greatest amount of residential acreage among the five full-route alternatives at 3,960 acres. Regarding recreation and tourism, the I-10 route would follow I-10 and avoid impacts to the Copper Bottom Pass area, but would cross through the Dome Rock Camping Area, both of which are heavily used for recreation. However, Alternative 1 likely would not change the contribution of recreation and tourism to local economies in the Project Area.

Subalternatives to Alternative 1 (1A through 1E)

Impacts anticipated from Subalternatives to Alternative 1 are substantially similar to those listed above.

4.9.7.3 Alternative 2: BLM Utility Corridor Route

Socioeconomic impacts for Alternative 2 would be largely the same as for the Proposed Action, with the exceptions of impacts to residential properties, and recreation and tourism in the Project Area. Regarding residential properties, Alternative 2 would impact the second greatest amount of residential acreage among the five full-route alternatives at 3,315 acres. Regarding recreation and

tourism, Alternative 2 would place the Project parallel to SR 95, east of the highway and within the eastern portion of the La Posa LTVA. The presence of the Project within the LTVA could impact the quality of the recreational experience, either resulting in condensing use in other portions of the LTVA or a reduction in LTVA users. A reduction in LTVA users could, in turn, could change the contribution of recreation and tourism to local economies in the Project Area.

Subalternatives to Alternative 2 (2A through 2E)

Impacts anticipated from Subalternatives to Alternative 2 are substantially similar to those listed above.

4.9.7.4 Alternative 3: Avoidance Route

Socioeconomic impacts for Alternative 3 would be largely the same as for the Proposed Action, with the exceptions of impacts to residential properties, and recreation and tourism in the Project Area. Regarding residential properties, Alternative 3 would impact the third greatest amount of residential acreage among the five full-route alternatives at 3,229 acres. Regarding recreation and tourism, Alternative 3 would impact Cunningham Peak and currently undeveloped portions of the Dome Rock Mountains, while avoiding the actual Copper Bottom Pass area. However, Alternative 3 likely would not change the contribution of recreation and tourism to local economies in the Project Area.

Subalternatives to Alternative 3 (3A through 3M)

Impacts anticipated from Subalternatives to Alternative 3 are substantially similar to those listed above.

4.9.7.5 Alternative 4: Public Lands Emphasis Route

Socioeconomic impacts for Alternative 4 would be largely the same as for the Proposed Action, with the exceptions of impacts to residential properties, and recreation and tourism in the Project Area. Regarding residential properties, Alternative 4 would impact the least amount of residential acreage among the five full-route alternatives at 1,371 acres. Regarding recreation and tourism, Alternative 4 would impact Johnson Canyon and associated undeveloped portions of the Dome Rock Mountains, while avoiding the actual Copper Bottom Pass area. If the technical OHV qualities of Johnson Canyon were perceived by recreation users to have been degraded, recreational use of the Canyon would reduce and could change the contribution of recreation and tourism to local economies in the Project Area. However, it is more likely that this recreational use would shift to other trails within the local area.

Subalternatives to Alternative 4 (4A through 4P)

Impacts anticipated from Subalternatives to Alternative 4 are substantially similar to those listed above.

4.9.7.6 Agency Preferred Alternative

Socioeconomic impacts for the Preferred Alternative would be largely the same as for the Proposed Action.

4.9.8 Residual Impacts

From a socioeconomic perspective, the primary residual impact would be the ongoing collection of taxes for the life of the Project.

4.9.9 CDCA Plan Compliance

There are no CMAs related to socioeconomics that would apply to the Project.

4.9.10 Unavoidable Adverse Effects

No unavoidable adverse effects are anticipated.

4.9.11 Cumulative Effects

The CEA for socioeconomics is Maricopa and La Paz Counties in Arizona and Riverside County, California. This geographic extent was selected as the CEA because socioeconomic factors, such as public services and utilities are often provided at the county level, and the local labor force is expected to come primarily from within these counties. In addition, statistical data on population, housing demand, and other socioeconomic indicators are typically provided at the county level.

Past, past development and population growth have expanded the demand for housing and increased the available workforce. The Project would not cause existing housing or persons to be displaced or necessitate the construction of replacement housing elsewhere. In addition, there would be no impact from construction workers requiring housing that exceeds the supply of local housing or temporary housing facilities and minimal potential changes in the demand for labor or in local employment. As growth has been accounted for in various local and regional plans and projections and no changes to that growth would be likely to occur as a result of the Project, displacement of and demand for housing and changes in the local labor market would not be considered as cumulative effects and are not discussed further. Given the current workforce in the area and the amount of available housing, cumulative impacts as a result of construction workers on the local housing market are considered to be negligible to moderate during Project construction. A cumulative effect would result if the interaction among the effects of the Project and other past, present, and reasonably foreseeable actions combined.

Construction of the Project transmission line in conjunction with renewable energy generation projects (such as solar generating stations) would facilitate the transmission of energy to consumers and may encourage additional development of renewable energy sources.

The Project in conjunction with reasonably foreseeable energy, utility, and other infrastructure projects could support population increases in the area in the foreseeable future. While from a socioeconomic viewpoint this could be positive within the CEA, some members of the public have expressed concern about impacts to the traditional tourism and recreation-based economy. The CEA has a rural character and local communities rely on that character to draw visitors that support their local economy.

4.9.12 Irreversible and Irretrievable Commitment of Resources

The Project would not result in irreversible or irretrievable commitments of socioeconomic resources.

4.9.13 Relationship of Short-term Uses and Long-term Productivity

The Project does not involve trade-offs between short-term uses and long-term productivity from a socioeconomic standpoint.

4.10 ENVIRONMENTAL JUSTICE

4.10.1 Introduction

One census block group in Maricopa County, three in La Paz County, and five in Riverside County have been identified as containing EJ populations of concern. These EJ populations are enumerated in Appendix 3, Table 3.10-3 and shown in Figure 3.10-1, Figure 3.10-2, and Figure 3.10-3 (Appendix 7). Due to their status as a single Federally recognized tribal entity, the CRIT have been identified as an EJ population (Section 3.10.2.4).

4.10.2 Methods for Analysis

4.10.2.1 Analysis Area

The EJ study area for this EIS is the area within 0.5-mile of the Proposed Action and Action Alternatives (Figure 3.9-1, Appendix 7). This is a commonly used buffer distance for EJ study areas. The analysis area includes the study area and all census block groups crossed by the Proposed Action and Action Alternatives; therefore, it extends beyond 0.5 mile. The analysis area includes adjacent and nearby communities that may be affected by the final route.

4.10.2.2 Assumptions

Evaluation of EJ impacts involves assessment of the potential for disproportionately high and adverse impacts on minority or low-income populations. Minority and low-income populations in proximity to the ROW for the Project Action and Action Alternatives were identified in Chapter 3.

The analysis assumes that all appropriate design features, APMs, and BMPs would be implemented (Appendix 2A).

4.10.2.3 Environmental Effect Indicators, Magnitude, and Duration

The following indicator was considered when analyzing potential impacts to EJ populations:

- Construction or operation of the Project would have a disproportionately high and adverse effect on identified EJ populations in the area (as defined by EO 12898).

The magnitudes and durations used to describe impacts to EJ populations are the same as those provided in Table 4-1.

4.10.3 No Action Alternative

Under the No Action Alternative, no ROW would be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. Current conditions in the analysis area (Section 3.10) would continue under the No Action Alternative.

4.10.4 Construction of Action Alternative Segments

4.10.4.1 Direct and Indirect Effects Common to All Action Alternatives

Several census block groups in the analysis area can be defined as EJ populations under CEQ and BLM guidelines because they either have a proportion of minority residents that is greater than average for the state in which they are located, they have a greater proportion of individuals or families that are living below the poverty level, or both. Most of the potential short-term, negligible to minor adverse impacts on EJ populations associated with construction of the Project would be localized in nature, including noise and other types of disruption occurring during construction; longer term impacts may affect visual resources and property value. Potential adverse impacts on local housing conditions and the demand for public services during construction, discussed in Section 4.9, would be somewhat more dispersed.

Given these characteristics of the area and the Project, low-income and minority populations would be affected by the Project, regardless of which Action Alternative is selected. Any reasonably direct route between the two substations crosses two of the four block groups in Arizona where there are EJ populations; any less direct route taken to avoid these block groups would require several times more disturbance, particularly in currently undisturbed or pristine areas. In California, where five of the six block groups in the analysis area contain EJ populations, and the Colorado Substation is surrounded by EJ populations, there is no route that would eliminate impacts to EJ populations.

The analysis of effects by resource area provided in this chapter indicates that few, if any, of these impacts would be “high,” for the purpose of this analysis. In fact, the Action Alternatives are adjacent or nearly adjacent to existing transmission lines, interstate highways, or other utility corridors as a means of minimizing new disturbance to either the natural or human environment.

In the case of the Action Alternatives considered in this EIS, construction impacts would occur over a relatively short duration. Visual and air quality impacts are related to EJ populations would not constitute a disproportionate adverse impact.

Low-income and minority populations may also be positively affected by the Project, including the short-term economic stimulus from construction activities and expenditures, short-term and longer-term increases in tax revenues, and added capacity and reduced congestion for electricity transmission. These impacts are likely to be more geographically dispersed than the localized adverse impacts.

The BLM LTVA and private RV parks in and around Quartzsite have seasonal (that is, temporary) and long-term residents that would not be represented by US Census Bureau data, and as such, it is possible there could be minority and low-income representation exceeding the comparable populations within the EJ comparison area. For the Town of Quartzsite, Arizona

CDP, the census data show 4.1 percent minority representation and a low-income population of 9.6 percent.

The CRIT have expressed that the Project would constitute an adverse impact to the Tribe that exceeds that of the general population, as they have greater ties to the specific environments and lands encompassing the Project Area. This is discussed in further detail in Section 4.6.

A portion of Segment p-11 is adjacent to CRIT reservation lands, and Segments i-06 and cb-03 would cross CRIT reservation lands. The block group data covering this area show a 98 percent minority population, with 26.5 percent Native Americans. The lands crossed by Segments p-11, i-06, and cb-03 are all undeveloped and do not include residences. For tribes and tribal members, EJ population issues, if any, are addressed through the consultation process (Sections 3.6 and 4.6). Scoping consultation with the CRIT resulted in a request for further, detailed consultation regarding its lands and adjacent areas.

Direct and indirect impacts from construction would be short-term and minor. Given the extent of the Project, impacts such as noise and other disruption would occur relatively briefly at any one locale.

4.10.5 Operations, Maintenance, and Decommissioning

During operations and maintenance there would be negligible activity on the ground, and, therefore, negligible impacts to EJ populations. Decommissioning impacts would be similar to those described for construction.

4.10.6 Mitigation Measures

There are no MMs identified for EJ populations for any of the specific segments and, thus, no MMs have been identified for any of the Action Alternatives or subalternatives described below. The Project has been designed to utilize existing utility corridors and avoid environmentally sensitive areas to the extent possible.

4.10.7 Construction of Full Route Alternative and Subalternative Effects

4.10.7.1 Proposed Action and Alternatives 1 through 4

While there is some difference among the Proposed Action and Action Alternatives, including applicable subalternatives, the short-term, negligible to minor impacts on EJ populations would be similar between all alternatives.

4.10.7.2 Agency Preferred Alternative

The impacts on EJ populations under the Preferred Alternative would be similar to the Proposed Action and Action Alternatives. These impacts would be negligible to minor but generally short-term.

4.10.8 Residual Impacts

Development of the new transmission line may have some residual impacts on property values near the transmission line. Any impacts would likely be minor due to the predominantly low-density rural setting and the presence of existing transmission and utility lines nearby.

4.10.9 CDCA Plan Compliance

There are no CMAs related to environmental justice that would apply to the Project.

4.10.10 Unavoidable Adverse Effects

Identified EJ populations would likely experience adverse impacts on a localized basis from construction, operation, maintenance, and decommissioning of the Project. As discussed previously, these adverse impacts are all expected to be minor at most and distributed equally among EJ and non-EJ populations (i.e., not disproportionately). Since EJ population areas would need to be crossed regardless of the Action Alternative selected, this would be an unavoidable adverse impact.

As noted in Section 4.6.10, the CRIT have expressed that the Project would result in adverse impacts on the CRIT that appreciably exceed those of the general population, as development impacts their ancestral ties to the land. Consultation with the CRIT will be ongoing in an effort to address impacts.

4.10.11 Cumulative Effects

The EJ CEA includes the three-county area and the block groups used for evaluating impacts. Like most proposed transmission lines, the proposed routes, under the various alternatives, would use the corridors of existing linear features (such as transmission lines, roads, pipelines, and railroads) as much as possible. Co-locating with existing linear infrastructure tends to minimize environmental and social impacts and avoid relatively undisturbed areas.

Co-locating a new transmission line in an area that already has existing transmission facilities or other linear infrastructure would add incrementally to any existing impacts from that infrastructure on visual resources, quality of life, property values, and other aspects of nearby properties. It is likely, however, that the incremental impact of adding an additional transmission line in areas that already have linear infrastructure in place would not be a major cumulative effect since visual and property value impacts would have already taken place, therefore co-location would result in less impact than adding a new transmission line in an area without existing linear facilities.

Almost all the EJ communities that could be affected by construction and operation of the Project already have existing transmission lines in place. Development of a new transmission line in these areas would likely have a smaller cumulative impact than in areas without such existing linear features.

There would be no permanent or temporary displacement of low-income or minority businesses or residents under the Project to contribute to potential cumulative impacts on minority

populations. The health and safety of these populations would be protected during both construction and operation at the same levels as other populations by implementing the safety measures described in the APMs and BMPs, and other protocols described in Chapter 2, as well as other resource-specific mitigations plans, such as the Hazardous Materials Management Plan (to be completed before NTP would be issued). It is assumed that future projects would be required to mitigate any significant impacts on these populations; therefore, cumulative impacts on minority and low-income populations as a result of the Project in combination with reasonably foreseeable future projects also would be minimal.

As noted in Section 4.6.11, the cumulative development within and around the CEA has had the effect of substantially altering the native landscape of affiliated Indian tribes, including the CRIT. Consultation with the CRIT is ongoing. As expressed by the CRIT, the continued development and alteration of the landscape cumulatively contributes to impacts on the cultural landscape and the deep connection the CRIT have with the land, natural and cultural resources, and wildlife.

4.10.12 Irreversible and Irretrievable Commitment of Resources

The Project would not result in irreversible or irretrievable commitments to EJ populations.

4.10.13 Relationship of Short-term Uses and Long-term Productivity

There would be no short-term uses versus long-term productivity conflicts to EJ as a result of the implementation of the Project.

4.11 VISUAL RESOURCES

4.11.1 Introduction

Impacts to visual resources are discussed in terms of the visual impact of contrast between the Project and surrounding landscape, conformance with established Federal and local requirements for management of visual resources, and plan amendments included to address RMP non-conformance.

4.11.2 Methods for Analysis

4.11.2.1 Analysis Area

Impacts to visual resources are analyzed for portions of the study area (Section 3.11.1) where the Project would be visible, as documented by the KOPs.

4.11.2.2 Assumptions

The analysis assumes that:

- All appropriate design features, APMs, BMPs, and any additional monitoring and MMs included in Section 4.11.6 would be implemented. All categories of these would be mandatory, and where applicable would be in place before construction begins.
- The selected KOPs are representative of the views of the majority of sensitive viewers in the Project Area.

4.11.2.3 Environmental Effect Indicators, Magnitude, and Duration

Impacts to visual resources would occur if:

- Project-related changes would reduce scenic quality rating scores based on the BLM visual resource inventory system;
- The Project results in major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations such as parks, residences, historic monuments, scenic trails, community gateways, and other culturally or regionally important viewpoints;
- The Project conflicts with visual standards, ordinances, or policies established by the BLM (VRM Classes), other potentially affected Federal entities, or other state, county, or local agencies;
- The Project results in visual intrusion or disruption to a viewshed of recognized cultural significance (e.g., eligible for registration with the NRHP, or identified as a TCP);
- The Project results in visual resource contrast ratings that conflict with the management goals of assigned VRM or interim VRM classes;
- The RMP Amendment associated with the Project reduces VRM class objectives that would be required for future projects proposed in the area;
- The Project has a substantial adverse effect on a scenic vista;
- The Project substantially degrades the existing visual character or quality of the site and its surroundings; or
- The Project creates a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Units of measures include:

- Scenic Quality Classification – Classes A, B, & C;
- Sensitivity Classification – high, medium, and low;
- Distance zones – foreground-middle ground, background, seldom seen;
- VRI Classes I, II, III, & IV;
- Level of visual contrast; and,
- Conformance to VRM class objectives for Classes I, II, III, & IV.

4.11.2.4 Visual Contrast Rating

The BLM performs a process called contrast rating, as described in Manual H-8431-1 (BLM 1986), Visual Resource Contrast Rating, to analyze potential visual impacts of proposed projects and activities. The degree to which a management activity affects the visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the Project. This assessment process provides a means for determining visual impacts and for identifying measures to mitigate these impacts. The 10 environmental factors were analyzed to determine specific effects observed from each KOP. When the views from KOPs were found to not meet the VRM classes established for the viewed area that would be impacted by the Project, analysis was used to determine the scope of the effect and establish boundaries for VRM class changes, which would both address the issue of Project non-conformance as well as provide for future manageability of the area by the BLM. Visual Contrast Rating Worksheets were completed for all KOPs, which provide detailed analysis of visual impacts as determined from each KOP.

4.11.2.5 Simulations

KOPs were selected for simulation to aid in analysis of:

- Segments perceived to be non-conforming to VRM class objectives,
- Non-BLM publicly sensitive areas, and,
- Generally representative areas.

Simulations were used to aid in visualization and description of Project impacts, and determinations for appropriate MMs and RMP amendments. Simulations were prepared using models of proposed structure types and estimated structure locations placed along the centerline for the simulated segments. Due to the desert environment where the Project is proposed, reclamation and revegetation would be a slow and long-term prospect, with limited expected recovery. Where possible and estimated to be visible, ground disturbance at the bases of the structures was also simulated. In many cases, access disturbance would be required for structure construction, and would have long-term visual effects similar to ground disturbance at the structure bases. However, specific access routes have not been proposed or estimated for the Project, and due to the level of subjectivity, could not be simulated.

The majority of structures for the Project are proposed to be guyed V structures. Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas, such as the vicinity of the LTVA and Copper Bottom Pass. To address this safety risk, self-supporting lattice structures with matching color and span lengths to match the existing DPV1 structures or monopoles would replace the guyed V structures in certain locations as mitigation to eliminate the hazards associated with guy wires. However, these required changes in structures in certain areas also affect the visual resources analysis. Where structure changes would be required in areas simulated, additional simulations were prepared showing the replacement structure types.

4.11.2.6 Analysis of KOPs/Segments not Simulated

Simulations were also used to be representative of visual impacts as a guide to analysis of KOPs/segments not simulated. While the 10 environmental factors were evaluated in the visual contrast rating process for each KOP, in collectively reviewing Project simulations, it was found that the distance between the viewer and the Project (proximity), structure form contrast, background/skylining of infrastructure, and intervening vegetation/topography had relatively consistent, and therefore predictable visual impacts. Therefore, these visual elements were used to estimate visual impacts for KOPs/segments not simulated.

Appendix 4, Section 4.11 provides details regarding the process used for analysis of KOPs/segments not simulated.

4.11.3 No Action Alternative

Under the No Action Alternative, a ROW would not be granted for the Project and the transmission line, SCS, and ancillary facilities would not be constructed. The visual resources of the lands on which the Project is proposed would continue to be managed as it currently directed by the various applicable BLM RMPs and other local planning ordinances and guidelines. Lands in the analysis area would remain as is, which is primarily undeveloped desert or agricultural land. Current visual resources in the analysis area described in detail in Chapter 3, Section 3.11 would be unchanged under the No Action Alternative. There would be no changes that would alter views, view sheds, scenic quality, or sensitivity levels of the scenic resources beyond current conditions.

4.11.4 Construction of Action Alternative Segments

4.11.4.1 Direct and Indirect Effects Common to All Action Alternatives

During construction, visual impacts would result from the introduction of construction vehicles, equipment, and construction materials within staging areas, access roads, and within the transmission line ROW. The presence of work crews, vehicles and other equipment, and dust generated by construction activities would be visible in views toward the Project Area from the surrounding area at varying distances depending on local conditions. Motion, dust, and activity would attract attention in certain circumstances. Where the Project would be in closer proximity to viewers and there is a lack of intervening topography or vegetation, ground disturbance from access routes and at structure bases could be visible to observers.

Disturbance resulting from construction would be largely short-term in duration, and visible effects from active construction would diminish subsequent to clean up and reclamation of the temporary staging areas and access roads. Reclamation of desert vegetation can take years to complete and conditions in areas of disturbance are expected to change over the years as reclamation takes place. Because of the small scale of vegetation disturbance required, there would be minimal visible contrasts that would be reduced over time.

Sensitive viewers would be affected by the short-term Project construction impacts. However, the transmission line structures would cause a major, long-term change to scenery, while construction of the structures and facilities would be temporary. Landform modification would

be noticeable and create visual contrast within the viewshed. Examples of transmission structure visibility are provided in Appendix 4, Section 4.11.

The Project would be visible to some degree from many locations within the eastern portion of the Project Area. The vast majority of sensitive viewers would be traveling along I-10; substantially fewer viewers would be traveling Salome Road, and fewer still would be traveling the relatively limited number of local routes. A large portion of the lands in this area are BLM-administered land, but there are also large areas of private lands with isolated residences that could be impacted visually.

The majority of the BLM-administered land in the area is rated scenic quality C. While portions of any of the Action Alternatives may reduce the scenic quality, overall, because the scenic quality in the units containing the Action Alternatives in this area is C, impacts to scenic quality would not further reduce the scenic quality rating of the units.

Because of the north-south linear nature of the Project Area in the vicinity of Quartzsite, visibility of the Project would be limited to those area within approximately 3 miles of the viewer, with the more distant area becoming faded, camouflaged, or obscured by atmospheric conditions, and intervening topography, human developments, and/or vegetation. The majority of the visual impacts in this area would be to Federal lands managed by the BLM. However, some of the Action Alternatives on BLM-administered land surround the community of Quartzsite and have potential to impact the views of private landowners.

Similar to the eastern portion of the Project Area, the majority of the BLM-administered lands are rated scenic quality C. While the Project in this area may reduce the scenic quality, overall, because the scenic quality in the units containing the segments is C, impacts to scenic quality would not further reduce the scenic quality rating of the units. However, where the sensitivity of the eastern portion of the Project Area is largely moderate, the sensitivity in the vicinity of Quartzsite is high, making any changes to scenic quality more noticeable to viewers in the area.

Visibility of the Project in the vicinity of Copper Bottom Pass varies and would be located in deep and narrow V-shaped canyons within the Dome Rock Mountains, limiting the extent of views, but placing viewers in close proximity. Portions of the Proposed Action and Action Alternatives would be located in open areas outside the Dome Rock Mountains, with more panoramic views and greater opportunity for long-distance visibility. However, this area is heavily used for OHV recreation, with routes ranging from maintained gravel roads to two-track routes, to a technical OHV route through Johnson Canyon. The result is viewers would frequently be placed in close proximity and in some cases, the Project would be viewed in conjunction with the existing DPV1 transmission line. For all segments that would be viewed in conjunction with the existing DPV1 transmission line, spans and structure locations would be matched to the extent possible, and the surface of the structures would be dulled to match the existing infrastructure, if not treated to color blend with the mountainous backdrop, which could help reduce contrast.

This portion of the Project Area is almost exclusively Federal land managed predominantly by the BLM, but also managed by Reclamation. Further, a portion of this part of the Project Area includes CRIT tribal land. The visual effects would be felt by those traveling across or recreating on public lands, with little or no impacts expected to the views of private landowners.

The scenic quality in this portion of the Project Area is rated mostly B with high sensitivity. Of the entire Project Area, Federal lands in the Copper Bottom Pass area have the greatest potential for reductions in scenic quality of the unit(s) and noticeable impact to viewers, which is heavily used for recreation. Consequently, the VRI and VRM Classes in this area tend to be the highest within the Project Area, meaning the area has the least tolerance for visual change without major impacts and is more sensitive to changes in VRM Class.

Visually, where the Project approaches the Colorado River it would be viewed in context of the river and the bluff where the river gives way to the floodplain. Crossing into eastern California would be viewed in the context of the cultivated river floodplain, with sporadic residential development. Generally speaking, the Project in these areas would be visible for long distances but may be partially obscured or overwhelmed by other intervening visual features, such as trees. The westernmost portion of the Project Area rises over a bluff above the floodplain to be on sandy, sparsely vegetated desert plain, where the Project would be viewed in the context of numerous existing or proposed energy production or transmission facilities, including the Colorado River Substation.

The scenic quality of BLM-administered land in the westernmost portion of the Project Area is rated mostly B, and most of the areas have high sensitivity. However, the area in the vicinity of the Colorado River Substation contains large utility corridors and areas slated for energy development, with numerous solar projects either under review or approved. The VRM class for this area is Class IV.

Appendix 2A, Section 2A.12 lists APMs and BMPs that would be applied to the Project to minimize visual impacts.

4.11.4.2 Direct and Indirect Segment-specific Effects

Appendix 4, Tables 4.11-1 through 4.11-4 summarize segment-specific visual impacts and mitigation by KOP for all segments. Completed visual contrast rating forms for all KOPs provide detailed analysis of visual impacts as determined from each KOP. Segment-specific discussions that follow are broken out by Proposed Action and Action Alternative, and are presented for:

- Those segments that would not conform to established VRM Classes,
- Those segments that would require mitigation or have mitigation from other resources that would affect visual resource impact analysis;
- Those segments for which BLM is considering an RMP amendment; or
- Those segments that would affect the views of private landowners (presented under a separate heading below).

Appendix 4, Tables 4.11-5 and 4.11-6 provides a summary of the visual resource-related RMP Amendments to the Yuma RMP and Lake Havasu RMP under consideration in certain alternatives.

Proposed Action Segments

All Proposed Action segments in the eastern portion of the Project Area would conform to BLM VRM class objectives. However, the Yuma RMP would need to be amended to change the VRM class of Segment p-06 west of the Kofa NWR.

Segments p-08 and p-09 would primarily be viewed by travelers on US 95; however, OHV recreationists on the access road paralleling the DPV1 transmission line or on any number of OHV routes east of US 95 would also be viewing these segments. Views of these segments from US 95 are represented by KOP 29 (Figure 4.11-1a, Appendix 7, showing the proposed guyed V structures). Segments p-08 and p-09 would be readily viewed from KOP 29 directly east and west of and crossing US 95. In addition to the DPV1 transmission line, at this intersection the WAPA 161kV H-frame structures, monopole structures of the distribution line providing power to the Cunningham Peak communications site, associated conductors, and pipeline infrastructure are visible, making the area look visually cluttered and developed. Because of the presence of the large self-supporting lattice structures of the DPV1 transmission line, the addition of the Project structures would be a relatively minor addition.

Because guyed V structures would pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas, such as the vicinity of the LTVA and Copper Bottom Pass, in this location, self-supporting lattice structures with matching color and span lengths to match the existing DPV1 structures would replace the guyed V structures as mitigation to eliminate the hazards associated with guy wires (Figure 4.11-1b, Appendix 7). However, regardless of structure type and application of additional MMs, taken together, this level of development would be a major modification to the visual environment and dominate the view. Thus, VRM Class III objectives would not be met.

An amendment to the Yuma RMP to change the VRM class of Segments p-07, p-08, and p-09 from Class III to Class IV would ensure conformance. Consequently, amendment of the RMP to similarly change the VRM class of Segment p-06 west of the Kofa NWR would be implemented (Figure 4.11-2, Appendix 7).

Proposed Action Segments p-09, p-10, p-11, p-12, and p-13, as viewed from KOPs 30, 32, 35, 37, and 38 (simulated, Figures 4.11-3, 4.11-4, 4.11-5a and b, 4.11-6, 4.11-7a and b, respectively, Appendix 7) would be within the BLM utility corridor designated VRM Class III. The existing DPV1 transmission line and the Proposed Action would follow Copper Bottom Pass Road, placing travelers on the road (primarily recreationists) within approximately 0.1- and 0.2-mile of the Project. Additionally, west of the Dome Rock Mountains, a variety of gravel roads, two tracks, and OHV trails wind around through the area, greatly varying distances between viewers and infrastructure. Along the Proposed Action, viewers would be observing the Project in the context of the DPV1 transmission line. As viewers move through the landscape, when the Project would be in closest proximity to the viewers, the structures would outsize the landscape features and portions would be skylined. Further, due to steeper than average slopes in Copper Bottom Pass, access roads (upgraded existing roads, new centerline access roads, or access spur roads) would range from 18 – 22 feet in width for relatively flat areas (0 – 7.9 percent slope), 25 – 30 feet in width for moderately sloped lands (8 – 14.9 percent slope), and 30 – 76 feet in width for steep lands (>15 percent slope). Areas allowing for vehicular turning radius would also be placed at intervals along Copper Bottom Pass Road. Such alterations would be visible in the views from

KOP 32 and 35 (simulated; Appendix 1, Figure 4.11-4 and 4.11-5a and b, respectively), though current simulations do not reflect maximum potential width of the roads. As viewed in that situation, the Project, in conjunction with the DPV1 infrastructure, would be a major modification to the landscape and would dominate the view, thus not conforming to VRM Class III objectives.

DCRT proposes a combination of guyed V and self-supporting lattice structures for these Proposed Action segments (Figure 4.11-8a, Appendix 7). Because guyed V structures would pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas, such as the Copper Bottom Pass area, along these segments, self-supporting lattice structures would replace the guyed V structures as mitigation to eliminate the hazards associated with guy wires and also match the existing DPV1 structures, decreasing visual impacts (Figures 4.11-8b, 4.11-3, and 4.11-6, Appendix 7).

This level of development along these segments does not meet VRM Class III objectives. An amendment to the Yuma RMP to change the VRM class of these segments from Class III to Class IV would ensure conformance.

Alternative Segments

The only Action Alternative segments in the eastern portion of the Project Area that would not conform to BLM VRM class objectives are Segment i-04, which is viewed from KOP 20 (simulated, Figure 4.11-10a, Appendix 7) and Segment in-01, viewed from KOPs 19, 20, and 59.

Segment i-04 would range in distance from viewers on I-10 from 0.1-mile to 0.4-mile. Portions of Segment i-04 are used for OHV recreation during the heavy visitor use season, which would put recreationists in close proximity to the Project infrastructure. Because guyed V structures would pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas, in this location, self-supporting lattice structures or monopoles would replace the guyed V structures as mitigation to eliminate the hazards associated with guy wires (Figure 4.11-10b, Appendix 7). However, regardless of structure type and application of additional MMs, taken together, this level of development would be a major modification to the visual environment and dominate the view. Thus, VRM Class III objectives would not be met. An amendment to the Yuma RMP to change the VRM class of Segment i-04 from Class III to Class IV would ensure conformance (Figure 4.11-11, Appendix 7).

Segment in-01 (Figure 4.11-12, Appendix 7) would be on the north side of I-10 divided between the Yuma and Lake Havasu FOs. The portion of the route within the YFO would be within a BLM designated utility corridor and would be approximately 0.2-mile from viewers on I-10 at the closest point, and slightly less than 0.3-mile along the majority of that portion of the segment; all of which would be designated VRM Class III. Because the Project would be less than 0.3-mile from viewers along I-10, the infrastructure would be expected to outsize surrounding landforms, be a major modification and dominate view; amendment of the Yuma RMP to change the VRM Class from III to IV would ensure conformance (Figure 4.11-11, Appendix 7).

The portion of Segment in-01 within the Lake Havasu FO would be within a BLM utility corridor, crossing approximately 3 miles of lands designated VRM Class II and 5 miles of lands designated VRM Class IV. Segment in-01 within the Lake Havasu FO would be approximately

0.1-mile from viewers along I-10 at its closest point, but most portions would be approximately 0.2-mile away. The segment would meet VRM Class IV objectives; however, would not meet VRM Class II objectives given proximity to the Project in that area. Therefore, an amendment of the Lake Havasu RMP to change the VRM Class from II to IV along this segment would ensure conformance. In the Quartzsite area, Segment x-06 would be primarily viewed from within the LTVA; however, OHV recreationists on the access road paralleling the DPV1 transmission line or on any number of OHV routes east of US 95 and the LTVA would also be viewing this segment. Views of this segment from within the LTVA are represented by KOPs 22 (simulated, Figure 4.11-13a, Appendix 7, showing the proposed guyed V structures). Views of the Project along Segment x-06 would be most impacted for those occupiers of the outer eastern edge of the LTVA, where the segment would be a few hundred feet away. During the heavy visitor use season, views would become more blocked and muted as viewers move into the central portion of the LTVA, where RVs would intervene in the view.

Segment x-07 would parallel the east side of US 95 and the existing WAPA 161kV transmission line. This segment would be viewed either from the highway or from within the LTVA, as represented by KOPs 28 (simulated, Figure 4.11-14, Appendix 7). Similar to Segment x-06, views would become more blocked and muted as viewers move into the central portion of the LTVA, where RVs would intervene in the view.

The structures and conductors along these segments would pose a large, dominating presence that would be a major modification to the visual environment (Figure 4.11-14, Appendix 7).

Because guyed V structures would pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas, such as the vicinity of the LTVA and Copper Bottom Pass, along Segment x-06, either self-supporting lattice structures or monopoles would replace the guyed V structures (Figures 4.11-13b and c, Appendix 7) as mitigation to eliminate the hazards associated with guy wires (Figures 4.11-15a and b, Appendix 7). Along Segment x-07, lattice H-frame structures would replace the guyed V structures to more closely resemble the WAPA 161kV structures, as well as eliminate guy wires.

Regardless of structure type and application of any additional MMs, taken together, this level of development along Segments x-06 or x-07 would result in major modifications to the visual environment and dominate the view. Thus, VRM Class III objectives would not be met. An amendment to the Yuma RMP to change the VRM class of Segment x-06 from Class III to Class IV for 0.3-mile either side of segment centerline would ensure conformance. An amendment to the Yuma RMP to change the VRM class of Segment x-07 from Class III to Class IV, where applicable would ensure conformance.

Segment qs-01 (Figure 3.11-12, Appendix 7) would also be located in the northern portion of the LTVA east of US 95 and south of I-10, in a heavily recreated area southeast of Quartzsite. Similar to Segments x-06 and x-07, proposed guyed V structures would be replaced with other structures to eliminate the hazards associated with guy wires. Because the structures would be replaced with a different type, it is recommended that in this location the guyed V structures be replaced with monopoles to more closely match the WAPA 161kV structures, which would also reduce contrast and visual clutter.

Segment i-06 (Figure 3.11-17, Appendix 7) would range between 0.1- and 0.2-mile from viewers traveling on I-10, in close proximity to the heavily recreated areas south of Quartzsite and Copper Bottom Pass. Similar to Segment i-04, proposed guyed V structures would be replaced with other structures to eliminate the hazards associated with guy wires. However, regardless of structure type and application of additional MMs, due to proximity of viewers, this level of development would be a major modification to the visual environment and dominate the view. Thus, VRM Class III objectives would not be met. An amendment to the Yuma RMP to change the VRM class of Segment i-06 from Class III to Class IV would ensure conformance for the portion of the segment located on BLM-administered land.

The construction of Segments cb-01/cb-02 would require a helicopter fly yard, which would require crushing, mowing, or removal of vegetation and would disturb soil on 43.5 acres. In the short term, these locations would cause a visual change to the landscape due to the movement of the helicopters and an increase in fugitive dust. In the long term, the disturbed soil and crushed or mowed vegetation would be noticeable on the landscape until fully recovered.

Segments cb-01, cb-02, and cb-03 would all be located in narrow canyon settings with limited visibility. Of these Action Alternative segments, only the portion of Segment cb-03 on BLM-administered land would be located within the BLM utility corridor along the Proposed Action route and Copper Bottom Pass Road; however, it would be on the opposite side of the canyon from the DPV1 transmission line, as viewed from KOP 35 (simulated, Figure 4.11-5b, Appendix 7). Similar to the Proposed Action segments, travelers (recreationists) on the road would be in relatively close proximity to the Project along Segment cb-03 where the closest structures would outsize the surrounding landscape features and portions may be skylined. Despite the fact that the DPV1 infrastructure would be on the opposite side of the road, the Project would still be viewed in the context of the DPV1 transmission line, and taken together, would be a major modification to the landscape and would dominate the view, thus not conforming to VRM Class III objectives. In certain alternatives the Yuma RMP would be amended to VRM Class IV with the extent of the change limited to the viewshed where both the Project and DPV1 would be visible (bounded by the adjacent ridgetops), while the rest of the utility corridor would remain VRM Class III (Figure 4.11-9[2], Appendix 7). Mitigation measures similar to those described above for portions of Segment cb-03 located within the BLM utility corridor would also be recommended for the portion of Segment cb-03 located on CRIT lands; however, the CRIT would ultimately be responsible for determining required mitigation for portions of the segment on CRIT land.

Portions of Segments cb-01 and cb-02 would be within the BLM utility corridor designated VRM Class III, where they would connect to the Proposed Action route. The portion of these segments outside of the utility corridor would be located exclusively within VRM Class II areas, as viewed from KOPs 33 and 34 (simulated, Figures 4.11-16 and 4.11-17a and b, Appendix 7, respectively). Segment cb-01 would cross the flank of Cunningham Peak to the west side of the Dome Rock Mountains and connect to Segment cb-04. Distant views contain Cunningham Peak and the communications site on its top; however, from areas outside of the Copper Bottom Pass area, the transmission infrastructure would either not be visible or minimally visible but

[2] For purposes of the EIS, location of the VRM Class III/IV boundary as discussed here has been estimated. Should this segment be included in the selected alternative, the boundary would be precisely located using a viewshed analysis.

indistinguishable, due to distance from viewers. Segment cb-02 would follow a portion of Johnson Canyon, then cross a ridge to connect to Segment cb-04.

As described for the Proposed Action segments, the closest structures to viewers along Segments cb-01 or cb-02 would outsize the landscape features and portions would be skylined. Because either of these segments would be a new addition in a heavily used, relatively scenic, and visually sensitive area, the Project would be a major modification to the landscape and would dominate the view, thus not conforming to VRM Class II objectives. To reduce visual impacts in these visually sensitive areas, no access would be constructed, surface disturbance would be minimized, and color treating for both disturbed rock surfaces and the structures to reduce contrast with the surrounding landscape would occur. In certain alternatives the Yuma RMP would be amended to VRM Class IV (both inside and outside the utility corridor) with the extent of the change limited to the viewshed where either segment would be visible (bounded by the adjacent ridgetops), while the rest of the utility corridor unaffected by the Project would remain VRM Class III.

Segment cb-04, as viewed from KOP 34 (simulated, Figures 4.11-17a and b, Appendix 7), would cross VRM Class II and III designated lands west of the Dome Rock Mountains, the eastern portion of which would have enclosed views of deep canyons connecting to Segments cb-01 or cb-02, then opening up to broader views of the west side of the Dome Rock Mountains and points west. The proposed structures for Segment cb-04 are guyed V structures, but because this is in the heavily recreated Copper Bottom Pass area, guyed V structures would be replaced with self-supporting lattice structures to eliminate potentially hazardous guy wires. Similar to Segments cb-01 and cb-02, the structures closest to viewers would outsize surrounding landscape features, a portion would be skylined, and the Project would be new development in a previously undeveloped area, and thus would not conform to VRM class objectives. In certain alternatives, the Yuma RMP would be amended to change the VRM to Class IV in an area 0.3-mile either side of the centerline of Segment cb-04.

Segments cb-05 and cb-06, as viewed from KOPs 36 and 38 (simulated, Figures 4.11-18 and 4.11-12b, Appendix 7, respectively) would offer alternative connections from Segment cb-04 to the Proposed Action route. On BLM-administered land, Segment cb-05 would cross VRM Class III designated lands while Segment cb-06 would cross lands primarily designated VRM Class II. Both segments would occur in areas with predominantly open panoramic views that are heavily used for OHV recreation, which would place viewers in close proximity to the infrastructure. Because of the heavy recreation use, proposed guyed V structures would be replaced with self-supporting lattice structures to eliminate potentially hazardous guy wires. These lattice structures would also reduce contrast with the existing DPV1 infrastructure, where viewed in conjunction with the Project. These segments would not conform to VRM Class II and III objectives. An amendment to the Yuma RMP to Class IV in an area 0.3-mile either side of the centerline of these segments would ensure conformance.

Residents and Local Viewers

Potential impacts to residents in the easternmost portion of the Project Area are represented by KOPs 5, 7, 19 (Figures 4.11-19, 4.11-20, and 4.11-21, Appendix 7, respectively). Potential impacts to travelers and other viewers on private lands are represented by KOPs 2 and 6 (Figures 4.11-22a and b and 4.11-23, respectively; Appendix 7), along Salome Road, and KOP 18

(simulated, Figures 4.11-24a and b, Appendix 7) near developments at the Vicksburg Road exit off I-10.

Segments qs-01 and qs-02, represented by KOPs 24 and 26 (Figure 3.11-12 and simulated Figure 4.11-25, Appendix 7, respectively); and qn-02, represented by KOP 27 (Figure 3.11-14, Appendix 7), would be in relatively close proximity to the community of Quartzsite and would be visible from private lands.

Segment qs-01 would be on BLM-administered land approximately 0.25-mile away at its nearest point from the RV Park where KOP 24 is located. Because the Project along this segment would be less than 0.3-mile away from the viewer, the existing infrastructure begins to outsize the surrounding landscape features and dominate the view, and the Project would add to visual clutter. The Project along Segment qs-01 is proposed to use guyed V structures; however, those structures would be replaced with monopoles to eliminate potential hazards to OHV recreation from guy wires. This replacement would also reduce the contrast between the Project and the existing WAPA 161kV monopole structures. Addition of the Project along this segment with monopole structures would have a moderate to major impact to the views of RV park residents by increasing the sense of development and visual clutter.

Segment qs-02 would be on BLM-administered land approximately 0.75-mile away from the RV Park where KOP 26 is located. The Project along Segment qs-02 is proposed to use guyed V structures; however, those structures would be replaced with monopoles to eliminate potential hazards to OHV recreation from guy wires. This replacement would also reduce the visual clutter of the guy wires in the view. Addition of the Project along this segment with monopole structures would have a negligible to minor impact to the views of RV park residents as the vertical structures would blend well with the other single pole vertical elements in the view.

Segment qn-02 would be on BLM and ASLD lands northeast, north, and northwest of Quartzsite. The nearest residence would be approximately 0.2-mile south of the segment, and the segment would be new development in an undeveloped area north and northwest of the residences. Northeast of the KOP, the segment would be paralleling the existing WAPA 161kV transmission line. As previously described, at distances less than approximately 0.3-mile from the Project, the Project is estimated to be outside the surrounding landscape features and dominate the view. Therefore, the Project along Segment qn-02 would have a moderate to major impact on views of private landowners in this area.

4.11.5 Operations, Maintenance, and Decommissioning

The structures, conductors, permanent access roads, and SCS, would increase visual contrast, mainly during the operational phase of the Project. Visual impacts would be most evident where cleared areas created scars, barren areas, or unnatural lines and contrast resulting from clearing which would remain for the life of the Project. The most evident and long-term visual contrasts result from the presence of structures and conductors within the landscape. These vertical structures, conductors, guy wires, and access roads would introduce long, linear disturbance that would contrast in areas where the Project would be relatively close to the KOP and in relatively natural areas where no development or existing infrastructure is visible or noticeable in the landscape. After decommissioning, these visual contrasts would no longer be present.

During maintenance, types of activities would be similar to but smaller in scope, and less noticeable than during construction (for example, structure or conductor maintenance or repair may require similar types or levels of effort to construction, but would occur in more discrete areas, requiring less equipment and/or disturbance that would be noticeable). During decommissioning, activities (types and levels of effort, and extent of disturbance) would be similar to construction, and likely equally noticeable.

Impacts to VRI were analyzed based on Scenic Quality Rating Unit (SQRU) scores (Appendix 4A). Most SQRU scores were solidly within the range such that any reductions in scenic quality that would result from the Project would not change the overall rating for the unit.

4.11.6 Mitigation Measures

The applicant has committed to APMs, and the BLM developed required BMPs, that would minimize impacts to visual resources (Appendix 2A, Section 2A.12). However, the following MMs would be required, as appropriate, for VRM compliance and/or to reduce impacts to visual resources:

MM-VIS-01: Minimize disturbance at structure bases.

MM-VIS-02: No access routes would be constructed to structure sites, and thus structure sites be accessed by foot or helicopter.

MM-VIS-03: Apply surface treatments (such as Permeon, or an approved equal) to newly exposed rock and gravel to blend with surrounding rock face and minimize visual impact of attention-attracting disturbance.

MM-VIS-04: Limit height of structures to that absolutely necessary for safety and operation in order to minimize skylining and reduce the need for beacons to protect dark sky resources and maintain astronomical viewing opportunities.

MM-VIS-05: Shorten span lengths and design the route to follow canyon routes to minimize elements (conductors in particular) that would be overhead of viewers and skylined.

MM-VIS-06: Use structure type to match existing structures and reduce form contrast.

4.11.7 Resource Management Plan Amendments

RMP Amendments to address issues with visual resources management would only be included for the Yuma and Lake Havasu RMP. The following Proposed Action and Action Alternative segments (but not the Agency Preferred Alternative) include RMP amendments for VRM class changes as shown on Figure 4-1:

- Segments p-06 through p-13
- Segments cb-01 through cb-06
- Segments i-03 through i-06
- Segment in-01

- Segments qs-01, qs-02, and qn-01
- Segments x-06 and x-07

Appendix 4, Tables 4.11-5 and 4.11-6 summarize potential visual resource-related RMP amendments by segment to the Yuma RMP and Lake Havasu RMP, respectively.

The impact of these proposed RMP amendments would be to change the visual management standards for the design and management of future projects and for the rehabilitation of existing projects from the current VRM Class II or III to VRM Class IV, which allows for major modifications to the landscape.

4.11.8 Construction of Full Route Alternatives and Subalternative Effects

4.11.8.1 Proposed Action

Full Route Analysis Summary

The Proposed Action route would parallel the existing DPV1 transmission line and minimize associated visual impacts by utilizing existing access. This route would avoid visual impacts to the Town of Quartzsite. Additionally, the Proposed Action route would avoid direct impacts to CRIT land and to sensitive recreational users of Johnson Canyon. This route would not meet VRM class objectives and would include amendment of the Yuma RMP for Segments p-13 through p-16.

Linear KOP

The Proposed Action would impact the linear KOP along I-10 in the eastern portion of the Project Area approaching and between the two I-10 crossings of Segment p-01. Scenic quality in this area is rated B, except for a very small area near the easternmost crossing; and sensitivity is moderate. At the crossings, the infrastructure would appear as a major modification and dominate views within approximately 0.3-mile either side of each crossing, and north and south of each crossing location.

However, travelers on I-10 going 75 miles per hour (mph) would only be viewing each crossing in close proximity for a few seconds. The crossings would be within the Arizona Department of Transportation (ADOT) easement for I-10 and on a combination of ASLD and private lands on either side of the easement. The BLM recommends structure changes in these locations to reduce contrast and the sense of visual clutter; however, ultimately, the type of structures used would be determined between DCRT and the landowner.

4.11.8.2 Alternative 1: I-10 Route

Full Route Analysis Summary

The I-10 full route would utilize only a small portion of the Proposed Action route (Segment p-01), then from the westernmost I-10 crossing, follow I-10 until turning south to connect to the Colorado River Substation. Placing the transmission line along I-10 would consolidate disturbance and development along the existing highway, large portions of which would be within BLM utility corridors. This route would result in direct impacts to more state trust,

private, and CRIT lands along I-10, would have greater visual impacts to the Town of Quartzsite, and would have the greatest visual impact to numbers of viewers in the Project Area, due to proximity along I-10. However, a greater portion of the route on BLM-administered lands would meet VRM class objectives, with only Segments i-03 through i-06 including amendment of the Yuma RMP.

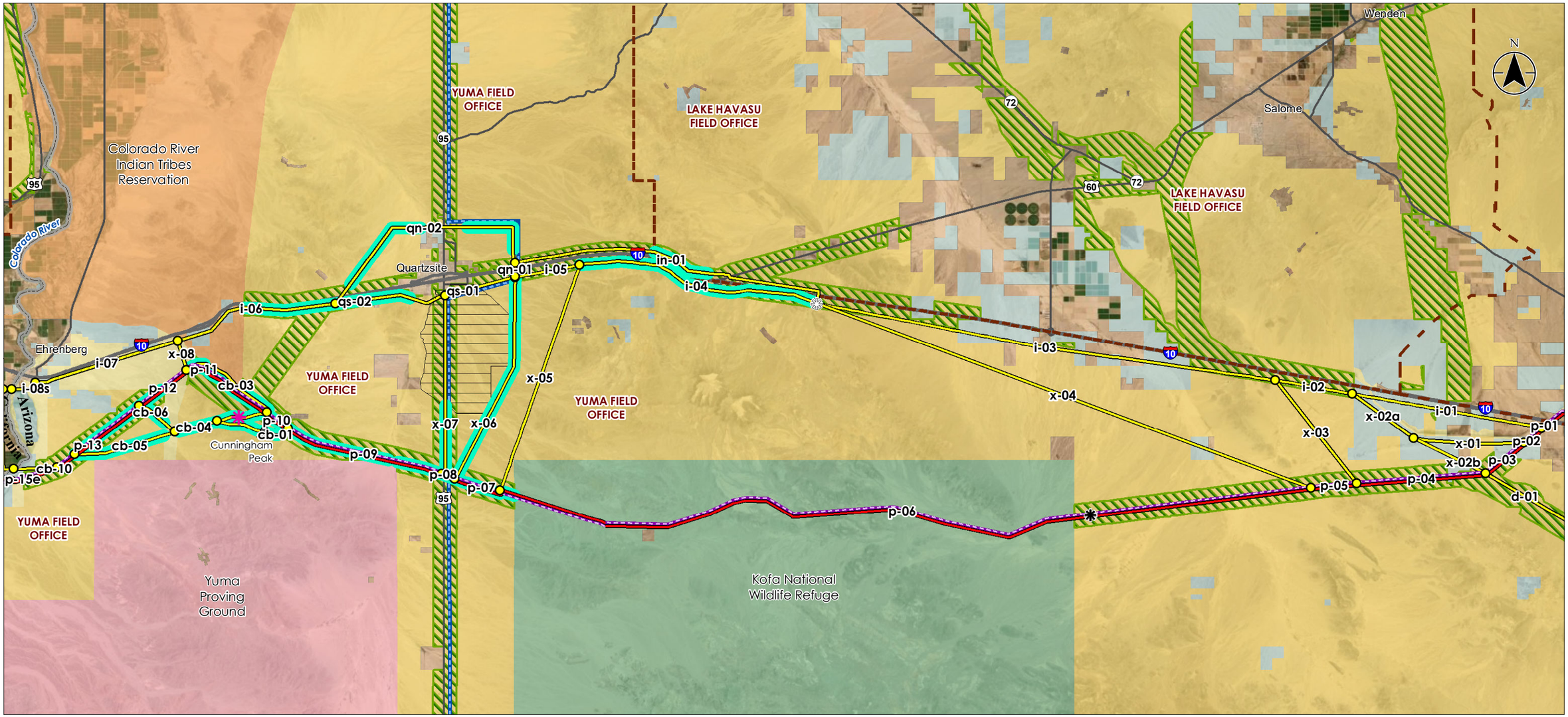
Linear KOP

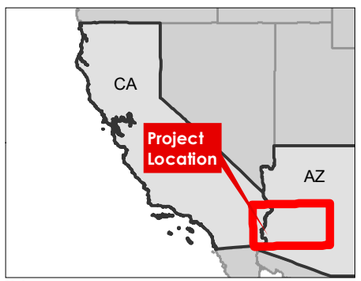
From the western crossing of I-10 by Segment p-01, Alternative 1 would continue west, paralleling the south side of I-10. With the exception of Segment p-01, most of the segments along the I-10 route would involve adding new transmission line infrastructure in areas where there is no existing infrastructure. Many of these areas are open lands with minimal or no perceived development. Addition of the transmission line along these routes would add a visible and, in many cases, noticeable development. However, most of the areas crossing BLM-administered land would meet established VRM class objectives. For the majority of the route, the Project would be 0.3-mile or more away from viewers traveling along I-10, which at its nearest points would place the Project within the context of the surrounding landscape. Under Alternative 1, the Alternative SCS location would be used, connected by Segments i-03 and i-04; however, the Alternative SCS would meet VRM Class III objectives as viewed by travelers along I-10 (Figures 4.11-26 and 4.11-27, Appendix 7). In addition, the alternate 12kV SCS distribution line would be visible crossing I-10 and extending south of the interstate to the Alternative SCS.

Views along I-10 crossing CRIT lands would be similarly impacted. East of the Colorado River, the Project infrastructure along I-10 would generally range between 0.3- and 0.7-mile away from viewers on I-10, with exception of a few segments; therefore, the relative size of the infrastructure in the landscape would minorly fluctuate (Figure 4.11-23 and Figure 4.11-28, Appendix 7) as travelers move along the highway.

Near the Colorado River, the I-10 route would diverge from I-10 to the south, placing the Project 0.5-mile to 1.5 miles south of the Interstate, further reducing the visibility and visual effects of the Project on I-10 travelers. With greater distance, the infrastructure would be better absorbed by the surrounding landscape and less noticeable. Intervening vegetation or other development may occasionally block or blend the Project views (Figure 4.11-24a and b, Appendix 7).

Along the I-10 linear KOP, scenic quality on Federal lands is mostly B with notable exceptions of the Big Horn Mountains Wilderness. The New Water Mountains, the Dome Rock Mountains, and in the general vicinity of the Colorado River Substation, which are A. Visual sensitivity along I-10 is almost evenly divided between moderate and high, with areas of high sensitivity being in the general vicinity of Quartzsite and west of Blythe in the vicinity of the Colorado River Substation. Impacts to viewers along I-10 are going to be minor in areas of lower scenic quality and sensitivity and moderate in areas of higher scenic quality and sensitivity. Additionally, there are larger areas of higher scenic quality south of I-10 than there are to the north, meaning that viewers along I-10 attracted to the distant scenic views to the south would be viewing these areas with the Project in the intervening landscape. In areas of moderate impact, the visibility of distant scenic quality A areas may further increase the adverse visual impact of the Project, notably Segment i-04.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Proposed Series Compensation Station
- Alternative Series Compensation Stations (2 possible site locations; ~75' feet apart)
- Johnson Canyon
- Route Segment Node
- Proposed Action*
- Alternative Route
- Route Segment including RMP Amendment
- Existing DPV1 Transmission Line*
- Existing WAPA 161kV Transmission Line
- BLM Long-term Visitor Area
- Peak
- BLM Utility Corridor
- BLM Field Office Boundary

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Indian Lands
- Military
- Private
- State
- USFWS

0 5.5 11 Miles

1:327,160 (At original document size of 11x17)

* = Existing DPV1 follows the Proposed Action. DPV1 and the Proposed Action are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure 4-1
Ten West Link
Segments that Would Include VRM Class Change RMP Amendment

Subalternatives

Subalternatives 1A, 1B and 1E would locate the project further away from I-10 viewers, thus reducing visual impacts in those areas, as compared to the Alternative 1 route. Subalternative 1C would move the transmission line to the north side of I-10 such that I-10 viewers in an area of high sensitivity would not be viewing the distant high-quality scenery with the Project in the immediate foreground, reducing visual impacts in a portion of the I-10 linear KOP. Additionally, this subalternative would move the Project out of a heavily recreated area where structure change would not be required. Subalternative 1D would blend with existing infrastructure, result in minor impacts, and includes a VRM Class change from III to IV.

4.11.8.3 Alternative 2: BLM Utility Corridor Route

Full Route Analysis Summary

The Alternative 2 route would impact the portion of the Project east of Quartzsite similar to Alternative 1, and the portion of the Project west of Quartzsite similar to the Proposed Action. An amendment to the Yuma RMP would be included for Segments p-09 through p-13 to ensure conformance. Unlike the Proposed Action and Alternative 1, views of recreationists in the LTVA and travelers on SR 95 would be impacted by the Project paralleling SR 95; whereas neither the Proposed Action nor Alternative 1 would affect this group of sensitive viewers. However, the portion of the route in this area would be within a BLM utility corridor but includes an amendment of the Yuma RMP for Segment x-07 to ensure conformance with VRM class objectives.

Linear KOPs

The I-10 linear KOP encompassing Segments i-01 through i-05 would be the same as described for Alternative 1.

Segment x-07 would impact the linear KOP along US 95 south of Quartzsite. The views of travelers on US 95 currently include the WAPA 161kV transmission line, including H-frame structures on the east side of the highway, and single-pole distribution lines on the west side of the highway. The Project would add lattice H-frame structures east of and parallel to the existing WAPA 161kV infrastructure within the BLM utility corridor, that would remain a relatively consistent distance from US 95 viewers traveling at highway speeds. The segment would connect to Segment p-09, convert to self-supporting lattice structures, and turn west to follow Copper Bottom Pass Road, crossing over US 95. The large lattice H-frame structures would be a major modification and would dominate the views for travelers on US 95, particularly in conjunction with the existing utility infrastructure.

Subalternatives

Subalternatives 2A and 2B would locate the project further away from I-10 viewers, thus reducing visual impacts in those areas, as compared to the Alternative 2 route. Subalternatives 2C and 2D would have no effect on visual resource impacts as viewed within the I-10 linear corridor. Additionally, this subalternative would move the Project out of a heavily recreated area where structure change would not be required. Subalternative 1E would have no discernable change in visual impacts, as compared to the Alternative 2 route.

4.11.8.4 Alternative 3: Avoidance Route

Full Route Analysis Summary

The Alternative 3 route would impact the portion of the Project east of Quartzsite similar to Alternative 1; except Segments p-02, p-03, p-04, and x-03 would route the Project away from private and state trust lands along I-10 and reduce the visual effects to travelers along that portion of I-10. The Project would avoid visual impacts to the Town of Quartzsite and minimize visual impacts to recreationists in the LTVA by routing the Project along Segment x-05. West of US 95, visual impacts would be similar to the Proposed Action, except the Project would be routed over Cunningham Peak, including an amendment of the Yuma RMP for Segments cb-01, cb-04, and cb-05 to ensure conformance with VRM class objectives. At the Colorado River, this route would follow Segment cb-10, shifting the visual impacts of river crossing north and separate from the existing DPV1 infrastructure. Segment cb-10 would connect with Segments x-11, ca-01, x-12, and ca-06; this portion of the route would not follow other existing transmission infrastructure and would visually impact a different set of local residents and road users. Segments ca-07 and 09 would be located on BLM-administered land, meeting the VRM class objectives within utility corridors, and would connect to the Colorado River Substation via Segment x-19.

Linear KOP

Under Alternative 3, the I-10 linear KOP in the eastern portion of the Project Area would be impacted as described under the Proposed Action. Segment x-03 would connect the Proposed Action Route from Segment p-04 up to the I-10 route at Segment i-03, continuing through Segment i-04, where impacts to the linear KOP would be as described under Alternative 2. Alternative 3 would diverge from the I-10 linear KOP at Segment x-05, which would also avoid any impacts to the US 95 linear KOP. The Alternative 3 route would not be visible from I-10 until Segments ca-06, ca-07, and ca-09, where the Project would be approximately 1.5 miles south of I-10 for approximately 8 miles before turning south along Segment x-19 to connect to the Colorado River Substation. Impacts to this portion of the I-10 linear KOP would be as described under Alternative 2.

Subalternatives

Subalternative 3A would further reduce impacts to visual resources, as compared to the Alternative 3 route. Subalternative 3B would have the same impact to the affected portion of the I-10 linear KOP as described for Alternative 1. Portions of Subalternative 3C would virtually eliminate visual impacts in some areas, while increasing visual impacts in others. Subalternative 3D would move the transmission line to the north side of I-10 such that I-10 viewers in an area of high sensitivity would not be viewing the distant high-quality scenery with the Project in the immediate foreground, reducing visual impacts in a portion of the I-10 linear KOP. Subalternative 3E would result in minor impacts to the views of I-10 travelers, while possibly resulting in moderate to major impacts to nearby residents. Subalternatives 3F, 3J, and 3L would have the same impacts as described under Alternative 1. Subalternative 3G would blend with existing infrastructure, result in minor impacts, and include a VRM class change from III to IV. Subalternative 3H would have impacts to visual resources of I-10 travelers similar to Alternative 3 and increase the visual impacts in other areas, as compared to Alternative 3. Subalternative 3K

and 3M would have no effect on visual resource impacts as viewed within the I-10 linear corridor.

4.11.8.5 Alternative 4: Public Lands Emphasis Route

Full Route Analysis Summary

Alternative 4 would be a combination of other full routes. The route would minimize visual impacts to travelers on I-10 by limiting the route to Segment in-01. However, the route would follow Segment x-06 along the boundary of the LTVA, impacting the views of recreationists in that area and include an amendment of the Yuma RMP to ensure conformance with VRM class objectives. West of US 95, visual impacts would be similar to the Proposed Action, except the Project would be routed through Johnson Canyon, along Segments cb-02, cb-04, and cb-05, impacting the visual resources of recreationists in that area. Following the Proposed Action route west of Johnson Canyon, this full route alternative would include amendment of the Yuma RMP for Segment p-13 to ensure conformance with VRM class objectives. In California, the visual impacts would be the same as the Proposed Action, until the Alternative 4 route turns north on Segments x-12 and 13, connecting to Segment ca-06. This portion of the route would not follow other existing transmission infrastructure and would visually impact a different set of local residents and road users. Impacts from Segments ca-07, ca-09, and x-19 would be the same as described for Alternative 3.

Linear KOP

The Alternative 4 route would remain south and not impact the visual resources along the I-10 linear KOP until Segment i-04. Under Alternative 4, the Alternative SCS location would be used, connected by Segments x-04 and i-04; however, the Alternative SCS would meet VRM Class III objectives as viewed by travelers along I-10. Other impacts were previously described as follows:

- Segment in-01 – Subalternative 1C
- Segments ca-06, ca-07, ca-09, x-19 – Alternative 3

All other segments would not impact views along the I-10 linear KOP.

Subalternatives 4A, 4E, 4F, 4G, 4K, 4L, 4M, 4N, and 4P would have no effect on visual resource impacts as viewed within the I-10 linear corridor. Subalternative 4B would have the same impacts as described for Alternative 2. Subalternative 4C would virtually eliminate visual impacts in some areas, while increasing visual impacts in others. Subalternatives 4D and 4I would have the same impacts as described under Alternative 1. Subalternative 4H would impact visual resources similar to impacts in the eastern portion of the Project Area on Reclamation-managed public lands.

4.11.8.6 Agency Preferred Alternative

Full Route Analysis Summary

East of Quartzsite, the Preferred Alternative would have the same impacts as Alternative 1. By following Segment x-05, the Preferred Alternative would avoid visual impacts to the Town of

Quartzsite, the LTVA, and travelers along US 95. West of the intersection of Segment x-05 with Segment p-07, the route would follow the Proposed Action route through the Copper Bottom Pass area. Impacts for the remainder of the route would be the same as those described for Alternative 2. This alternative does not include any RMP amendments for VRM Class. Instead, for management consistency the corridor would remain VRM Class III and impacts to visual resources would be addressed through application of APMs, BMPs, and MMs. These measures would serve to reduce impacts to visual resources to the extent practical. However, in some areas the VRM class may not be met, especially for sensitive viewers.

Linear KOP

Impacts to the I-10 linear KOP for Segments i-01 through i-04 would be the same as described for Alternative 1. The Preferred Alternative would cross and not follow US 95, and therefore there would be no impacts to that linear KOP.

Subalternatives

The portion of the Preferred Alternative containing Subalternative 4D would have the same impacts as described under Alternative 1.

4.11.8.7 Mitigation Summary

Table 4-9 summarizes the mitigation required for the Proposed Action and the full route Action Alternatives. Additional detail by KOP is provided in Appendix 4, Tables 4.11-1 through 4.11-4.

Table 4-9 Mitigation Summary for Full Route Alternatives

ALTERNATIVE	VIS-01	VIS -02	VIS-03	VIS -04	VIS-05	VIS-06
Proposed Action	X	X	X	X		X
Alternative 1	X		X			X
Alternative 2	X		X	X		X
Alternative 3	X	X	X	X		X[1]
Alternative 4	X	X	X	X	X	X[1]
Preferred Alternative	X	X	X	X	X	X[1]

[1]Any structure changes on non-BLM lands would be negotiated between the DCRT and landowner.

4.11.9 Residual Impacts

After the application of mitigation, non-conforming segments would continue to not conform to established VRM class objectives. Even where structure changes are required to address potential recreation hazards from guy wires, and where structures are changed to match any existing structures, segments would continue to be a major modification on the landscape and dominate views. However, implementation of mitigation would reduce the contrasts and overall impacts, even if the VRM class objectives could not be met.

4.11.10 CDCA Plan Compliance

CMAs LUPA-VRM-1, LUPA-VRM-2, DFA-VRM-1, and DFA-VPL-VRM-1 would apply to the Project (Appendix 2C) and would be satisfied by information provided in Appendix 4, Section 4.11. DFA-VPL-VRM-3, LUPA-TRANS-BIO-1, LUPA TRANS-BIO-3, LUPA TRANS-BIO-4 would also apply to the Project (Appendix 2C). The Project would comply with these CMAs through APM-AES-04 through APM-AES-06, and BMP-AES-04 and BMP-AES-06 through BMP-AES-08 (Appendix 2A, Section 2A.12).

4.11.11 Unavoidable Adverse Effects

The Project would be visible in the landscape within approximately 3 miles of viewers; and noticeable between 1 and 2 miles away, particularly where there is no existing development. Where the Project would follow the existing DPV1 transmission line, the Project, in combination with the existing infrastructure would result in increased visual clutter and would result in contrast in structure form when guyed V structures would be used adjacent to the existing self-supporting lattice structures of the DPV1 transmission line. Where visible, ground disturbance would be obvious and noticeable for many years, if not permanently because of the desert environment and difficulty with revegetation and reclamation.

4.11.12 Cumulative Effects

The Project in conjunction with past, present, and reasonably foreseeable future projects would incrementally contribute to changes in the visual character and the scenic quality of the natural landscapes in the CEA.

To the extent that construction of the Project would be visible within the same field of view as one or more of the existing projects, those under construction, or reasonably foreseeable future projects, adverse cumulative visual impacts could result. The Project and the past, present, and reasonably foreseeable future projects combined would result in a perceived increase in industrialization of the landscape, diminution of visual quality, and increase in visual contrast. Also, in the cases where there appear to be multiple corridors due to greater separation between facilities, the projects would contribute to a sense of proliferation of energy infrastructure within the I-10 corridor.

The Project, in combination with the existing infrastructure of the DPV1 transmission line would result in increased visual clutter, and contrast in structure form when guyed V structures would be used adjacent to the existing self-supporting lattice structures of the DPV1 transmission line. Within the BLM utility corridor along I-10, the combination of the highway and transmission infrastructure would increase the sense of development within the corridor as viewed by travelers along I-10. Appendix 3, Tables 3.12-1 and 3.12-2 list past, present, and foreseeable projects within the CEA. Of the 12 reasonably foreseeable future projects noted, 6 are utility scale renewable energy projects totaling 27,714 acres which would substantially increase developed human use of land.

Two large-scale solar facilities are planned in the easternmost portion of the CEA, the Harquahala Solar Project in Maricopa County and the La Paz County land conveyance for solar development in La Paz County, both would be south of I-10. The Harquahala Solar Project

would be in an area currently under agricultural use, while the La Paz County land conveyance would be in an undeveloped desert area. However, both facilities could not be viewed simultaneously in conjunction with the Project. For travelers along I-10, these future facilities, in conjunction with the Project and the existing Harquahala Power Plant, would change the character of the landscape from either undeveloped or rural to heavy energy infrastructure.

South of Quartzsite along Segments qs-02 and x-07, the combination of the Project with the existing transmission infrastructure would intensify the visual sense of energy infrastructure, and increase the level of visual clutter, similar to the DPV1 transmission line. However, southwest of Quartzsite, the transmission line would be viewed in context of development along the edge of Quartzsite, which would help the addition of the Project to blend and be less noticeable.

Similar to the Quartzsite area, the Project in conjunction with the existing DPV1 infrastructure in the Copper Bottom Pass area, would intensify the visual sense of energy infrastructure and increase the level of visual clutter. Along I-10, the combination of the highway and transmission infrastructure would increase the sense of development within the corridor as viewed by travelers along I-10. If visible from I-10, the reasonably foreseeable West Port Gold Project would increase the industrial character as well.

The majority of future development would occur in California, in the vicinity of the Colorado River Substation. The addition of four solar projects and associated gen-tie lines, and the Blythe Energy Power Plant/Sonoran Energy Project in conjunction with the Project and existing energy infrastructure, would change the character of the landscape in that area; but in the context of heavy energy infrastructure, the Project would blend and not be individually noticeable.

4.11.13 Irreversible and Irretrievable Commitment of Resources

The main irreversible or irretrievable commitment of resources with regard to visual resources would be the effects of ground disturbance. Because of the desert environment, reclamation and revegetation to achieve a visually naturalized state is extremely difficult, if not impossible. While structures, foundations, and conductors can all be physically removed at the end of the life of the Project, disturbance from cleared bases and access routes may never fully visually recover.

4.11.14 Relationship of Short-term Uses and Long-term Productivity

Short-term impacts on viewsheds in the Project Area would be tied to temporary visual intrusions from construction activities and structures. The visual intrusion of the transmission line and landscape contrast created by the Project infrastructure would remain for the operational life of the Project. Ground disturbance may remain visible and indefinitely impact the viewshed to varying degrees.

Chapter 5 Consultation, Coordination, and Preparation

CHAPTER 5 CONSULTATION, COORDINATION, PREPARATION

5.1 INTRODUCTION

CEQ regulations implementing NEPA require that Federal agencies provide meaningful opportunities for the public and stakeholders to provide input and identify their concerns with regard to the EIS process. Federal laws, such as the ESA, the CWA, and the NHPA, mandate public involvement and consultation with agencies and/or Federally recognized tribal governments. This chapter provides an overview of consultation and coordination efforts undertaken by the BLM throughout the entire process of developing this EIS.

5.2 INTERRELATIONSHIPS BETWEEN AGENCIES (OTHER FEDERAL, TRIBES, STATE, LOCAL)

Agencies, tribes, and organizations that have jurisdiction and/or specific interest in the Project were contacted at the beginning of scoping, during the resource inventories, and prior to the publication of this EIS to inform them of the Project, verify the status and availability of existing environmental data, request data and comments, and solicit their input regarding the Project. Additional contact was made to clarify or update information provided by the agencies and organizations.

5.2.1 Cooperating Agency Coordination

The entities who formally agreed to participate as Cooperating Agencies for this EIS are listed in Table 5-1.

Table 5-1 Cooperating Agencies

FEDERAL	ARIZONA	CALIFORNIA
EPA	AGFD	CPUC
DOD YPG	ASLD	
USFWS	MAG	
WAPA	La Paz County	
Reclamation	Town of Quartzsite	
USACE		

5.3 CONSULTATION WITH INDIAN TRIBES

5.3.1 Applicable Laws, Regulations, Policies, and Plans

The United States has a unique legal relationship with Federally recognized Indian tribes established through and confirmed by the Constitution of the United States, treaties, statutes, executive orders, and judicial decisions. In accordance with that relationship, the BLM engages in regular and meaningful consultation and collaboration with Federally recognized tribes in the development of policy and land-use decisions that have tribal implications. The numerous laws,

regulations, and policies pertaining to cultural resources are listed in Tables 1.7-1 and 1.7-2 in Appendix 1.

5.3.2 Federal Consultation Process

As lead Federal agency, the BLM consults with Federally recognized Indian tribes and California Native American tribes under Section 106 of the NHPA as part of the process to identify historic properties, including properties to which consulting Indian tribes ascribe traditional religious and cultural significance, also referred to as Traditional Cultural Properties (TCP). In addition, the CPUC must consider whether the Project would impact Traditional Cultural Resources eligible for listing in the California Register of Historical Resources (CRHR) as historical resources, as required by CEQA and its 2014 amendment known as AB 52. The BLM invited 23 Federally recognized tribes and California Native American tribes to participate in the Section 106 review of the Project based on information provided by the Yuma, Lake Havasu, Hassayampa, and Lower Sonoran field offices in Arizona and the Palm Springs–South Coast field office in California. The BLM in Arizona also reviewed the consultation maps maintained by the Arizona SHPO in its government-to-government consultation toolkit (https://sites.google.com/view/az-consultation-toolkit/consultation-map), on which tribes have self-identified their areas of interest for agency consultation. The CPUC contacted the Native American Heritage Commission in California and initiated consultation with California Native American tribes identified in that file search, pursuant to AB 52.

The BLM's tribal relations policy consists of notification through letters and outreach, coordination through email, telephone, and conference calls, and formal government-to-government consultation between agency officials and tribal leaders in face-to-face meetings and field trips to project areas. In addition, the BLM requested tribal input throughout the NEPA process (scoping and DEIS review), as well as during the socioeconomic workshop.

BLM consulted with the following 23 Indian tribes with jurisdiction or interest in the Project:

Agua Caliente Band of Cahuilla Indians
Ak-Chin Indian Community
Augustine Band of Cahuilla Indians
Cabazon Band of Mission Indians
Chemehuevi Tribe
Cocopah Indian Tribe
Colorado River Indian Tribes
Fort McDowell Yavapai Nation
Fort Mojave Tribe
Gila River Indian Community
Hopi Tribe
Moapa Band of Paiute Indians
Morongo Band of Mission Indians
Fort Yuma Quechan Tribe
Salt River Pima-Maricopa Indian Community
San Manuel Band of Mission Indians
Soboba Band of Luiseno Indians
Tohono O'odham Nation
Torres Martinez Desert Cahuilla Indians
Twenty-Nine Palms Band of Mission Indians
Yavapai-Apache Nation
Yavapai-Prescott Indian Tribe
Pueblo of Zuni

Efforts to initiate government-to-government consultation with these tribes have been undertaken and are ongoing. The tribal responses to the request for government-to-government consultation are in the Project record and available upon request. Appendix 5, Table 5.3-1 summarizes the consultation to date.

5.4 PUBLIC PARTICIPATION SUMMARY

To collect agency and public input for the Project environmental review, the BLM administered a public notice and participation program. The intent of scoping and public outreach is to provide information about the Project to stakeholders and the public, and solicit information from public agencies, governmental representatives, tribal representatives, and the public to aid the environmental review.

5.4.1 Scoping Process

The NOI to Prepare an EIS was published in the *Federal Register*, Volume 81, No. 56, Page 15556 on March 23, 2016. The publication of the NOI initiated the 45-day formal scoping period from March 23 through May 9, 2016.

A BLM Arizona State Office website for the Project was launched concurrently with publication of the NOI (https://www.blm.gov/site-page/programs-planning-and-nepa-project-arizona-10-west-link). The BLM's ePlanning website for the Project is located at https://go.usa.gov/xU6Be.

Legal notices and/or advertisements informing the public about scoping for the Project were published in the appropriate newspapers in Arizona and California (Appendix 5, Table 5.4-1).

The BLM mailed scoping letters describing the project proposal and proposed Federal actions, and public involvement opportunities. The mailing list of potentially interested parties was compiled from several sources, including mailing lists from prior projects located in the Project area; local field office mailing lists; DCRT outreach mailing lists and landowner mailing addresses along the proposed route based on tax assessor records; the CPUC consultation list; and local special interest groups. The mailing list also includes additional parties who might be interested in the Project such as adjacent landowners or land managers. In addition to the invitation letter, the BLM emailed notifications of both the agency-only scoping meeting and the public scoping meetings to interested parties who provided email addresses.

Three public scoping meetings were held in Tonopah, Arizona; Quartzsite, Arizona; and Blythe, California from April 12-14, 2016, to introduce the proposed Project and solicit feedback and comments. Representatives from the BLM, the proponent (DCRT), and their contractors were present at each meeting to discuss the project and answer questions. A total of 49 individuals attended the meetings and 44 comment letters were submitted.

Tables of agencies and organizations consulted are presented in Appendix 5 Table 5.4-2 through Table 5.4-6.

5.4.2 Additional Public Participation Opportunities

5.4.2.1 Agency Scoping Meeting

An agency-only scoping meeting was held on April 12, 2016, at the BLM National Training Center in Phoenix, Arizona, to solicit comments from tribal, Federal, state, and local agencies with jurisdiction or interest in the Project. Twenty-five tribal and agency representatives attended, including representatives from the Colorado River Indian Tribes, Fort Yuma Quechan Tribe, Gila River Indian Community , USFWS, U.S. Department of Energy/Western Area Power Administration, U.S. House of Representatives, ASLD, AGFD, Arizona State Parks, CPUC, CDFW, and Maricopa County (BLM 2016b).

5.4.2.2 Economic Strategies Workshop

An Economic Strategies Workshop was held on June 14, 2016, in Quartzsite, Arizona. The purpose of the workshop was to identify potential social and economic challenges posed by the Project and potential opportunities that might enhance or expand the social and economic goals of area communities. The workshop provided an opportunity for local and regional businesses, tribes, governments, individuals, and community organizations to identify, clarify, and discuss economic and social effects that could result from the Project. Forty people from 22 organizations attended the workshop.

5.4.2.3 Public Notification of DEIS Availability

BLM sent notification of availability of the DEIS to the project mailing list, publicized availability of the DEIS via news releases, and published a NOA in the *Federal Register*, 83 FR 44625, on August 31, 2018. Three public meetings were held in Phoenix, Arizona, Quartzsite, Arizona, and Blythe, California between October 9 - 11, 2018, to discuss the proposed Project and solicit feedback and comments on the DEIS. The DEIS was available online at https://go.usa.gov/xU6Be for a 90-day public comment period. Hardcopies were available for review at associated BLM offices and at other select locations such as libraries (Appendix 5, Table 5.4-7). The formal comment period ended November 29, 2018. A total of 50 comment letters and emails were received from the public. Comments and responses are provided in Appendix 8 of this FEIS.

5.5 CONSULTATION PROCESS FOR ESA SECTION 7 AND NHPA SECTION 106

5.5.1 ESA Section 7 Compliance

Pursuant to Section 7(c)(1) of the ESA the BLM prepared a draft BA based on the Agency Preferred Alternative and provided it to the USFWS and cooperating agencies for a courtesy review in February 2019. The draft BA was updated based on agency comments and coordination from February to March 2019. The final BA was submitted to the USFWS in June 2019.

Portions of the Project in California that are not within the Colorado River corridor are subject to a 2017 Programmatic Biological Opinion (BO) completed in conjunction with adoption of the DRECP. Future projects in conformance with all applicable CMAs addressed in the DRECP are covered for activities pertaining to the Mojave desert tortoise and its critical habitat. Incidental take would be requested, as appropriate, using the 2017 Programmatic BO Activity Request Form and covered under the 2017 CDCA Programmatic BO for Mojave Desert Tortoise. However, species occurring within the Colorado River corridor were not included within the DRECP consultation, and potential effects to listed species within the river corridor and in Arizona were not included in past consultations.

5.5.2 NHPA Section 106 Compliance

Section 106 of the NHPA and its implementing regulations found at 36 CFR 800.14 provide Federal agencies with the authority to negotiate PAs to govern the implementation of their Section 106 responsibilities. A draft PA establishing the APE for Section 106 review and outlining the methods of identification, evaluation, and treatment of historic properties has been prepared for the Project. Both the Arizona and California State Historic Preservation Offices (SHPOs) participated in drafting the PA.

Federal agencies must demonstrate compliance with the NHPA (54 U.S.C. 300101). Section 106 of the NHPA requires a Federal agency with jurisdiction over a project to evaluate the effect of the proposed project on properties included on, or eligible for, the NRHP. SHPOs and Tribal Historic Preservation Officers (THPOs), as well as cultural resources departments and tribal cultural specialists, play important roles in the review of impacts on historic properties (places included in or eligible for inclusion in the NRHP) under Section 106 of the NHPA and its implementing regulations at 36 CFR § 800. Federal agencies must also provide the ACHP an opportunity to comment on the effects of the proposed project on historic properties. The BLM notified the ACHP on February 15, 2017 that the Project was likely to have an adverse effect and invited them to participate in consultations. ACHP declined in a letter dated March 9, 2017. The BLM requested that the ACHP participate as a party to the PA on January 11, 2018; and the ACHP accepted on January 25, 2018.

A draft PA establishing the APE for Section 106 review and outlining the methods of identification, evaluation, and treatment of historic properties has been prepared for the Project. Any adverse effects that the Project or alternatives may have on historic properties would be resolved through compliance with the terms of a PA under Section 106 of the NHPA (54 U.S.C. § 306108). The PA covers a considerable amount of policies, procedures, and timeframes, and serves as a legally binding document for the Project.

As defined in 36 CFR § 800.6, there are three tiers of participation in a PA document: Signatories, Invited Signatories, and Concurring Parties; all have varying levels of responsibility. The tribes, agencies, governmental bodies, etc. who are Participants in the Ten West Link Draft PA are on file in the Project record. A smaller subset of the Participants came together as the Writing Group for the PA.

In their role as Lead Agency responsible for Project cultural resources compliance, the BLM developed the draft PA with assistance from agency and tribal stakeholders through a series of writing group meetings. The draft PA developed through the writing group was distributed for review and comment to all consulting parties prior to inclusion in the DEIS.

The draft PA was included for public comment in the DEIS as Appendix 2D. Based upon the comments received during the DEIS comment review period and further discussion among the consulting parties, revisions have been made to the PA. A revised draft PA is included as an appendix in this FEIS.

Implementation of the Project also would require local and state agencies in California to demonstrate compliance with CEQA (Appendix 1C), for which specific guidance regarding cultural resources is presented in the CEQA Guidelines. In Arizona, local and state agencies must comply with the Arizona antiquities laws. The list of consulting parties under Section 106 are on file in the Project record.

5.6 LIST OF PREPARERS

Preparers and contributors involved in the EIS and other aspects of the Project included staff from BLM, the CPUC, Dudek (CPUC's consultant), Stantec (BLM's NEPA consultant), Galileo Project, LLC (BLM's administrative/project management consultant), and HDR Inc. (DCRT's environmental consultant). The actual personnel who contributed to the preparation, and how they contributed, are provided in Appendix 5, Table 5.6-1 through Table 5.6-4.

Bureau of Land Management
Bureau of Reclamation
Department of Defense
Environmental Protection Agency
United States Fish and Wildlife Service
United States Army Corps of Engineers
Western Area Power Administration
Arizona Game and Fish Department
Arizona State Land Department
California Public Utilities Commission
La Paz County (Arizona)
Maricopa Association of Governments
Town of Quartzsite (Arizona)

Appendix 1 Tabular Data Associated With Chapter 1

List of Tables

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Table 1.5-1 Tribal and Federal Permits/Authorizations Required or Potentially Required

AGENCY	JURISDICTION AND/OR AUTHORIZING LAW	AUTHORIZATION/PERMIT
Colorado River Indian Tribes/Bureau of Indian Affairs (BIA)	Tribal lands	Land Occupational Use Conditional use permits for construction access, laydown areas, and predevelopment activities ROW Easement (BIA) THPO consultation under NHPA Section 106 Signatory to NHPA programmatic agreement
BLM	FLPMA – ROW grants on land administered by BLM	POD ROW Grant RMP Amendments
	(Lead Agency) NEPA	Prepare EIS, RMP Amendments, ROD
	NHPA (54 United States Code [U.S.C.] 300101), Section 106 review (54 U.S.C. 306108); EO 11593, EO 13007, EO 13084, EO 13175	Compliance with Section 106. Obtain concurrence from the State Historic Preservation Offices (SHPOs).
	Endangered Species Act	Consult and obtain an Incidental Take Permit from USFWS of any potential take of threatened or endangered species that could occur, and obtain concurrence for any decisions that listed species would not be adversely affected.
Reclamation	43 CFR Part 429 – land use authorization	Land use authorization (SF-299)
U.S. DOD – Army	U.S. Army Military Facilities	Aerial ROW Grant on YPG
USFWS	National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd[d]; 50 CFR Part 29, Subpart B)	Finding of Appropriateness (Appendix 1A) Certificate of Environmental Compatibility for the Kofa NWR ROW Grant
	ESA Section 7 Consultation, Biological Assessment	Consultation for Section 7 of the ESA Biological Opinion/Incidental Take Permit
USACE	Clean Water Act (CWA), Section 404/Rivers and Harbors Appropriation Act, Section 10 – Construction or operation of facilities that may result in any discharge into U.S. navigable waters	Section 404 Permit Preconstruction Notification for Nationwide Permit (NWP) Section 10 Permit – Power transmission line crossing of navigable waters (Colorado River)

AGENCY	JURISDICTION AND/OR AUTHORIZING LAW	AUTHORIZATION/PERMIT
FAA	Safe, Efficient Use and Preservation of the Navigable Airspace, 14 CFR Part 77	Determination of No Hazard based on an application Notice of Proposed Construction or Alteration
FCC	Licenses/permits related to FCC frequencies and paths	Telecommunication Permit (as required)
FERC	Ratemaking for transmission facilities	Federal Power Act, Section 219, authorization for transmission rate incentives Federal Power Act, Section 205, acceptance of transmission revenue requirement and tariff FERC Stats. and Regs Order No. 679, pricing reform for interstate transmission
WAPA	Title III, Section 301 of the American Recovery and Reinvestment Act of 2009 (Public Law 111-5) (“Western Area Power Administration Borrowing Authority)	Provide funding for the purpose of constructing, financing, facilitating, planning, operating, maintaining, or studying construction of new or upgraded electric power transmission lines and related facilities.

Table 1.5-2 State and Local Government and Other Entity Permits Required or Potentially Required

AGENCY	JURISDICTION AND/OR AUTHORIZING LAW	AUTHORIZATION/PERMIT
ACC	ARS Title 40, Chapter 2, Article 6.2 (§§ 40-360 to 40-360.13), ACC Rules of Practice and Procedure Revised Statutes related to transmission, substation, and generation projects	CEC needed for transmission lines greater than two poles and greater than 115kV, or power generation facilities 100MW or larger
	ARS Title 40, Chapter 2, Article 4 (§§ 40-281 to 40-287), ACC Rules of Practice and Procedure Revised Statutes related to certificates for public service corporations	CPCN should the power of eminent domain be necessary
Arizona Department of Transportation	Arizona streets and highways: ARS § 28-7053, Arizona Administrative Code (AAC) R17-3-501 to 509	Utility Crossing Permit Permit for Use of Highway ROW (US 95 and I-10) Oversize/Overweight Class C Permit Encroachment permit Rules and permits for outdoor advertising
Arizona Department of Agriculture	Native Plant Law (ARS §§ 3-901 to 916)	Notice of Intent to Remove or Destroy Protected Native Plants
Arizona SHPO	ARS §§ 41-861 to 864 (applies to any archaeological and paleontological work)	Compliance with State Historic Preservation Act (SHPA) and Compliance with Section 106 of the NHPA
Arizona State Museum	ARS § 41-865	Permit to Disturb Human Remains or Funerary Objects
ASLD	ARS § 37-461	ROW/Right-of-Entry Permit required for survey and construction of transmission line within ROWs on state trust land
ADEQ	ARS § 49-0255; AAC Title 18, Chapter 11	Arizona Pollutant Discharge Elimination System (APDES) Stormwater Permit for construction and operation activities affecting 1 acre or more
	CWA (33 CFR Parts 320, 322, 323, 325)	State Water Quality Certification (Section 401) for construction across water resources (state review required for all Federal Section 404 permits)
	AAC Title 18, Chapter 2, Article 6	Dust Control Plan (for La Paz County)
	AAC Title 18, Chapter 14, Articles 102 and 103	Aquifer Protection Permit
	AAC Title 18, Chapter 8	Hazardous Waste Generator Registration Air Quality Permit for Harquahala Mountain Engine/Generator (if greater than 325 horsepower) – prior to engine installation
	AAC Title 18, Chapter 2, Article 3	Class I Air Permit

AGENCY	JURISDICTION AND/OR AUTHORIZING LAW	AUTHORIZATION/PERMIT
Maricopa County	County roads and highways, flood control/ drainage channels	Road/Highway Encroachment/Crossing Permit Flood Control/Drainage Channel Encroachment/Crossing Permit Floodplain Use Permit Oversize Permit Stationary Dust-Generating Source Class I Air Permit
La Paz County	County roads and highways, flood control/ drainage channels	Overhead Utility Road Crossing Flood Control/Drainage Channel Encroachment/Crossing Permit
Harquahala Irrigation District	District irrigation/drainage channels	Encroachment/Crossing Permit
Maricopa County Air Quality Department	Maricopa County	Earthmoving Permit
SCE	SCE tariff	Interconnection Approval, Colorado River Substation Approval for crossing(s) of SCE facilities
APS	APS wire interconnection process	Interconnection Approval, Delaney Substation
CAISO	Purpose and need for new transmission, substation, and generation projects	Selection of the Project Sponsor - DCRT
California State Lands Commission	Division 6 of the California Public Resources Code – Construction of a transmission line on state lands	ROW Easement Public Trust Land Use Lease (if applicable) Right-of-Entry
CDFW	California Fish and Game Commission (CFGC) Code Section 1600 et seq. – Alteration of any streambed, drainage, or lake	1601/1603 Permit, Lake or Streambed Alteration
	California Endangered Species Act – Take of state-listed threatened or endangered species	Consultation for take avoidance Incidental take permit (as required); no incidental take permit available for Fully Protected Species (FPS)
	CFG Code Sections 3511, 4700, 5050, and 5515	Consultation for take avoidance
	CFG Code Section 3503 – Migratory Bird Protection	Consultation
	Native Plant Protection Act – Taking of endangered native plants	Consultation Take permit

AGENCY	JURISDICTION AND/OR AUTHORIZING LAW	AUTHORIZATION/PERMIT
	Natural Community Conservation Planning Program – Impacts to areas identified for conservation of natural communities and ecosystems	Consultation
California Department of Transportation (Caltrans), District 8	California Vehicle Code Section 35780 California streets and highways Code 660-711.21 CCR 1411.1–1411.6	Oversize/overweight loads Permit Road/Highway Encroachment/Crossing Permit (SR-78; as required)
California Department of Water Resources	Water crossings	Encroachment/Crossing Permit (as required)
California Department of Toxic Substations Control	Hazardous Waste Control Act of 1972	EPA Hazardous Waste Generator ID
CPUC	California Public Utilities Code	CPCN
	CEQA	Issuance of a CPCN requires the CPUC to conduct an environmental review pursuant to CEQA.
California SHPO	Section 106 of the NHPA Review – Impacts to historic properties, including those eligible for or listed on the National Register of Historic Places	Section 106 consultation, Cultural Resource Management Plan
California Air Resources Board (CARB)	Statewide	Portable Engine Registration for Specified Non-Mobile Portable Engines
Riverside County	Riverside County Code of Ordinances, Section 12.08.020 and 10.08.010 County roads and highways flood control/drainage channels	Road/Highway Encroachment/Crossing Permit Transportation Permit (for oversize and overweight vehicles) Flood Control/Drainage Channel Encroachment/Crossing Permit

AGENCY	JURISDICTION AND/OR AUTHORIZING LAW	AUTHORIZATION/PERMIT
Colorado River Regional Water Quality Control Board (RWQCB), Region 7	CWA, Section 401 – Impacts to surface water quality from construction activities	401 Certification/Storm Water Construction General Permit 99-08-DWD
	CWA, Section 402 – Construction-related discharges to waters of the state, including construction projects that disturb more than 1 acre	Notice of Intent – California General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities National Pollutant Discharge and Elimination System (NPDES) Permit
	Porter-Cologne Act – Construction-related discharge to waters of the state	Waste Discharge Requirements
Metropolitan Water District of Southern California	Activities on land holdings, owned or leased	Easements
Mojave Desert Air Quality Management District	Eastern Riverside County Rule 403.2	Authority to Construct (ATC) permit and/or Permit to Operate (PTO) portable engines greater than 50 horsepower not registered under the CARB Portable Engine Registration Program (prior to installation of engine) Fugitive Dust Control Plan
Palo Verde Irrigation District	District irrigation/drainage channels	Encroachment/Crossing Permit
Kinder Morgan	Activities in area of pipeline	Pipeline Encroachment/Crossing Permit
El Paso Natural Gas	Activities in area of pipeline	Pipeline Encroachment/Crossing Permit
Southern California Gas	Activities in area of pipeline	Pipeline Encroachment/Crossing Permit
AT&SF Railroad	Activities in area of railroad	Encroachment/Crossing Permit
Central Arizona Water Conservation District	Activities in area of Central Arizona Project (CAP) canal and associated infrastructure	Crossing permit
Western Electricity Coordinating Council	Electrical interconnection coordination	Comprehensive Progress Report Prepare a system impact study and provide a path rating

Table 1.7-1 Federal Laws and Statutes with which the Proposed Action and Action Alternative Segments Must Conform

LAW OR STATUTE	REFERENCE
American Indian Religious Freedom Act of 1978	Public Law [PL] 95-341; 42 U.S.C. § 1996
Antiquities Act of 1906	16 U.S.C. 431 *et seq*.
Archaeological and Historic Data Preservation Act of 1974	PL 86-253, as amended by PL 93291; 16 U.S.C. § 469
Archeological Resources Protection Act, of 1979, as amended	16 U.S.C. 470aa *et seq*.
Bald and Golden Eagle Protection Act of 1940	16 U.S.C. §§ 668–668d, 54 Stat. 250, as amended; and PL 95-616 (92 Stat. 3114)
Clean Air Act (CAA) of 1990	PL 92-574; 42 U.S.C. 7401 *et seq*.
CWA	33 U.S.C. 1251 *et seq*.
Colorado River Basin Salinity Control Act of 1974	PL 93-320
Department of Transportation Act of 1966	PL 95-341; 42 U.S.C. § 1996
ESA of 1973	PL 85-624; 16 U.S.C. §§ 661, 664, 1008
Energy Policy Act of 2005	PL 109-59
Farmland Protection Policy Act	PL 97-98 and 7 CFR § 658
FLPMA of 1976	PL 94-579; 43 U.S.C. § 1701 *et seq*.
Federal Noxious Weed Act of 1974 as amended by the Food, Agriculture, Conservation, and Trade Act of 1990	U.S.C. 2801 *et seq*.
Federal Plant Pest Act	7 U.S.C. 150aa *et seq*.
Historic Sites Act of 1935	PL 292-74; 16 U.S.C. §§ 461–467
Land and Water Conservation Fund Act of 1965	PL 88-578
Migratory Bird Treaty Act of 1918	16 U.S.C. §§ 703–712, as amended
NEPA of 1969, as amended	PL 91-190, as amended by PL 94-52, PL 94-83, and PL 97-258; 42 U.S.C. § 4321
NHPA of 1966, as amended	PL 89-665; 54 U.S.C. 300101 et seq
Native American Graves Protection and Repatriation Act of 1990, as amended	25 U.S.C. 3001-30013 *et seq*.
Noise Control Act of 1972, as amended	42 U.S.C. 4901 *et seq*.
Noxious Weed Control and Eradication Act	PL 108-412
Nuisance Prevention and Control Act of 1990 as amended	16 U.S.C. 4701 et. seq.
Occupational Safety and Health Act	29 U.S.C. 651 *et seq*. (1970)

LAW OR STATUTE	REFERENCE
Paleontological Resources Preservation Act (PRPA) 2009	Public Law 111-11, 16 U.S.C. 470aaa
Pollution Prevention Act of 1990	42 U.S.C. 13101 *et seq*.
Religious Freedom Restoration Act of 1993	PL 103-141
Safe Drinking Water Act of 1974	42 U.S.C. s/s 300f *et seq*.
Safe, Accountable, Flexible, Efficient Transportation Equity Act	PL 109-59

Table 1.7-2 Executive Orders with which the Proposed Action and Action Alternative Segments Must Conform

EXECUTIVE ORDER	REFERENCE
Actions to Expedite Energy-related Projects	EO 13212
Consultation and Coordination with Indian Tribal Governments	EO 13084 EO 13175
Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects	EO 13807
Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	EO 12898
Federal Compliance with Pollution Control Standards	EO 12088
Flood Hazard Evaluation Guidelines	EO 11296
Floodplain Management	EO 11988
Indian Sacred Sites	EO 13007
Intergovernmental Review of Federal Programs	EO 13272
Invasive Species	EO 13112
Preserve America	EO 13287
Protection and Enhancement of Environmental Quality	EO 11514
Protection and Enhancement of the Cultural Environment	EO 11593
Protection of Wetlands	EO 11990
Responsibilities of Federal Agencies to Protect Migratory Birds	EO 13186
Use of Off-Road Vehicles on the Public Lands	EO 11644

Table 1.7-3 Federal Regulations and Guidance with which the Proposed Action and Action Alternative Segments Must Conform

REGULATIONS AND GUIDANCE	REFERENCE
Federal Resource Management Planning	43 CFR Part 1600, Subpart 1610
BLM Land Use Planning Handbook	H-1601-1
BLM Land Use Permits and Leases	43 CFR 2920
BLM NEPA Handbook	H-1790-1
BLM Handbook - Improving and Sustaining BLM-Tribal Relations	H-1780-1
DOI Implementing NEPA Regulations	43 CFR Part 46
BLM Rights-of-Way Regulations	43 CFR 2800
CEQ General Regulations Implementing NEPA	40 CFR §§ 1500–1508
Floodplain Management	43 CFR § 6030
Prime and Unique Farmlands	7 CFR § 658
Responsibilities, and the ESA (June 5, 1997)	Secretarial Order 3206
Section 404 of the CWA and Its Implementing Regulations	33 CFR §§ 320–331 and 40 CFR § 230

Table 1.9-1 Issues Identified During Public and Agency Scoping

COMPONENT OR RESOURCE	ISSUE
Proposed Action	Would the Project result in new disturbance with associated resource impacts?
	Would the Project be compatible with the missions or needs of other jurisdictions?
Alternatives	Do the Action Alternatives reduce or avoid impacts, such as avoiding the need for a Section 404 permit, and impacts to the Kofa NWR, the YPG, Johnson Canyon, and state trust lands?
	Would the Action Alternatives take advantage of identified utility corridors?
Monitoring and Mitigation	Have or will appropriate and resource-specific monitoring programs and mitigation been developed in conjunction with the Project?
Air Quality and Greenhouse Gases	Would construction and operation of the Project result in generation of emissions and cause a change in ambient air conditions?
	Would the Project impact, or be impacted by, climate change, including GHG emissions?

COMPONENT OR RESOURCE	ISSUE
Vegetation Resources including Noxious and Invasive Weeds and Special Status Species	Would the Project remove native vegetation and impact plant habitat, including rare, native, and special status plant species?
	Would the Project influence the spread of invasive and noxious plants?
Wildlife including Special Status Wildlife, Migratory Birds, and Fisheries	Would the Project adversely affect wildlife, including special status species, by direct disturbance, stressing populations, and fragmentation of wildlife corridors and linkages?
	Would the Project increase predation by providing numerous perches for predatory birds to detect prey?
	Would the Project cause direct mortality to wildlife during construction due to construction vehicle traffic, vegetation removal, and excavation activities?
	Would the Project affect ESA-listed fish species and their habitat at the Colorado River crossing?
	How would adverse impacts to threatened, endangered, and sensitive wildlife species be minimized or avoided?
Cultural Resources	Would cultural resource sites be impacted by the Project?
Tribal Relationships and Treaty Rights	Would the BLM conduct government-to-government consultation with affected Indian tribes and adhere to NHPA Section 106 requirements?
	Would the Project impact the ability of tribal members to exercise their treaty rights in the Project Area?
Hazardous Materials and Hazardous and Solid Waste	How would the Project protect soil, groundwater, and communities in the Project Area from hazardous materials or petroleum products that would be used during construction and operation?
Land Use, Agriculture, Special Designations, and Wilderness	Would the Project impact military operations and training on the YPG through the transmission line EMFs, which could affect YPG radio frequencies and make the facility less secure?
	Would the Project interfere with agricultural operations and efficiency?
	Would the Project affect the wilderness values of naturalness, undeveloped quality, and opportunities for primitive recreation and solitude, both within designated wilderness and lands with wilderness characteristics?
	Would the Project be consistent with the Kofa NWR mission and purpose?
Recreation	What would be the effect of the Project on hunting, recreation access, and recreational experiences within the Project Area?
	What would be the effect of Project on the pristine qualities and technical challenge of Johnson Canyon and the Arizona Peace Trail, which could detract from the recreation experience in these areas?
	Would the Project affect recreational vehicle camping in the Quartzsite area?

COMPONENT OR RESOURCE	ISSUE
Socioeconomics	What would the Project's effect be on access to and cost of environmentally friendly energy sources?
	Would the Project affect property rents and values?
	Would the Project impact some recreation experiences that could lead to impacts on economic opportunities related to tourism and recreation in the Project Area?
	Would the Project impact the tax base in affected counties and/or the counties' ability to fund services for residents?
	Would Project construction affect employment opportunities?
	Would the transmission line affect revenue generation by other utilities?
	Should direct adverse economic impacts to local communities result from the Project, would there be indirect social impacts or impacts to future economic development options?
	Would indirect impacts from mitigation adversely impact economics in the Project Area?
Socioeconomics	Would social and economic conditions and impacts be broken out and identifiable by county?
Transportation, Public Health, and Safety	Would construction of new roads associated with the Project impact the level of OHV use within the Project Area and/or spread OHV use into new areas?
	Would the use of new and existing roads for access to the transmission line impact the potential for trespass on the YPG by OHV riders and unauthorized individuals?
	Would construction of the Project impact the threat of contracting valley fever via fugitive dust, which carries the virus?
	Would EMFs from the transmission line affect the health of those near the line or create the perception of potential adverse health effects?
	Would the Project affect the operation of existing utilities in the Project Area?
Visual Resources	How would the Project affect the quality of the visual landscape?
Water Resources	Would the Project could affect washes, stream channels, hydrologic function, and future flood control?
	Would the Project impact the quality and/or quantity of surface and groundwater?
	Would the Project affect agricultural irrigation, thus impacting groundwater and surface water supply?

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Appendix 1A USFWS Finding of Appropriateness of Refuge Use

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Post Office Box 1306
Albuquerque, New Mexico 87103

In Reply Refer To:
FWS/R2/NWRS/AZ-NM/064736

January 26, 2017

Ms. Jennifer Rouda
Vice President, Environmental Development
Abengoa Transmission & Infrastructure
2929 North Central, Suite 1000
Phoenix, Arizona 85012

Dear Ms. Rouda:

The U.S. Fish and Wildlife Service (Service) has completed the enclosed Finding of Appropriateness of a Refuge Use (Finding) for the project proposed by Delaney Colorado River Transmission to construct a 500 kV transmission line across about 25 miles of Kofa National Wildlife Refuge (NWR).

The Finding was conducted pursuant to policy in the Service Manual (Chapter 603 FW 1). As previously advised, for a use to be found appropriate, it must be a wildlife-dependent recreational use; contribute to fulfilling the refuge purpose(s), National Wildlife Refuge System (NWRS) mission, or goals or objectives described in a refuge management plan; or meet the criteria addressed in the enclosed FWS Form 3-2319. This proposed transmission line it outside of any permitted right of way and based on our evaluation, the proposed project does not meet the criteria for an appropriate use and would interfere with and detract from fulfilling the NWRS mission and purpose of Kofa NWR. As such, the Service has found that the proposed project cannot be authorized and a right of way permit will not be granted for this project on Kofa NWR.

If you have questions, please contact me at 928-783-7861.

Sincerely,

Elaine E. Johnson

Elaine Johnson, Complex Manager

Enclosure (s)

Cc: Richard Weiss, Project Manager, Starwood Energy Group
Emilio Rodríguez-Izquierdo Serrano, VP Business Development, Phoenix Office, Abbengoa
Cary Olson, Senior Project Manager, HDR Engineering
Joseph Incardine, National Project Manager, Bureau of Land Management
Eduardo Arreola, Supervisory Project Manager, AZ State Office, Bureau of Land Management
John MacDonald, Field Manager, Yuma Office, Bureau of Land Management
Steve Spangle, Field Supervisor, AZ Ecological Services, U.S. Fish and Wildlife Service
Juliette Fernandez, Refuge Supervisor AZ/NM, U.S. Fish and Wildlife Service

FINDING OF APPROPRIATENESS OF A REFUGE USE

Refuge Name: Kofa National Wildlife Refuge

Use: 500 KV transmission line Right Of Way (ROW) request

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

Decision Criteria:	YES	NO
(a) Do we have jurisdiction over the use?	✓	
(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?	✓	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?		✓
(d) Is the use consistent with public safety?	✓	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?		✓
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?		✓
(g) Is the use manageable within available budget and staff?		✓
(h) Will this be manageable in the future within existing resources?		✓
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?		✓
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?		✓

Where we do not have jurisdiction over the use ("no" to (a)), there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ("no" to (b), (c), or (d)) may not be found appropriate. If the answer is "no" to any of the other questions above, we will generally not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes ___ No ✓

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

Not Appropriate ✓ Appropriate ____

Refuge Manager: Elaine E Johnson Date: 21 Oct 2016

If found to be Not Appropriate, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found Not Appropriate outside the CCP process, the refuge supervisor must sign concurrence.

If found to be Appropriate, the refuge supervisor must sign concurrence.

Refuge Supervisor: [signature] Date: 1/24/17

A compatibility determination is required before the use may be allowed.

FWS Form 3-2319
02/06

Finding of Appropriateness of a Refuge Use

Proposed Use: Issuance of new right-of-way permit to DCR Transmission, LLC for construction and operation of Ten West Link 500 kV transmission line through the Kofa National Wildlife Refuge

DCR Transmission, LLC (DCRT), a California-based electric company, is proposing to construct a segment of a 500 kV line from east to west across the 24.8-mile width of Kofa National Wildlife Refuge (NWR). This would be part of the 114-mile, 500 kV Ten West Link transmission line that originates at the Delaney Substation in Maricopa County (AZ), traverses through La Paz County, and crosses the Colorado River into the Southern California Edison Colorado River Substation in Riverside County, CA. DCRT is requesting a new right-of-way (ROW) permit from the U.S. Fish and Wildlife Service (Service) for this proposed line which would be constructed on Kofa NWR adjacent to an existing Southern California Edison (SCE) transmission line (Devers Palo Verde 1). This new ROW request is from a different company (DCRT). It cannot be accommodated within the exiting SCE ROW and therefore, would require a new ROW.

The ROW requested would include a 24.8-mile long, 180-foot wide easement (90 feet on each side of the proposed transmission line). The requested ROW totals about 542 acres. It would be separated from the existing SCE ROW which is 160 feet wide by an 80-foot wide gap. The cumulative width of the existing SCE ROW (160ft), the gap (80ft), and the ROW requested by DCRT (180ft) would be 420 feet.

In May 2016, the Service's Southwest Regional Realty Division received an April 16, 2016 letter from DCRT requesting a "Certificate of Compatibility and Right of Way". Prior to review of a proposed use of a National Wildlife Refuge for compatibility, the use must first be found to be an Appropriate Use as outlined in 603 FW 1.

For a potential use of a refuge to be found appropriate, the use must meet at least one of the following conditions: (1) it is one of the six wildlife-dependent recreational uses identified in the National Wildlife Refuge System Improvement Act of 1997; (2) the use contributes to fulfilling the refuge purpose, the National Wildlife Refuge System mission, or goals and objectives of a refuge management plan; (3) the use involves the take of fish and wildlife under State regulations; or (4) the Refuge Manager has evaluated the use and found it to be appropriate.

Construction of a transmission line is clearly not a wildlife-dependent recreational use; it does not contribute to fulfilling the refuge purpose, NWR System mission, or goals and objective of a refuge management plan; and it does not involve hunting or fishing under State regulations. This proposed transmission line has not previously been evaluated for appropriateness and has thus not previously been found to be appropriate.

Based on these criteria and the justifications presented below for responding to the questions in the "Finding of Appropriateness of a Refuge Use" form (see attached), this proposed use is not appropriate and construction of a new transmission line across Kofa NWR should not be considered as a viable alternative in the Environmental Impact Statement under preparation by

the U.S. Bureau of Land Management (BLM). Further consideration by the Service of the ROW permit application submitted by DCRT should be discontinued.

The following discussion provides our reasoning for addressing each of the decision criteria in the attached Finding of Appropriateness checklist:

(a) Does the Service have jurisdiction over the use?

YES - Portions of the proposed electrical transmission line would be on lands managed as part of the Kofa NWR and owned in fee title. The Service has full jurisdiction over all uses proposed on this land. Service policy 340 FW3 states, "It is the policy of the Service to discourage the types of uses embodied in right-of-way requests. On areas in the National Wildlife Refuge System (System), if a right-of-way cannot be certified as compatible with the purposes for which a unit was established, it cannot be granted without authorization by Congress (50 CFR 29.21(g))."

(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?

YES - It is unknown if the proposed electrical transmission line would be compliant with all applicable laws and regulations. It is assumed that construction of a new electrical transmission line at any location would only be permitted if it were consistent with all applicable laws and regulations.

(c) Is the use consistent with applicable Executive orders and Department and Service policies?

NO - It is the policy of the Service to discourage the types of uses embodied in ROW requests. If a ROW cannot be certified as compatible with the purposes for which a refuge was established and the mission of the NWR System, it cannot be granted without authorization by Congress (340 FW 3, Rights-of Way and Road Closings). In this case, Kofa NWR was established for the conservation of natural wildlife resources with an emphasis on conservation of desert bighorn sheep. Before any project is evaluated regarding its compatibility, it must first be determined by the Refuge Manager to be an appropriate use.

This proposed ROW would also be inconsistent with the NWR System Improvement Act of 1997 which mandates maintaining biological integrity, diversity and environmental health. Each refuge is required to protect and where appropriate, restore natural, historic ecological conditions including associated processes (e.g., native semi-desert grassland succession and regeneration). Historic conditions are those which were present prior to substantial, human-related changes to the landscape (601 FW 3.6D - Biological Integrity, Diversity, and Environmental Health).

ROWs and other construction projects may cause habitat fragmentation, degrade habitat quality through introduction of contaminants, disrupt wildlife movement corridors, alter hydrology, facilitate introduction of invasive species, and disturb wildlife. Proposed uses which would conflict with the legal requirement to maintain ecological integrity are not considered appropriate or compatible. Service policy (603 FW 2.5A) further states that proposed refuge uses that would

conflict with the legal requirements to maintain biological integrity, diversity, and environmental health are not compatible. This proposed use does not support these criteria.

(d) Is the use consistent with public safety?

YES - While likely no direct threat to public safety, the establishment of a new ROW for the construction and long term maintenance of a new transmission line will create additional traffic on the east-west road across the northern part of Kofa NWR. Additional traffic will increase the likelihood of off-road vehicular incursions and the potential for accidents involving motor vehicles, bicycles, horseback riders, and pedestrians on the refuge. In addition, the construction of a new transmission line would increase fire danger from the power line directly, and by maintenance activities such as vegetation clearing near and under the transmission line. Potential health effects of exposure to electromagnetic fields are unknown and may be a concern to some visitors.

(e) Is the use consistent with goals and objectives in an approved management plan or other document?

NO - The proposed project is contrary to specific refuge objectives, the establishment purpose of the refuge, the mission of the NWR System, and Service policy regarding management of wilderness.

Construction of a 500kV transmission line would be in conflict with the specific goals and objectives outline in the 1996 Kofa NWR and Wilderness and New Water Mountains Wilderness Interagency Management Plan and Environmental Assessment (Interagency Management Plan and EA). Refuge management programs are designed to protect natural resources and values of the refuge for the long-term and to provide for public appreciation of the refuge as appropriate and compatible with the refuge establishment purposes.

Management objectives and issues identified in the 1996 Interagency Management Plan and EA include:

- Preservation of Wilderness Values: Maintain or enhance the wilderness values of naturalness; maintain outstanding opportunities for solitude and primitive recreation and special features; and preserve and enhance scenic qualities.

- Wildlife and Habitat Management: Within a dominant wilderness context, maintain and enhance the natural diversity of flora and fauna, in particular listed and candidate species, sensitive species and special status species; recover population and maximize genetic diversity of desert bighorn sheep; reintroduce Sonoran pronghorn and establish a viable population; manage fire; manage wildlife waters; and prevent establishment of invasive species.

- Recreation and Public Access: Maintain high quality opportunities for recreation and wildlife dependent and/or primitive recreation that is compatible with the purposes for which

Kofa NWR was established including wildlife observation, hunting, camping, photography and wilderness opportunities for solitude.

Kofa NWR encompasses just over 666,000 acres of Sonoran desert habitat. It was established in 1939, and was "…reserved and set apart for the conservation and development of natural wildlife resources" (Executive Order 8039, 4 FR 438), with an emphasis on improving the population of desert bighorn sheep.

The overall management of the Kofa NWR focuses on providing for a diversity of plants and wildlife that currently exists or historically occurred on the refuge. The various habitats throughout the refuge are home to over 193 bird species, 43 species of reptiles and amphibians, 50 mammal species, including desert bighorn sheep, mule deer, bobcats, mountain lions and the endangered Sonoran pronghorn. The Sonoran desert tortoise, although not currently listed, still remains a species of concern.

Kofa NWR was established for the recovery of desert bighorn sheep populations. While the sheep have largely done well on the refuge, a recent population decline of nearly half the historic population of 800 sheep prompted investigations into possible causes of the decline and management actions targeted specifically toward recovery. Increased habitat fragmentation and construction activities that would occur as a result of a ROW for a transmission line, may slow population recovery and restrict sheep movements between mountain ranges. North-south movement between mountain ranges is important for sheep to maintain genetic diversity and since habitat conditions may vary dramatically between different locations based on sporadic and localized rainfall. It is important for the long-term survival of desert bighorn sheep to be able to move to areas with sufficient food and water, particularly during dry seasons or dry years and prolonged droughts.

The mission of the NWR System is "To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." Construction of a 500kV transmission line would not support nor be consistent with this mission.

The Wilderness Act of 1964, as amended, established the National Wilderness Preservation System and mandates that wilderness areas be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness. Congress designated 547,719 acres or over 80 percent of Kofa NWR, as wilderness through the 1990 Arizona Desert Wilderness Act. For refuges that encompass Congressionally-designated wilderness, the purposes of the Wilderness Act are additional purposes of the wilderness portion of that refuge (603 FW 2 2.6). While the proposed ROW would not lie directly within wilderness, it would be in close proximity and a project of this magnitude will inevitably have negative effects on the wilderness values and character of the refuge.

At least 22 species of plants protected under the Arizona Native Plant Law (Arizona Revised Statutes Title 3) have been documented or are highly likely to occur within the potential ground-

disturbing area. One endangered species has been documented and 10 wildlife species considered a Sensitive Species by BLM or Arizona Game and Fish Department (AGFD) Wildlife of Special Concern have moderate to high potential to occur in the area. Ground disturbance, construction and maintenance activities, and subsequent increase in traffic will increase possible introduction and dispersal of invasive species and disturbance to cryptobiotic soils and desert "pavement".

In 2011, the refuge began work to re-establish a population of the endangered Sonoran pronghorn on Kofa NWR which lies within the historic range of the species. This was undertaken to support recovery and down-listing of the species. The wild population has reached about 70 animals through reproduction and supplemental releases. Sonoran pronghorn are nomadic and require large expenses of land to survive as localized droughts are frequent and summer rains are sporadic. These animals must be able to move to areas with sufficient food and water throughout the year. Sonoran pronghorn have repeatedly been documented within the area of the proposed ROW and may be negatively impacted by general human disturbance, construction and maintenance activities, and associated habitat loss and fragmentation.

The Sonoran desert tortoise is a species of concern. Past surveys on Kofa NWR have indicated a healthy but low density tortoise population. Density and diversity of vegetation are important to tortoise distribution. An additional powerline would alter plant communities and reduce already limited cover, further fragment habitat, and increase the potential for encounters between people and tortoises.

Construction of spur roads and expansion of the utility corridor would impact small mammals and herpetofauna through habitat fragmentation and potential isolation of populations. Species affected may include BLM Sensitive Species or AGFD Wildlife of Special Concern such as the rosy boa and Gila monster. Construction activities would result in unavoidable direct mortality of a number of mammals and reptiles. Construction and maintenance activities associated with the ROW could negatively impact the four Arizona Partners in Flight Priority Species that occur on the refuge (Lucy's warbler, Le Conte's thrasher, lesser nighthawk, gilded flicker) by destroying nesting or foraging habitat or disrupting nesting activities. Collisions with towers and associated power lines would result in direct mortalities of migratory birds passing through the refuge. An increased width of disturbed area would affect the ability of small animals to move from one area of cover to another.

The cumulative and incremental impacts of the new proposed ROW in addition to the existing power line and pipeline ROWs may pose the greatest impact to the refuge. An expanded corridor of over 2.5 times the width of the existing power line ROW plus an additional high-voltage line would result in greater fragmentation of habitat for desert bighorn sheep, Sonoran pronghorn, Sonoran desert tortoise and other wildlife. Human activity associated with construction and maintenance, habitat disturbance and destruction, noise and dust from construction and maintenance, and the transmission line itself, as well as visual separation can discourage wildlife from crossing the disturbed area. As has been well documented with roads, the width and traffic level on a road largely determines the ability of wildlife to move from one area to another. Expansion of the disturbed area and increased activity could lead to greater separation of the north part of the refuge from the remainder, leading to reduced values for wildlife, increased

potential of accidents between wildlife and people, and reduced wilderness and recreational values for visitors.

Establishing a ROW for construction and long-term maintenance of a transmission line through Kofa NWR would not contribute to the purposes of the refuge nor the NWR System mission. In fact, a new ROW would detract from the refuge purposes. It is anticipated that such a ROW would have significant negative effects on wilderness values (e.g. noise impacts) and overall scenic qualities of the area; native plant and wildlife species, including desert bighorn sheep and endangered Sonoran pronghorn; nationally important species including the Sonoran desert tortoise and migratory birds; and would promote expansion of invasive plants and habitat fragmentation.

(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?

NO - The Ten West Link transmission line is a new project and DCRT's request for a ROW through Kofa NWR has not previously been considered.

(g) Is the use manageable within available budget and staff?

NO – A new ROW for a transmission line would require routine vegetation control and road maintenance. These activities would typically be conducted by the utility company but require oversight by refuge staff to ensure compliance with any stipulations in the ROW or special use permits. The commitment of staff may be significant, particularly in the vicinity of important natural resources and in proximity to wilderness. We would anticipate increased traffic from a ROW and potential widening of the road. This would necessitate increased law enforcement to prevent off-road violations and wilderness incursions and provide general oversight of the new activity. Resources required to oversee these additional activities are currently not available at the refuge and unlikely to be available in the future.

(h) Will this be manageable in the future within existing resources?

NO - Current resources are not available to manage these activities (see justification above for g) and are unlikely to become available in the future.

(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?

NO - The construction of a transmission line through Kofa NWR would not contribute to the public's understanding and appreciation of refuge natural and cultural resources; nor is it beneficial to the refuge natural or cultural resources. The proposed use would be damaging to natural and cultural resources including fragile desert habitats, wildlife, and scenic landscapes. In particular, the scenic quality and wilderness values of the refuge would be compromised by the ROW. Due to their close proximity, activities associated with the proposed use would

detract from the values of nearby designated wilderness that the refuge is mandated to preserve and degrade the visitor experience in the vicinity of the transmission line.

(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?

NO - A new ROW and associated construction and maintenance on Kofa NWR would be damaging and detrimental to the quality of wildlife-dependent recreation including hunting, wildlife viewing, wildlife photography, and interpretation. The scenic quality and wilderness values of the refuge would be compromised by the ROW and wildlife and visitors engaged in hiking or camping would be disturbed by construction and maintenance activities, increased traffic, degradation of scenic refuge view sheds, and reduced opportunities to view wildlife due to disturbance and fragmentation and destruction of habitat.

The refuge encompasses approximately 666,000 acres and provides a wide range of wildlife-dependent recreation for visitors. Eleven criteria for "quality" wildlife-dependent recreation are defined in the Service Manual (605 FW 1, Section 1.6) and include providing opportunities for visitors to experience wildlife. Although open to visitors, Kofa NWR is largely designated wilderness and does not offer improved access (i.e. paved roads and trails) that support high visitor use. Therefore, the refuge provides a unique opportunity for wildlife-dependent recreation in a relatively isolated setting. Allowing a new ROW would impact wildlife-dependent recreational opportunities due to reduced habitat quality which directly impacts wildlife species upon which recreation is based. Additionally, the wilderness and scenic qualities of Kofa NWR would be compromised by the presence of a new ROW and the large size of the proposed transmission line. Allowing a new ROW would impair the quality of the visitor experience, lead to an increase in vehicle trespass into wilderness and other parts of the refuge, and likely reduce the opportunity of visitors to experience wilderness and wildlife.

In addition, the additional refuge resources needed to manage and oversee the new ROW activities would further reduce resources available for protecting wilderness values, native wildlife, endangered species, and providing for future wildlife dependent recreation.

Decision Justification

The proposal to construct a 500kV transmission line across nearly 25 miles of Kofa NWR does not meet the criteria for an appropriate use. As this proposed project does not promote wildlife-dependent recreation and does not support the purpose for which the refuge was established and the mission of the NWR System or the goals and objectives of the Interagency Management Plan and EA, we do not find it an appropriate use of the refuge.

Appendix 1B Memorandum of Understanding between BLM and CPUC

BLM Agreement No. _____
Cooperator's No. _____

MEMORANDUM OF UNDERSTANDING

between

THE BUREAU OF LAND MANAGEMENT

and

STATE OF CALIFORNIA PUBLIC UTILITIES COMMISSION
on the

Ten West Link 500kV Transmission Project

This **MEMORANDUM OF UNDERSTANDING** (MOU) is hereby entered into by and between the Bureau of Land Management, hereinafter referred to as the BLM, and the State of California Public Utilities Commission, hereinafter referred to as the CPUC. The BLM and CPUC are hereinafter referred together as the Parties.

A. INTRODUCTION and PURPOSE:

Delaney-Colorado River Transmission, LLC (DCR Transmission) is proposing to build the Ten West Link 500kV Transmission Project, a new 500 kV transmission line between the Arizona Public Service (APS) Delaney Substation, in Tonopah, Arizona, extending west to Southern California Edison's (SCE) Colorado River Substation, just west of Blythe in Riverside County, California (the Project). The Project involves the reintroduction of a portion of the transmission project previously proposed by SCE and referred to as the Devers-Palo Verde 500 kV No. 2 Transmission Line Project (DPV2 project). DCR Transmission submitted an Application for Transportation and Utility Systems and Facilities on Federal Land with BLM on September 14, 2015. The Project would span approximately 114 miles, including 97 miles in Arizona and 17 miles in California, largely following the existing DPV1 transmission line in an established utility corridor. The proposed route largely follows BLM-designated utility corridors, which are 1 mile in width, and the transmission line would be considered a compatible use within these corridors. DCR Transmission would require a 200 foot ROW for the transmission line and would be required to maintain a 250 foot separation from the existing DPV1 line in accordance with requirements set forth by CAISO. To the extent possible, DCR Transmission proposes to use existing access roads currently used to maintain the DPV1 transmission line. The Project also would include requisite transmission line series compensation located approximately in the middle of the route. The proposed series compensation substation would be arranged parallel to an existing compensation substation for DPV1 in Vicksburg, Arizona.

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Because the CPUC is required to make a discretionary decision to determine if DCR Transmission can construct the Project in accordance with California Environmental Quality Act (CEQA) guidelines, CEQA is triggered. The BLM also has a decision to make concerning the ROW grant and also one or more plan amendments concerning the project. The BLM will begin preparing an Environmental Impact Statement (EIS) in 2016 in compliance with 1508.11 of the National Environmental Policy Act of 1969 (NEPA), CEQA Statutes Section 21061 and CEQA Guidelines Section 15221 and 15120 to 15132 and all other applicable laws, executive orders, regulations, and direction. The BLM personnel will work with CPUC staff to write the EIS in a manner that complies with both CEQA and NEPA.

The purpose of this MOU is to provide a framework for cooperation between the BLM and the CPUC to work together as lead agency and cooperating agency, in that order, in preparing and completing a joint environmental analysis and document that is in compliance with NEPA, CEQA, and all applicable laws, executive orders, regulations, direction, and guidelines. Work would include, but is not limited to, environmental and technical information collection, analysis and reporting. This Memorandum of Understanding includes meetings and/or conference calls as necessary for planning, information sharing, gathering and incorporating comments to the draft EIS to ensure CEQA compliance. Should the decision be made to authorize the Project, this Memorandum of Understanding continues the cooperation during construction of the Project, including the implementation of the mitigation measures and monitoring developed through the NEPA process. This cooperation serves the mutual interest of the Parties and the public.

B. STATEMENT OF MUTUAL BENEFIT AND INTERESTS:

The Council on Environmental Quality (CEQ) regulations (40 CFR 1506.2) direct federal agencies to cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements, including joint planning processes, environmental research and studies, public hearings, and environmental impact statements. The CEQ regulations (40 CFR 1501.6) provide for and describe both lead and cooperating agency status, and emphasize agency cooperation early in the NEPA process. For the purposes of this effort, BLM will be the lead agency developing one document in coordination with the CPUC acting as Cooperating Agency. CPUC will retain its approval authority for all aspects of the Project within its jurisdiction. CEQA Guidelines Sections 15222 and 15226 encourage similar cooperation by state and local agencies with federal agencies when environmental review is required under both CEQA and NEPA.

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This MOU meets the intent of these regulations and provides guidance on the roles each agency will take. In consideration of the above premises, the Parties agree as follows:

C. BLM SHALL:

1. As lead Federal agency, be responsible for ensuring compliance with the requirements of NEPA, and the CEQ, and BLM regulations implementing NEPA, along with all applicable federal laws, executive orders, regulations and direction, and shall be responsible for the EIS and the scope and content of the portion of the EIS that relates to all necessary federal law and regulatory requirements.

2. Provide to the CPUC for review and comment a draft of the Project Description and Alternatives section as soon as they are available to ensure that adequate detail is included to support CPUC's review, analysis and decision.

3. Provide the administrative draft of the EIS to the CPUC for its review and comment prior to the release of the public draft.

4. Schedule meetings as necessary with the CPUC to discuss status updates, related findings, schedules and planning associated with the EIS.

5. Ensure that the BLM approved EIS contractor will complete the environmental analysis and prepare the EIS in a form and in substance that is consistent with this MOU and agreeable to the Parties;

6. Act as the intermediary, when necessary, for communications between the CPUC and the contractor related to the EIS;

7. Provide updated mailing lists to the contractor for distributing the Notice of Availability of the EIS to the public and to other Federal, State, and local agencies as required under NEPA. The BLM shall provide updated mailing lists of the EIS, and Record of Decision to the public and to other Federal, State, and local agencies as required by law;

8. Approve contractor's draft newspaper advertisements, public notices, and Notice of Availability of the document and ensure publication in appropriate periodicals;

9. Will ensure that the contract incorporates the condition that the contractor will provide all graphic handouts and presentations for public meetings/hearings. The contractor shall submit any such graphic presentations and/or handouts to the BLM for approval prior to distributing them at public meetings/hearings;

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10. Be responsible for conducting public meetings and provide CPUC with sufficient advanced notice of these hearings so that the CPUC can attend in a cooperating role;

11. Will use its best efforts to ensure that the MOU between DCR Transmission and BLM incorporates all of the following conditions:
    (a) The contractor agrees to hold harmless and indemnify the BLM and CPUC with respect to any and all claims, demands, cause(s) of action, and liabilities which may arise from the contractor's performance, purchases, or services utilized in the preparation of the EIS.
    (b) The contractor will sign a disclosure statement specifying that they have no financial or other interest in the outcome of the Project.
    (c) The contractor shall cooperate in defense of any appeal and/or suit involving the legality or adequacy of the BLM's or CPUC's compliance with NEPA or CEQA with regard to this EIS.
    (d) The contractors will be responsible for all stenographic, clerical, graphics, layout, printing, and like work.
    (f) The contractor shall produce an internal administrative Draft EIS for review by the BLM and CPUC prior to publication of the Draft EIS. The administrative draft shall include all text, maps, appendices, tables, charts, and other materials that will be incorporated in the Draft EIS for publication. As determined by both the BLM and CPUC, the contractor shall provide a reasonable number of copies to each party to meet internal review needs.
    (g) The Draft EIS will include evaluation of potential routes, alternative designs, and impacts. The Draft and Final EIS will apply whichever NEPA and CEQA requirement is more stringent in the California portion of the analysis. The Draft and Final EIS will describe any inconsistencies between Federal plans or laws as they pertain to the proposed action and describe the extent to which the BLM would reconcile the proposed action with the plan or law.
    (h) Subject to Parties' comments during the environmental analysis and responses to the administrative Draft and Final EIS, the contractor shall have primary responsibility for writing and rewriting all sections, parts, and chapters of the EIS.
    (i) The CPUC is a third-party beneficiary to the MOU that DCR Transmission and the BLM with the right to enforce contract provisions affecting its interests.

12. Provide oversight to the consultant in filing the Draft and Final EIS with the U.S. Environmental Protection Agency (US EPA).

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13. Reserve the right to prepare, at its option, selected sections of the Administrative Draft and/or Final EIS; as appropriate, the BLM will provide such prepared material in a time and manner consistent;

14. Be responsible for consulting with the United States Fish and Wildlife Service for a Section 7 Consultation and the California State Historic Preservation Officer for a Section 106 Consultation regarding the proposed federal action; at the discretion of the BLM, the consultant shall furnish such data or information required to accomplish such consultation; the BLM shall include CPUC staff in these meetings and discussions, as required; act as the lead for Native American consultation;

15. As required, the BLM will be responsible for consulting with the California Department of Fish and Wildlife;

16. Should the decision be made to authorize the Project, delegate to the CPUC field inspection responsibility along with BLM's and the proponent's consultant for ensuring implementation of the mitigation and monitoring activities adopted in the Record of Decision for the substation and transmission line interconnection portion of the project and provide CPUC and its representatives access to the ROW area and project land (without further authorization), as requested by CPUC, for this purpose; and,

17. To the extent that CEQA or NEPA guidelines may preclude, or are potentially inconsistent with, construction of the proposed Project that is the subject of this MOU, the BLM will identify such potential inconsistencies at the beginning of the EIS process, and shall collaborate with the CPUC and the contractor to ensure that sufficient information is collected during the course of the environmental assessment process to allow the BLM to begin an EIS for the Project to remove such inconsistencies and allow the Project to be carried forward.

D. CPUC SHALL:

1. As the cooperating State agency, be responsible to ensure that the EIS is in compliance with all requirements of CEQA and shall be responsible for the scope and content of the EIS that relates to all necessary aspects of CEQA.

2. Should the level of detail in the administrative draft EIS be found insufficient in meeting CEQA standards or CPUC Orders, the CPUC will inform the BLM of this insufficiency and allow them to rectify the document. If at the end of the EIS process the insufficiency remains, the BLM will continue the EIS development, and the CPUC will create an Environmental Impact Report or

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Mitigated Negative Declaration (whichever is required) separately, hiring its own consultants.

E. IT IS MUTUALLY AGREED AND UNDERSTOOD BY ALL PARTIES THAT:

1. Schedule of Deadlines. The BLM intends to make a decision on the Final EIS by the fourth quarter of 2017. Both Parties will attempt to meet this timeframe. Attached to this MOU is a draft detailed schedule, which the Parties intend to serve as a template for the actual schedule of deadlines that they intend to adhere to in completing the environmental review that is the subject of this MOU. The parties agree to modify and reach final agreement on the details of this draft schedule, which will include specific dates establishing the deadlines for expected deliverables from the BLM/BLM's contractor, as well as deadlines for the BLM and the CPUC to respond to all materials provided by the BLM/BLM's contractor, *within one month.* Once the details of this schedule are agreed to, the Parties shall undertake their best efforts to comply with *all* deadlines set forth in said schedule.

2. Contractor Selection. Stantec has been mutually chosen by BLM and DCR Transmission as BLM's 3rd party contractor who will prepare the NEPA document as directed by the BLM.

3. Agency Project Representatives. For the purpose of coordinating the responsibilities of the Parties for the preparation of the EIS on the Project, the persons listed below are the designated Agency Project Representatives of the Parties. Actual delivery of written notice to the following representatives, or such substitute representatives as the respective Parties may hereinafter designate, shall constitute notice to that organization. The principal contacts for this instrument are:

BLM National Project Manager	CPUC Cooperator Project Representative
Joe Incardine	Eric Chiang
Bureau of Land Management Lands & Minerals c/o Lane Cowger	California Public Utilities Commission
One North Central Ave., Suite 800	505 Van Ness Ave, 4th Floor
Phoenix, AZ 85004	San Francisco, CA 94102
Phone: 801-560-7135	Phone: 415-703-1956
FAX: 602-417-9452	FAX: 415-703-2200
E-Mail: jincardi@blm.gov	E-Mail: eric.chiang@cpuc.ca.gov

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4. Regular Coordination between Parties. The successful preparation of the EIS requires complete and full communication between all Parties involved. It is the duty of the Agency Project Representatives to ensure close coordination throughout the document preparation and review process. Accordingly:
   (a) BLM will lead regular monthly conference calls with the Cooperating Agencies to insure that communications occur on the Project.
   (b) Additionally, the Agency Project Representatives shall keep each other advised of the developments affecting the preparation of the Draft EIS. Toward this end, and to ensure close consultation and coordination, the Agency Project Representatives shall conduct conference calls as necessary, and shall meet face-to-face as deemed necessary.
   (c) In the event that either Agency Project Representative is unable to participate in any such regularly scheduled conference call or meeting, an alternate shall be delegated to represent that Agency Project Representative's party in said call or meeting.
   (d) The BLM also recognizes the need for the CPUC to work directly with BLM's contractors with regard to the Project and CEQA requirements. The CPUC will keep the BLM informed of these discussions (via email notification) and will involve the BLM when appropriate.
   (e) Consistent with existing laws and regulations, the Parties agree to share all relevant information.
   (f) Any and all media releases and/or public mail-outs shall be made with the joint approval and at the direction of the BLM and the CPUC.

5. Scope and Content of the EIS. The BLM shall schedule and conduct scoping meetings at the beginning of the process, according to NEPA. These meetings will be held to determine the areas of public and agency concerns pertaining to the proposed Project, and guide the Parties in scoping the EIS. The BLM in coordination with the CPUC as a cooperating agency shall determine the final scope of the EIS. The Agency Project Representatives shall determine (with approval, if necessary, from the signatories to this MOU or their delegates):
   (a) the scope and content of the EIS for the Project is to ensure that the requirements of the various federal and state statutes (i.e. - NEPA, CEQA, CPUC Orders and policies) are met and that the statutory findings required of the BLM and CPUC for their respective decision on the Project can be made;
   (b) whether the work performed by the consultant is satisfactory, and if not, how best to correct the deficiencies in the work; and
   (c) the division of responsibilities among the lead agency and cooperating agencies.

6. CPUC may request revision of the administrative draft with further agency review.

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7. Consultation with Other Agencies. The BLM and CPUC reserve the right to consult directly, without notice or report, with other Federal, State, and local officials regarding their areas of specific responsibility outlined in Section C and D above during the preparation of the EIS to ensure objectivity and compliance with NEPA and CEQA. The Parties will immediately notify each other and the necessary contractors if matters discussed at any such consultation will require significant changes in the development of the EIS or require significant costs pursuant to this Memorandum of Understanding.

8. Privileged and Confidential Information. The BLM and the contractor will, upon request, provide CPUC with procedures and underlying data used in developing submitted sections of the Draft and/or Final EIS including, but not limited to, final reports, subcontractor reports, and interviews with concerned private and public parties, whether or not such information is contained in the working papers or the Draft or Final EIS. The Parties intend that information that is otherwise protected from disclosure under the attorney-client privilege, work-product privilege, and deliberative process privilege and/or any other applicable privilege may be exchanged without waiving or compromising such privileges or doctrines. The Parties agree that privileged information received from the other party shall be treated and maintained as confidential to the extent allowed by federal and state laws, regulations and policies. Parties agree to label as "Confidential" documents that they believe are privileged and should not be disclosed. Neither Party will disclose privileged information received from the other Party, regardless of whether it is labeled "Confidential," without first notifying other Party. The BLM will obtain information that they maintain as confidential directly from BLM.

9. Freedom of Information Act. Any information furnished to the BLM under this Memorandum of Understanding is subject to the Freedom of Information Act (5 U.S.C. 552). The BLM acknowledges that the Cooperator is subject to the California Public Records Act. However, the Cooperator agrees not to release these materials to individuals or entities other than the Parties to this MOU and their contractors, without prior consultation with the BLM. The BLM may withhold from the Cooperator those documents that would otherwise be available for public release under the California Public Records Act if those documents are otherwise exempt from disclosure under a specific provision of FOIA.

10. Effective Dates. This MOU is executed as of the date of the last signature and is effective through, or the date on which all mitigation measures required in connection with approval of the Project have been fully implemented, whichever date is earlier, at which time it will expire unless extended.

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11. Modification. Modifications to this MOU shall be made by mutual consent of the Parties, by the issuance of a written instrument, signed and dated by all Parties.

12. Termination. Either of the Parties, in writing, may terminate this MOU in whole, or in part, at any time before the date of expiration upon 30 days written notice to the other party. During any such 30-day waiting period, the Parties will actively attempt to resolve any disagreement between them. In the event of termination of this MOU, both the BLM and CPUC shall have access to all documentation, reports, analyses, and data developed by the contractor.

13. Rights and Responsibilities of Parties. This MOU sets forth the Parties' rights and responsibilities for preparing the EIS, and for subsequent activities related to the document. This MOU in no way restricts the BLM or the CPUC from participating in similar activities with other public or private agencies, organizations, and individuals. This MOU does not authorize the transfer of funds between parties. Each Party is responsible for its own acts and omissions in connection with activities undertaken pursuant to this MOU.

THE PARTIES HERERTO have executed this instrument

John MacDonald
BLM Yuma Field Office Manager

April 11, 2016
date

Edward Randolph
Energy Division Director
California Public Utilities Commission

4/5/16
date

RECEIVED YUMA AZ
BLM YUMA FIELD OFFICE
2016 APR 11 AM 10 30

The authority and format of this instrument has been reviewed and approved for signature.

Appendix 1C Supplemental California Public Utilities Commission Information

Table of Contents

List of Tables

Abbreviations

AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
ACOE	Army Corps of Engineers
ADEQ	Arizona Department of Environmental Quality
ALUCP	Airport Land Use Compatibility Plan
ATCM	Airborne Toxic Control Measure
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measure
APP	Avian Protection Plan
AQM	Air Quality Management
AGFD	Arizona Game and Fish Department
AZGS	Arizona Geologic Survey
BACT	Best Available Control Technology
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BIOS	Biogeographic Information and Observation System
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
BOAMMP	Burrowing Owl Avoidance, Minimization. and Mitigation Plan
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALGreen	California Green Building Code
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCA	Candidate Conservation Agreement
CCR	California Code of Regulations
CDC	California Department of Conservation
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFG	California Fish and Game
CFR	Code of Federal Regulations
CGC	California Government Code
CHP	California Highway Patrol
CMA	Conservation Management Action
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO2e	Carbon Dioxide Equivalent
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRIT	Colorado River Indian Tribe
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CWMW	California Monitoring Workgroup
DA	Decision Area
DCH	Designated Critical Habitat
DCRT	DCR Transmission, LLC (DCRT)
DFA	Development Focus Area
DPM	Diesel Particulate Matter
DPV1	Devers-Palo Verde 500 kV No. 1 Transmission Project
DPV2	Devers-Palo Verde 500 kV No. 2 Transmission Project
DR	Demand Response
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substance Control
DWR	Department of Water Resources
EA	Environmental Assessment
ECP	Erosion Control Plan

EDR	Environmental Data Resources Inc.
EE	Energy Efficiency
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMF	Electromagnetic Fields
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAO	Food and Agriculture Organization
Farmland	Farmland of Statewide Importance, National Resource Conservation Service Farmland, Prime Farmland Unique Farmland, or Williamson Act Farmlands
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
FMP	Field Management Plan
FPP	Fire Prevention Plan
GHG	Greenhouse Gases
GHP	Gross Horsepower
GIS	Geographic Information Systems
GO	General Order
GWh	Gigawatt hours
FPP	Fire Prevention Plan
HAP	Hazardous Air Pollutants
HCP	Habitat Conservation Plan
HI	Hazard Index
hp	Horsepower
HPTP	Historic Properties Treatment Plan
HRMMP	Habitat Restoration, Mitigation, and Monitoring Plan
IB	Information Bulletin
IEEE	Institute of Electrical and Electronics Engineers
IP	Individual Permit
IPaC	Information for Planning and Conservation

KOP	Key Observation Points
kV	Kilovolt
LF	Load Factor
LOS	Level of Service
LPMH	Liters Per Machine Hour
LSA	Lake and Streambed Alteration
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MDP	Monitoring Discovery Plan
MGD	Million Gallons Per Day
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
MOU	Memorandum of Understanding
mph	Miles Per Hour
MRZ	Mineral Resource Zone
MSDS/SDS	Material Safety Data Sheets
MTCO2e	Metric Tons Carbon Dioxide Equivalent
MTR	Military Training Routes
MW	Megawatt
MWD	Metropolitan Water District
NAAQS	National Ambient Air Quality Standards
NBBMP	Nesting Bird and Bat Management Plan
NCCP	Natural Community Conservation Pan
NECO	Northern and Eastern Colorado Desert Coordinated Management Plan
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NFWF	National Fish and Wildlife Foundation
NHPA	National Historic Preservation Act

NOA	Naturally Occurring Asbestos
NOC	National Operations Center
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSR	Noise Sensitive Receptors
NWP	Nationwide Permit
NWR	National Wildlife Refuge
O&M	Operation and Maintenance
OHV	Off-Highway Vehicle
PA	Programmatic Agreement
PEA	Proponents Environmental Assessment
PFYC	Potential Fossil Yield Classification
PGA	Peak Ground Acceleration
PG&E	Pacific Gas and Electric
PM	Particulate Matter
PRC	Public Resources Code
Project	The proposed Ten West Link Transmission Line Project
PSD	Prevention of Significant Deterioration
RCCAP	Riverside County Climate Action Plan
RCFD	Riverside County Fire Department
REA	Resource Equivalency Analysis
RIPWET	Riparian Wetland and Wetland Vegetation Types and Associated Species
ROD	Record of Decision
RMP	Resource Management Plan
ROW	Right-of-way
RV	Recreational Vehicle
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
Scoping Plan	Climate Change Scoping Plan
SCS	Series Compensation Station

SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SPCC	Spill Prevention, Control, and Countermeasures Plan
SWCC	Southwest Coordination Center
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxics Air Contaminant
TCP	Traditional Cultural Property
TCR	Tribal Cultural Resource
TES	Technical Environmental Study
TWL	Ten West Link
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
U.S.	United States
USDA	United State Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
VOC	Volatile Organic Compound
VPL	Variance Process Land
VRM	Visual Resource Management
WEAP	Worker Environmental Awareness Program
WECC	Western Electricity Coordinating Council
WOUS	Waters of the United States
WQC	Water Quality Certification

1.0 INTRODUCTION

DCR Transmission, LLC (DCRT) filed a right-of-way (ROW) application (SF-299) with the Bureau of Land Management (BLM) on September 14, 2015 to construct, operate, maintain, and decommission an electric transmission project in western Arizona and eastern California. The Ten West Link (TWL) Transmission Line Project (the Project) would consist of a 500 kilovolt (kV) transmission line traversing approximately 114 miles within California and Arizona, 16.75 miles of which are located in California.

On April 11, 2016, the BLM and California Public Utilities Commission (CPUC) entered into a Memorandum of Understanding (MOU; Appendix 1B) whereby the BLM will serve as the Lead Agency under the National Environmental Policy Act (NEPA), coordinating with the CPUC, acting as a cooperating State agency. As the NEPA Lead Agency, the BLM will oversee the preparation of an Environmental Impact Statement (EIS). Consistent with the MOU, the CPUC may rely on the EIS and its appendices to make subsequent discretionary decisions pursuant to California Environmental Quality Act (CEQA) Guidelines (Section 15221). As NEPA and CEQA provide different requirements, this appendix is intended to focus on CEQA requirements and the CEQA analysis that is expressly limited to California but is not and should not be considered a separate and distinct CEQA document (i.e. Mitigated Negative Declaration [MND] or an Environmental Impact Report [EIR]), as the CPUC has not deemed DRCT's application complete and initiated formal environmental evaluation under CEQA (Section 15060(b)). As specified in the MOU, if the level of detail included in the EIS and its appendices fails to meet the CPUC's environmental review standards, the CPUC reserves the right to initiate its own formal environmental review pursuant to the CEQA Guidelines.

On October 12, 2016, DCRT filed an application for a Certificate of Public Convenience and Necessity (CPCN; A. 16-10-12) with the CPUC. The CPUC is still in the process of reviewing DCRT's CPCN application, which contains a request to waive the requirement under Rule 2.4 and General Order 131-D that DCRT provide a Proponents Environmental Assessment (PEA) as part of their application. The CPUC has yet to rule on DCRT's waiver request; therefore, the CPUC does not have a complete application that would allow them to initiate an independent environmental review pursuant CEQA or participate in a joint environmental review pursuant to Section 15222 of the CEQA Guidelines.

The BLM is preparing an EIS to satisfy their NEPA requirements and for use by other Federal agencies, as applicable. In cooperation with the CPUC, as outlined in the MOU, the BLM has produced this appendix to bolster the environmental impact discussion found in the TWL EIS to clearly address environmental issues that are unique to CEQA. To do so, this analysis relies on:

- The baseline environmental information found in Chapter 3 of the EIS and the TWL Technical Environmental Study (TES) (BLM 2019);
- The resource-specific environmental impact analysis found in Chapter 4 of the EIS and TES;
- The applicant's technical reports; and

- CPUC's comments on the Draft EIS, including this appendix, which address the environmental impact criteria found in Appendix G of the CEQA Guidelines.

As stated in the MOU, "CPUC Will: (1) As the cooperating State agency, be responsible to ensure that the EIS is in compliance with all requirements of CEQA and will be responsible for the scope and content of the EIS that relates to all necessary aspects of CEQA." This appendix incorporates the environmental analysis conducted in the EIS by reference, while providing supplemental analysis needed to address issues that may be unique to CEQA. This includes describing those environmental effects resulting from Project implementation identified in Chapter 4, Environmental Impact Analysis that may be considered significant and that cannot be mitigated to a less than significant level under CEQA. The analysis also identifies cumulative impacts, the potential to foster economic or population growth either directly or indirectly in the Project study area and surrounding environment, and an environmentally superior alternative.

Should the CPUC decide to issue a CPCN based on environmental analysis presented in the EIS, pursuant to Section 15221 of the CEQA Guidelines, the MOU provides for the CPUC's continued involvement during the Project's construction and operation phases. This involvement includes, but is not limited to, enforcement of Mitigation Measures (MMs) presented in the Mitigation Monitoring and Reporting Program (MMRP; Section 6.0).

1.1 CEQA SIGNIFICANCE DETERMINATION

One of the major structural differences between environmental analysis under CEQA and the NEPA analysis found in the EIS is the use of significance criteria during the environmental impact review. The significance criteria used for this analysis of environmental impacts are based on Appendix G of the CEQA Guidelines, as well and input from Cooperating Agencies, such as the CPUC. The criteria serve as a benchmark for determining if the Project would result in significant impacts when evaluated against the baseline conditions established in the EIS and TES. According to the CEQA Guidelines (Section 15382), a "'significant effect on the environment' means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project." The impact analysis for each environmental factor evaluated in Section 2.0 outlines the significance criteria that will be evaluated, provides an analysis of each factor posed in the form of a question, and concludes with a statement that clearly outlines if significant impacts would occur under a given criterion.

1.2 MITIGATION MEASURES

The function of MMs under CEQA differs from the function of MMs in the EIS. For instance, in the EIS, mitigation can be applied to any potentially adverse effect, where feasible, regardless of the severity or duration of the effect. Under CEQA, MMs are applied to reduce potential environmental impacts to less than significant levels (Section 15126.4 (a) 1). Under CEQA, a MM must be a specific, enforceable, feasible action that can be shown to reduce significant impacts (Section15126.4 (a) 2). The effectiveness of the measure should be demonstrable and capable of being monitored with specific performance standards. Unlike NEPA, MMs under CEQA are only applied to avoid or reduce impacts that would otherwise be significant (Section 15126.4 (a) 3).

Project-related environmental impacts can also be reduced or avoided through design features, Applicant-Committed Environmental Protection Measures (APMs), and BLM stipulated Best Management Practices (BMPs) that are required by current design standards and guidelines or are already part of ordinary operating procedures. DCRT has included APMs as part of the Action and Action Alternatives as described in the EIS, and applicable BLM BMPs have also been identified; such measures are described in Appendix 2A of the EIS. A number of these measures were identified or developed based on Conservation and Management Actions (CMAs) from the California Desert Conservation Area (CDCA) Plan. The CMAs that are applicable to the Project are listed in Appendix 2C of the EIS, where they are cross-referenced with the APMs and BMPs that address them. The CMAs are also incorporated into this analysis.

If after the incorporation of design features, APMs, and BMPs, a potential impact would result, this analysis identifies CEQA-specific MMs to reduce the impacts of the Project to a level below the "significant" threshold. The CEQA-specific measures are intended to bolster and clarify the underlying APMs, BMPs, and CMAs. For portions of the Project in California, the Applicant will be held to the standards outlined in the CEQA-specific measures, as opposed to the underlying APMs, BMPs, and CMAs. Unless otherwise specified, the CPUC would be responsible for enforcing the CEQA-specific measures. An MMRP is included in Section 6.0 of this Appendix. The MMRP summarizes the CEQA-specific MMs, APMs, BMPs, and CMAs; assigns a responsible party for enforcement of each measure; identifies when a given measure is necessary; and defines success criteria for each measure.

1.3 ALTERNATIVES

This analysis provides an environmental review of alternatives to the Project, based on the reasonable range of alternatives discussed in the EIS, refined by the significant impacts identified below. The alternatives discussion in this analysis focuses on reducing or avoiding potentially significant impacts that would result from the Project through implementation of an alternative. Additionally, this analysis compares the environmental advantages and disadvantages of the Project with those of the alternatives, and identifies an Environmentally Superior Alternative, pursuant to CEQA (Section 15126.6).

In addition to the No Action Alternative required under NEPA, the CPUC Section 1002.3 requires that the CPUC consider cost-effective alternatives to transmission facilities, referred to as "no wires" alternatives, when evaluating Project applications for a CPCN. Alternatives that meet the CPUC's "no wires" mandate include some combination of programs such as Demand Response (DR) and Energy Efficiency (EE); generation and storage and are only described and considered in this appendix and not in the EIS.

A comparison of environmental impacts, by alternative, is provided in impact summary tables in Chapter 2 and Appendix 2 of the EIS and described by resource in Chapter 4 and Appendix 4 of the EIS. The Alternatives Section (Section 4.0) of this appendix summarizes impact determinations, as outlined in the CEQA Guidelines, by resource, for both the Project and its action alternatives.

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2.0 ENVIRONMENTAL ANALYSIS

This section contains an evaluation of each environmental factor outlined in Appendix G of the CEQA Guidelines. The following impact analysis is largely based on the Environmental Setting and Regulatory Overview Sections found in Chapter 3 of the EIS and the TES and incorporates background material from the EIS and TES by reference, as appropriate.

As outlined in the EIS, for those resource areas where impacts will not be reduced to less than significant thresholds after the incorporation of design features, APMs, BMPs, and CMAs, CEQA-specific MMs will be implemented.

2.1 AESTHETICS

This section describes the impacts to aesthetic resources that could potentially occur during construction, operation, and decommissioning of the Project in terms of CEQA significance thresholds disclosed below in Section 2.1.4. As disclosed in Section 4.18 of the TES (BLM 2019), construction and operation of the Project could result in changes to the aesthetic character of the surrounding area. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS. However, impacts have been determined to be less than significant with mitigation incorporated.

2.1.1 Thresholds and Methodology

The Project's effects are compared to CEQA Guidelines "Thresholds of Significance" to determine whether the Project would result in a significant change (Section 15065, 15126, and Appendix G). The analysis relies on existing conditions and proposed activities described in the TES, specifically: identification of important visual resources in the vicinity of the portion of the Project within California based on review of applicable planning documents; existing views toward the Project site from representative views, selected in part based on review of applicable planning documents and identification of sensitive visual receptors; and photo-simulations of selected views showing the Project.

2.1.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the proposed Project applicant. In addition, the BLM would require implementation of BMPs, which are intended to further minimize Project impacts. The Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to aesthetics under CEQA. Within the California portion of the Project, "visually sensitive areas" refer to areas adjacent to scenic roadways, designated or eligible. Interstate 10 and California State (State) Route 95 within the Palo Verde Valley have been identified by Riverside County for potential future nomination as scenic highways (Riverside County 2015a). The APMs and BMPs related to aesthetics referring to visually sensitive areas are referring to lands adjacent to these roadways.

- **APM AES-01: Vegetation Removal and Grading.** During Project construction activities, grading and the amount of existing vegetation cleared from the route would be kept to the minimum required for access by Project construction as much as practicably possible. This approach is further described in the BIO-14. Grading would occur as minimally as practicable and would follow the existing land contours as much as possible.

- **APM AES-02: Work Area Reclamation.** On completion of the Project, all construction material and debris from the permanent ROW and temporary staging areas would be removed and the areas restored. All work areas, and areas around new transmission structures, would be re-graded to previous land contours and re-vegetated to and restored them to an appearance that would blend into the overall landscape context. This approach is further described in the BIO-15 to as close to pre-construction conditions as feasible.

- **BMP AES-02: Work Area Reclamation.** Work area reclamation would include pulling and tensioning sites; all disturbed work areas associated with the Project.

- **BMP AES-04: Visual Contrast.** Color treatment of transmission structures would be applied in all areas deemed necessary by the BLM. The BLM would select/approve the color treatment to be applied under AES-04. Color treatment would be applied to Project components, such as the Series Compensation Station (SCS) and fencing. All conductor would be non-specular, and all structures, whether color treated or not, would have a dull, non-reflective surface.

- **APM AES-05: Location.** Collocate the transmission line as close as possible to existing transmission lines of similar size and design (while maintaining the required 250-foot setback) to minimize the overall visual impact of the Project on the surrounding areas. Keeping the proposed transmission line within the same general corridor as existing transmission lines would reduce the spread of visual impacts from areas previously not affected. Collocating with existing transmission lines would also reduce the need to construct new access roads and their associated visual impacts. (Captures BLM BMP for Reducing Visual Impacts of REFs 6.2.10 – Collocate Linear Features in Existing ROWs or Corridors)

- **APM AES-06: Siting and Laydown Areas.** The Project will avoid siting, staging and laydown areas in visually sensitive areas to the extent practicable. Staging areas would be located close to transportation access points and would be sited to take advantage of previously disturbed areas to the extent practicable. Staging areas would be located close to transportation access points and would be sited to take advantage of previously disturbed areas to the extent practicable.

- **BMP AES-06: Siting and Laydown Areas.** Additionally, AES-06 would apply to all Project work areas. Also, work areas would be located to minimize impacts, including but not limited to biological and visual.

- **BMP AES-07: Avoid Siting Linear Features in the Centers of Valley Bottoms and on Ridgetops.** The eye follows strong natural lines in the landscape, and these lines

and associated landforms can "focus" views on particular landscape features. For this reason, linear facilities associated with renewable energy projects, such as transmission line ROWs, should be sited to avoid running across the centers of valley bottoms, and to avoid ridgetop bisection (i.e., routing the ROWs perpendicular to and over ridgelines).

- **BMP AES-08: Avoid Skylining.** "Skylining" of transmission/communication towers and other structures should be avoided. Transmission/communication towers and other structures should not be placed on ridgelines, summits, or other locations where they would be silhouetted against the sky. Skylining draws visual attention to the Project elements and can greatly increase visual contrast. Siting should take advantage of opportunities to use topography as a backdrop for views of facilities and structures to avoid skylining. Roads may be less visible if located along ridgetops, but if they are located on the ridge face, they can be highly visible because of increased cut, fill, and side cast material.

- **BMP AES-09: Site Linear Facilities along Natural Lines within the Landscape.** Siting of facilities, especially linear facilities (e.g., transmission lines, pipelines, roads), should take advantage of natural lines within the landscape (e.g., natural breaks in the landscape topography, the edges of clearings, or transitions in vegetation). Siting of facilities on steep slopes should be avoided. Siting linear facilities along naturally occurring lines in the landscape can reduce apparent contrast through repetition of the line element or through combination of multiple line elements into a single line element. Facilities sited on steep slopes are often more visible (particularly if either the project or viewer is elevated); they may also be more susceptible to soil erosion, which could also contribute to negative visual impacts.

- **BMP AES-10: Use Monopole, Guyed, and Lattice Electric Transmission Towers Appropriately.** Consideration should be given to the appropriate choice of monopoles versus guyed or lattice towers for a given landscape setting. Lattice or guyed towers are less visually obtrusive on the rural landscape than monopoles, especially when placed half a mile or more from Key Observation Points (KOPs) and against a landscape backdrop. When transmission towers are placed within a half mile or less from KOPs, then monopoles would occupy a smaller field of view than lattice towers. Monopoles are often more appropriate within built or partially built environments, while lattice or guyed towers tend to be more appropriate for less-developed rural landscapes, where the latticework would be more transparent against natural background textures and colors. Where transmission facilities are to be collocated in ROWs or corridors, and the existing ROW or corridor has either lattice towers only, guyed towers only, or monopoles only, the same tower type should be selected for new transmission facilities within the ROW/corridor.

- **BMP AES-11: Use Air Transport to Erect Transmission Towers.** In areas of the highest visual sensitivity, air transport capability should be used to mobilize equipment and materials for clearing, grading, and erecting transmission towers. The use of air transport capability preserves the natural landscape conditions between tower locations and may reduce the need for construction roads.

- **BMP AES-12: Reclamation to Reduce Visual Impacts.** The Reclamation Plan for the Project would include measures designed to reduce long-term impacts to visual resources.

- **BMP AES-13: Shifts in Alignment to Reduce Visual Impacts.** The specific location of the Project within the study area would be determined based on micrositing of Project components and new disturbance associated with access and work areas to reduce, minimize, or eliminate visual impacts.

- **APM AES-15: Lighting.** Limited lighting would be used during night construction to ensure safe working conditions while limiting the overall lighted area. To the extent practicable, lighting would be directed in a downward position to minimize impacts to night sky.

2.1.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to aesthetics are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-VRM-1.** Manage visual resources in accordance with the Visual Resource Management (VRM) Classes shown on Figure 9 (See CDCA Plan).

- **CMA LUPA-VRM-2.** Ensure that activities within each of the VRM Class polygons meets the VRM objectives described above, as measured through a visual contrast rating process.

- **CMA LUPA-VRM-3.** Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require Resource Management Plan (RMP) amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other BMPs to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for reducing visual impacts see the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on Bureau of Land Management-Administered Lands"*, or the most recent version of the document or BMPs for VRM, as determined by BLM.

- **CMA DFA-VPL-VRM-1.** Encourage development in a planned fashion within Development Management Areas (DFAs) (e.g., similar to the planned unit development concept used for urban design—i.e., in-fill vs. scattered development, use of common road networks, Generator Tie Lines etc., use of similar support facility designs materials and colors etc.) to avoid industrial sprawl.

- **CMA DFA-VPL-VRM-2.** Development in DFAs and Variance Process Lands (VPLs) are required to incorporate visual design standards and include the best available, most recent BMPs, as determined by BLM (e.g. Solar, Wind, West Wide Energy Corridor, and Geothermal PEISs, the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", and other programmatic BMP documents).

- **CMA DFA-VPL-VRM-3.** Required visual resource BMPs. All development within the DFAs and VPLs will abide by the BMPs addressed in the most recent version of the document *"Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands"*, or its replacement, including, but not limited to the following:

  - Transmission:

    - Color-treat monopoles Shadow Gray per the BLM Environmental Color Chart CC001 unless a more effective color choice is selected by the local Field Office VRM specialist.

    - Lattice towers and conductors will have non-specular qualities.

    - Lattice Towers will be located a minimum of 3/4-mile away from KOPs such as roads, scenic overlooks, trails, campgrounds, navigable rivers, and other areas people tend to congregate and located against a landscape backdrop when topography allows.

- **CMA DFA-VRM-1.** Manage all DFAs as VRM Class IV to allow for industrial scale development. Employ BMPs to reduce visual contrast of facilities.

- **CMA DFA-VRM-2.** Regional mitigation for visual impacts is required in DFAs. Mitigation is to be based on the VRI Class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the activity area as it stands at the time the Record of Decision (ROD) is signed for the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA). Compensatory mitigation may take the form of reclamation of other BLM lands to maintain (neutral) or enhance (beneficial) visual values on VRI Class II and III lands. Other considerations may include acquisition of conservation easements to protect and sustain visual quality within the viewshed of BLM lands. A VRI Class II 1:1 mitigation ratio will be applied in DFAs.

2.1.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a Project would have significant impacts on the environment. Consistent with Appendix G, the Project would result in a significant environmental impact if it would:

a. Have a substantial adverse effect on a scenic vista?

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c. Degrade the existing visual character or quality of the site and its surroundings?

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

2.1.5 Aesthetics Analysis

Impact AES-1 - Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant – No Mitigation Required

There are no officially designated scenic vistas or overlooks in the Project area.

Scenic vistas are generally considered expansive views that afford unobstructed visibility of scenic resources or areas. Local planning documents call for the identification and conservation of skylines, view corridors, and outstanding scenic vistas within the County (Riverside County 2003), as well as the maintenance of existing views of the Mesa and Colorado River from roadways and public uses and other ROW upon the valley floor whenever feasible (City of Blythe 2007).

The Project would appear alongside the existing Devers-Palo Verde 500 kV No. 1 (DPV1) transmission line in views toward the Palo Verde Mesa and Colorado River from Interstate 10 and other locations within and in the vicinity of Blythe, including State highways, local roads, residential developments, and recreational areas. Some of the closest residences to the routes in the study area are houses in Blythe and recreational vehicles (RVs) in McIntyre County Park.

Appendix 3C in the TES (BLM 2019) includes visual contrast rating forms that describe existing conditions and conditions during Project operation for the portion of the Project within California. The western end of the study area near the Colorado River Substation is BLM-Administered Lands that are flat desert plain with deep sands between the Mule Mountains to the south and the McCoy Mountains to the north. Native vegetation in this portion of the desert plain is very sparse and homogenous, which does not contribute to scenic values in the area. The area offers broken views of distant rugged mountains in all directions.

The Project segments visible from Interstate 10 west of Blythe would appear within a broad desert landscape alongside a number of other transmission facilities, including the barely discernable DPV1 structures and the Colorado River Substation. The proposed structures would appear in elevated views against a desert floor backdrop and in views from the interstate against an intermittent, jagged mountain backdrop. They would appear as a series of detectable but

relatively small vertical, angular forms repeating across the desert valley, connected by undulating conductors, which would likely be barely discernable from this distance.

From views closer to Blythe, transmission structures visible across the horizon in views to the southeast would appear as minor encroachments upon the skyline, where the tops of proposed structures would seem to extend above the distant mountains. Views of the Project to the southwest would be obscured or intermittent in views. Alternative segments would appear further away from this area, relegating visibility to very low portions of the horizon. The Project would not substantially affect any expansive, long-distance views in the area.

In proximate viewing locations, the Project would shape the skyline, appearing above distant mountains. However, it would not appear as a substantial alteration to existing conditions, in which DPV1 transmission structures are currently prominently visible. In views from the interstate or within Blythe, the Project would appear absorbed into a broader agricultural or desert setting, which contains transmission infrastructure including DPV1, Colorado Substation, and numerous other utility transmission and distribution facilities. The Project's potential effects to this existing character is addressed below. With regard to scenic vistas, the Project would have a less than significant impact.

Impact AES-2 - Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact

According to the California Department of Transportation (Caltrans) Scenic Highway Mapping System for Riverside County, there are no officially designated State scenic highways in the Project area or from which the Project would be visible in long-distance views (Caltrans 2018).

The segments of Interstate 10 and State Route 95 within the Palo Verde Valley have been identified by Riverside County for potential future nomination as scenic highways (Riverside County 2015a). These roadways do not cross the Project route; Interstate 10 is approximately 2 miles north of Colorado River Substation and is further away from the majority of the Project route in Riverside County, and State Route 95 extends north from Interstate 10 just west of the Colorado River, over 4.5 miles north of the Project route. Potential effects of the Project to views from roadways to the north are addressed below.

Visual contrast rating analyses included in Appendix 3C of the TES (BLM 2019) state that Project segments would be intermittently or partially visible from Interstate 10 west of Blythe (KOP 55) and from Interstate 10 near its crossing of the Colorado River (KOP 41), which approximates views from the southernmost segment of State Route 95. In views from Interstate 10, Project structures would appear in elevated views against a desert floor backdrop and against an intermittent, jagged mountain backdrop. They would likely appear as a series of detectable but relatively small vertical, angular forms repeating across the desert valley, connected by undulating conductors, which would likely be barely discernable from the interstate for both Project and alternative segments. In views from State Route 95, where visible, the structures would appear along the horizon, within a broader collection of vertical features. Resources considered scenic with regard to State scenic highways are not detectable from these locations.

Further, Caltrans Scenic Highway Guidelines (Caltrans 2008) indicate that power lines not easily visible from the road are “minor” intrusions on scenic highways and that power lines which are visible, but which do not dominate scenic views are “moderate” intrusions. Therefore, there would be no impact to scenic resources within a State scenic highway.

Impact AES-3 - Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant with Mitigation

Section 3.18.3.7 in the TES (BLM 2019) describes the Project setting within California. The area through which the Project would pass is a landscape that transitions from river bluffs in the east to an agricultural floodplain south of Blythe, and eventually to the sparsely developed desert plain within which the Colorado River Substation is located. Visually, the western terminus of the Project area is characterized by the gradual decline in areas of visual interest; while the Colorado River corridor affords varied and sometimes scenic views, the agricultural lands are fairly uniform in appearance and the desert appears homogenous by comparison. Interstate 10 and the existing DPV1 transmission line are the area’s dominant linear features, visible within a broader area containing other transmission and distribution facilities generally aligned with the rectilinear road network that crosses the rural lands south and west of Blythe.

Evaluation in Appendix 3C of the TES (BLM 2019) of views from within Blythe indicate limited visibility or effects. Visitors to McIntyre Park (KOP 45) would see Project structures at some distance and structures would appear against an open sky and mountain backdrop, adjacent to and in front of the existing DPV1 Project. The Project structures would be identifiable against an open sky backdrop by visitors to Miller Park (KOP 48), but would, as view elements, be absorbed into the broader landscape, which includes numerous foreground features, very few of which are natural in appearance, and most of which are indicative of industrial and agricultural uses in the area. Residents along Lovekin Boulevard (KOP 51) would likely be able to discern intermittent segments of the Project, though it would appear beyond the existing DPV1 transmission line. From Interstate 10 near Blythe (KOP 55), Project structures would appear against an intermittent, jagged mountain backdrop, and would be seen as a series of detectable but relatively small vertical, angular forms.

Section 4.18.4.5 in the TES (BLM 2019) describes potential visual effects of the Project outside of Blythe. Given the mostly flat terrain and low degree of development outside of Blythe and portions of the interstate corridor, the Project would generally be visible in relatively long-distance views and could result in a potential impact to the existing visual character or quality of the surroundings prior to mitigation. However, it would appear as part of a landscape dedicated, to varying degrees, to energy generation and transmission. Along with the Colorado River Substation, numerous power plants (e.g., fossil fuel and solar-powered) are visible in the Project vicinity, as are additional transmission lines. With incorporation of MM VIS-CEQA-1, which includes implementing APM AES-05 and BMP AES-04, the Project would appear alongside, aligned with, and as close as possible to the existing DPV1 transmission line and would minimize visual contrast due to the use of non-reflective surfaces, thus reducing potential impacts to a less than significant level. The DPV1 H-frame and tangent lattice style structures are present in views from throughout the Project vicinity and are dominant features in close-in views of the transmission corridor.

MM VIS-CEQA-1 also includes implementation of BMP AES-10, which would result in tower types varying appropriately. Concurrent implementation of BMP BIO-19 under MM VIS-CEQA-1 would result in conductor bundles being in a horizontal, parallel configuration, and matching existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. Additionally, MM VIS-04 would be implemented in order to limit the height of structures to what is absolutely necessary for safety and operation. MM VIS-04 would effectively minimize skylining and reduce the need for beacons within the Project area. No guyed structures would be used at these locations. Therefore, where the Project would cross agricultural lands, beginning just west of the Colorado River and extending through the majority of Segment p-16, Project towers would be H-Frame lattice structures, which would closely match existing transmission structures. The three westernmost Segment p-16 towers would be self-supporting lattice structures. West of the agricultural area and extending the rest of the way to Colorado River Substation, Project structures would be mostly guyed-V structures. Therefore, impacts related to the tower heights would be less than significant with mitigation incorporated.

Transmission infrastructure is an established component of views within and toward the Project area, where DPV1 towers and conductors are prominent existing features. Development of a new transmission line could result in potential impacts if they do not match the existing visual character of the surrounding area. MM VIS-CEQA-06 would be incorporated into the Project and would include measures to use structure type to match the existing structures and reduce contrast with the exiting visual character of the area. Therefore, new structures would not substantially alter the existing visual character in the Project area because these new structures would be of similar type to existing structures and the Project would be more readily absorbed into the existing landscape. The Project towers and conductors would repeat the vertical and undulating horizontal elements in existing views toward the Project area. Therefore, impacts related to the placement of new structures matching the exiting visual environment would be less than significant with mitigation incorporated.

Further, implementation of APMs and BMPs through MM VIS-CEQA-1 would ensure that the Project would be consistent with management objectives for BLM-Administered Lands, which include VRI Class II and III lands and a DFA. Specifically, applicable CMAs would be addressed with implementation of: APM AES-05 (transmission line collocation; avoidance of staging and laydown areas in visually sensitive areas); BMP AES-13 (micrositing to reduce, minimize or eliminate visual impacts); BMP AES-10 (appropriate use of monopoles or guyed or lattice towers, based on landscape setting); BMP AES-04 (color treatment where necessary, and dull, non-reflective finish on all structures); BMP AES-07 (avoid siting across center of a valley bottom); BMP AES-08 (avoidance of skylining); and BMP AES-12 (reclamation to reduce visual impacts).

While the TES or underlying Visual Contrast Rating Forms do not use the term “scaring,” the TES does discuss the short- and long-term impacts of ground disturbance at structure bases and from access road construction, such as in Section 4.18.4.1, which effectively constitute scaring. To clarify, during construction, newly exposed rock or clearing of vegetation could result in long term land scaring, and thus a potential impact prior to mitigation, if not treated appropriately. As described in the TES, MM VIS-3 would be implemented and would require appropriate surface treatments to newly exposed rock and gravel and additional AMPs and BMPs implemented

through MM VIS-CEQA-1 would be required to reduce potential impacts related to the existing visual character of the site and surroundings from Project construction and operation. These would include APM AES-01 which would require minimization of grading and clearing of vegetation; APM AES-02/BMP AES-02 which would require removal of construction material and debris from Project areas and restoration of disturbed areas; APM AES-06/BMP AES-06 which would require avoiding the placement of staging areas in visually sensitive areas (i.e., areas adjacent to scenic roadways, designated or eligible), and instead siting staging areas near previously disturbed transportation access points; BMP AES-09 which would require sitting permanent linear facilities within existing natural lines within the landscape; and BMP AES-11 which would require the use of air transport to mobilize equipment in visually sensitive areas, thus requiring less need for construction roads. Implementation of MM VIS-CEQA-1 and MM VIS-3 would reduce visual impacts from Project construction and long-term changes in the existing visual character of the area to a less than significant level.

In summary, the Project would appear to expand slightly the footprint of an existing transmission corridor. The new structures and conductors, aligned with existing structures and conductors at the crossing of the Colorado River and appearing generally in tandem with existing facilities as they extend across desert landscapes and similar in style within the agricultural area, would intensify the presence of an already existing, prominently visible feature. As such, effects on the existing visual character or quality of the site and its surroundings would be less than significant with the implementation of MM VIS-CEQA-1, MM VIS-03, MM VIS-04, and MM VIS-06. These CEQA MMs would reduce potential effects of the Project on existing visual character or quality to less than significant levels.

Impact AES-4 - Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant with Mitigation

The Project would not be a new source of substantial light. Federal Aviation Administration (FAA) lighting or other lighting required for air traffic safety is not required for transmission structures in the proposed route. Any nighttime lighting associated with construction would be temporary and used in order to provide safe working conditions while limiting light spillover outside of the construction area. However, in order to ensure that impacts related to nighttime lighting associated with construction activities does not result in a significant impact to nearby sensitive receptors that may have views of construction activities, MM VIS-CEQA-1 would be required and would implement APM AES-15, which would ensure that any nighttime lighting required for construction activities, would be directed in a downward position to minimize impacts to night sky. MM VIS-CEQA-1 would effectively reduce potential impacts related to nighttime lighting from construction to a less than significant level.

Additionally, operational impacts associated with steel transmission structures are potential sources of glare, particularly in desert environments where insularity is typically high and long-distance lines-of-sight between sources of glare and potential viewers can be unobstructed. As such MM VIS-CEQA-1 would also be required in order to implement BMP AES-04, which would result in the use of flat, non-reflective finish structures to minimize reflectivity and reduce visual contrast. Implementation of BMP AES-04 through MM VIS-CEQA-1 would reduce potential effects related to glare to less-than-significant levels. Therefore, impacts related to light

or glare resulting from proposed Project construction and operation would be less than significant with mitigation incorporated.

2.1.6 Aesthetics Mitigation

The following MMs are among those included in Section 4.18.6 of the TES (BLM 2019) where they are presented as being required for compliance with the BLM VRM objectives and/or to reduce impacts to visual resources. Of those MMs, the following would apply to segments within California:

MM VIS-03: Apply surface treatments (such as Permeon, or an approved equal) to newly exposed rock and gravel to blend with surrounding rock face and minimize visual impact of attention-attracting disturbance

MM VIS-03 Implementation

Responsible Party: The Applicant shall ensure that appropriate surface treatment is utilized throughout ground disturbing activities to prevent long-term land scaring.

Timing: The use of surface treatments shall be utilized throughout any ground disturbing activities.

Mitigation Monitoring and Reporting Program: The Applicant shall verify that Permeon will be used throughout construction. If Permeon is not available, then the Applicant shall identify a suitable replacement treatment that is approved by the CPUC and BLM prior to any ground disturbing activities.

Standards for Success: Long-term land scaring is prevented during construction and the surface treatment shall blend with the exiting natural environment, not detract from the existing visual environment.

MM VIS-04: Limit height of structures to what is absolutely necessary for safety and operation in order to minimize skylining and reduce the need for beacons to protect dark sky resources and maintain astronomical viewing opportunities.

MM VIS-04 Implementation

Responsible Party: The Applicant shall be responsible for implementation of this measure during the design phase, to avoid design conflicts that could result in unnecessary heights of transmission lines.

Timing: Heights of structures shall be determined during the design phase, prior to construction.

Mitigation Monitoring and Reporting Program: The Applicant shall submit design plans to the CPUC who shall review the plans and approve heights. If heights are required that will include the use of night beacons; the Applicant shall incorporate these lighting requirements consistent with APM AES-15.

Standards for Success: Prevention of long-term impacts associated with unnecessary heights for the transmission lines and/or reduction of operational lighting impacts.

MM VIS-06: Use structure type to match existing structures and reduce form contrast.

MM VIS-06 Implementation

Responsible Party: The Applicant shall be responsible for implementation of this measure prior to construction, during the design phase, to avoid design conflicts that could result in Project structures that do not match the existing visual environment.

Timing: Structure type and finishes shall be determined during the design phase, prior to construction.

Mitigation Monitoring and Reporting Program: The Applicant shall ensure that structures are built to blend with surrounding structures (if any) including buildings, other transmission lines (such as monopole, guyed, or lattice electric transmission lines), and roadways which shall be consistent with BMP AES-10. Colors and finishes of Project structures shall consist of natural colors (i.e., browns and greys).

Standards for Success: Prevention of long-term impacts associated with structures standing out in the natural visual environment. Instead, any structures shall blend with the existing visual environment.

In addition to the above TES measures, the following CEQA MM has been developed to reduce and/or avoid aesthetics impacts:

MM VIS-CEQA-1: Implement Aesthetics Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.1.2 and 2.1.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. AMPs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to aesthetic and visual resources. These APMs, BMPs, and CMAs include; APM AES-01, APM AES-02, BMP AES-02, BMP AES-04, APM AES-05, APM AES-06, BMP AES-06, BMP AES-07, BMP AES-08, BMP AES-09, BMP AES-10, BMP AES-11, BMP AES-12, APM AES-15, CMA LUPA-VRM-1, CMA LUPA-VRM-2, CMA LUPA-VRM-3, CMA DFA-VPL-VRM-1, CMA DFA-VPL-VRM-2, CMA DFA-VPL-VRM-3, CMA DFA-VRM-1, and CMA DFA-VRM-2. If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with AMPs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts.

MM VIS-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

2.2 AGRICULTURE

This section describes the impacts to agricultural resources associated with the construction, operation, maintenance, and decommissioning of the proposed transmission line, substations, and ancillary facilities in terms of CEQA significance thresholds disclosed below in Section 2.2.4. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

As disclosed in Section 4.8.4 of the TES (BLM 2019), construction activities may temporarily disrupt agricultural activities and remove croplands, Natural Resource Conservation Service (NRCS)-classified Farmlands (Farmland), and Williamson Act Farmlands from production. Similarly, operation of the Project would remove agricultural, NRCS-classified Farmlands, and Williamson Act Farmlands from production during the life of the Project. The impacts to Prime Farmlands would be the same as during construction, and would occur within, not in addition to, the construction disturbance area. These effects would be long term, but minor because the actual acreage of Prime Farmlands affected would be substantially less than that available in the analysis area.

2.2.1 Thresholds and Methodology

Existing conditions described in Section 3.8 TES (BLM 2019) have been evaluated with regard to their potential to be affected by proposed Project construction, operation, maintenance, and decommissioning activities. The potential impacts associated with the proposed Project are evaluated on a qualitative and quantitative basis through a comparison of the anticipated Project effects on agricultural activities. The evaluation of Project impacts is based on professional judgment, analysis of Riverside County's agricultural resources polices, and the significance criteria established by Appendix G of the CEQA Guidelines.

2.2.2 Applicant Proposed Measures and BLM Best Management Practices

There are no APMs or BMPs applicable to agricultural resources.

2.2.3 Conservation and Management Actions

There are no CMAs applicable to agricultural resources.

2.2.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant impacts to agriculture and forestry if it would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation (CDC), to nonagricultural use.

b. Conflict with existing zoning for agricultural use or a Williamson Act contract.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) Section 12220(g)), timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined in California Government Code (CGC) Section 51104 (g)).

d. Result in the loss of forest land or conversion of forest land to non-forest use.

e. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use or conversion of forest land to non-forest use.

2.2.5 Agricultural Resources Analysis

Impact AG 1 - Convert Farmland as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use?

Less Than Significant – No Mitigation Required

As discussed in Section 3.8.3 of the TES (BLM 2019), the primary farming areas related to the Project area in California are in the Palo Verde Valley area of Riverside County. As noted in Section 3.8.3.3 of the TES, in California there are 2,330 acres of Farmland of Statewide importance and 4,009 acres of Prime Farmland within the Project area.

Potential impacts related to the conversion of prime, unique, or farmland of Statewide importance could occur if permanent Project features would remove farmland from future use. As evaluated in Sections 4.8.4 through 4.8.8 of the TES, construction impacts to agricultural lands for all zones would be less than significant, because the actual acreage of prime farmlands affected would be substantially less than that available in the analysis area.

Section 4.8.5.5 of the TES states that operational impacts to Prime Farmlands would be less than significant as the actual acreage occupied by support structures or access roads would be a less than three percent of the available farmlands. In addition, micrositing the transmission line should allow the Project to avoid crossing most fields with these features and reduce the potential for this type of disruption. If crossing a field is necessary, structures would be placed on the outside edges of the field or parallel to the rows, and diagonal field crossings would be avoided where possible.

As indicated in Section 3.8.3.3 of the TES, the Project would temporarily affect 121 acres of agricultural land in California. The areas of temporary impact would be returned to pre- Project uses and would be available for agricultural use following construction. Staging of materials requires temporary vegetation removal and minor surface smoothing but would not substantially change the soil conditions or quality of the site. Temporary impacts to FMMP-designated Farmland would not convert designated Farmland to a nonagricultural use because staging activities and other temporary impacts by their nature do not involve any permanent land conversion. None of the staging areas of temporary impact are currently used for agricultural activity; therefore, impacts would be less than significant. No mitigation is required.

A total of approximately 34 acres of agricultural lands would be permanently converted to nonagricultural use. However, most of these areas are currently located within existing ROW and are not currently in conflict with agricultural operations due to State laws regulating electrical infrastructure and easement restrictions. Transmission lines are generally viewed as a compatible use with farmlands since they don't require conversion of large portions of farmland. Specifically, as stated in the CGC Section 51238, the erection, construction, alteration, or maintenance of any electrical facilities, including transmission lines, are considered a compatible use within any agriculture preserve.

Therefore, since the Project requires the permanent conversion of less designated Farmland than the remaining designated farmland in the Project area and transmission lines are considered a compatible use, the Project’s potential to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use is considered less than significant and no mitigation is required.

Impact AG 2 - Conflict with existing zoning for agricultural use or a Williamson Act contract?

Less Than Significant – No Mitigation Required

As noted in Section 4.8.4.5 TES (BLM 2019), the majority of the Colorado River and California Zone is agricultural land. Of these agricultural lands, approximately 1,263 acres are under Williamson Act lands and have the status of Agricultural Reserves. Chapter 12.16 of the Riverside County Zoning Code provides the regulatory framework for Agricultural Preserves. Compatible uses with an agricultural reserve under both the Riverside County Zoning Code and CGC Section 51238 include gas, electric, water and communication utility facilities, and public service facilities of like nature operated by a public agency or mutual water company (Riverside County 1988). Therefore, the transmission lines and associated Project features would not conflict with the existing zoning for agriculture use and Williamson Act contract lands.

The Project would involve temporary and permanent impacts to land zoned or designated for agricultural activities as determined by the Riverside County Zoning Ordinance and General Plan. Construction would temporarily impact approximately 98 acres of land with the Riverside County land use designation of agriculture and approximately 18 acres with the Riverside County land use designation of Open Space Rural. Areas of temporary impacts would be available for agricultural activities following construction. Temporary impacts to land with an agricultural land use and zoning designation would not conflict with zoning for agricultural use and impacts would be less than significant. No mitigation would be required.

Operation and maintenance of the Project would permanently impact approximately 6 acres of the agriculture land use and approximately 3 acres of Open Space Rural. The Project would have approximately 22 acres of temporary impacts and approximately one acre of permanent impacts to lands zoned agriculture. While the Project is close to the City of Blythe it is outside of the City's planning boundaries and the Project would have no impact on agricultural lands within the City planning area.

While the Project would have permanent impacts to Riverside County agriculture lands (including agricultural zoned areas and agricultural land uses), temporarily disturbed agriculturally zoned lands would be restored upon Project completion and transmission lines are a compatible use under both the Riverside County Zoning Code and CGC Section 51238. Therefore, impacts related to conflicting with existing zoning for agriculture and Williamson Act contract lands would be less than significant.

Impact AG 3 - Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No impact

In California, the zoning designations along the Project include agriculture and rural residential. This condition precludes the possibility of conflicts with forest land zoning as a result of Project implementation. The Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by Public Resources Code Section 4526)), or timberland zoned Timberland Production (as defined by CGC Section 51104(g)). No impacts would occur.

Impact AG 4 - Result in the loss of forestland or conversion of forestland to non-forest use?

No impact

The Project would not result in the loss of forest land or conversion of forest land to non-forest use. The Project would not be located on land zoned specifically as either forest land or timberland. The Project would be located primarily on Federal lands in Arizona and agricultural lands in California. There is no commercial forestry or timber production industry within Riverside County (Riverside County 2014). This condition precludes the possibility of conversion of forest land to non-forest use. No impacts would occur.

Impact AG 5 - Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

Less than Significant with Mitigation

The Project is surrounded by lands zoned for agriculture. However, the Project would not introduce a non-agricultural use that is sensitive to or incompatible with agricultural operations. The proposed transmission line would not remove any barriers to development or cause changes to water supply, drainage, or other resources.

The Project has the potential to temporarily interfere with active agricultural operations during staging of materials and conductor stringing operations. Construction could temporarily impact existing operations at agricultural uses from use of the staging yard during the estimated two-year construction period and during overhead conductor stringing. However, this conversion would be temporary and would not result in a permanent conversion of agricultural land. Therefore, temporary impacts related to changes in the existing environment which could convert farmland to non-farmland use would be less than significant.

Section 4.8.5.5 of the TES summarizes potential impacts to agriculture from Project operations, mentioning crop production that involves mechanical irrigation, automated farming methods, or farming equipment. Comments provided by the Metropolitan Water District (MWD) of Southern California on the DEIS (Appendix 8 of the EIS), specifically note impacts to agricultural lands that are within the MWD fee properties or other private properties currently enrolled in a Fallowing Program could occur during Project construction activities and operation, and thus, have the potential to result in a significant impact prior to mitigation. Potential impacts to these lands could include increases in soil erosion or compaction, creation or introduction of weeds or other pests, interference of movement of agricultural equipment and activities, prevention of consolidation of farm fields or subdividing lands, or restriction of Palo Verde Irrigation District operations within canal and drains. Specifically, the placement of Project features within lands enrolled in a Fallowing Program could result in the potential of all or a portion of these lands to become permanently non-producing which would affect the remainder of the lands within such Fallowing Program. Therefore, implementation of MM AG-CEQA-1 would be incorporated in order to require consultation and coordination with the MWD of Southern California and CPUC to avoid and reduce potential impacts resulting from Project work within MWD fee properties or properties enrolled in a Fallowing Program to a less than significant level. As such, impacts related to these agriculture lands would be less than significant with mitigation incorporated.

Some of the impacted areas would revert back to agriculture upon Project decommissioning. The Project would not involve other changes in the existing environment which may result in the conversion of other agricultural lands to non-agricultural uses. Therefore, the overall impacts with regard to conversion of farmlands due to other changes in the exiting environment would be less than significant with mitigation incorporated.

2.2.6 Agricultural Resources Mitigation

Additionally, the following CEQA MMs has been developed to reduce and/or avoid agricultural impacts:

MM AG-CEQA-1: Coordination with the Metropolitan Water District of Southern California.

The Applicant shall consult with the MWD of Southern California for any Project work occurring within lands under this jurisdiction of the MWD of Southern California during the development of the Project design phase. If Project work shall occur within lands designated as under the jurisdiction of the MWD of Southern California, the Applicant will work with the MWD of Southern California to locate transmission structures adjacent to existing electrical infrastructure to consolidate potential obstructions to the movement of agriculture machinery or other agricultural activities, locate access roads and staging areas away from agricultural lands and operations, and limit the use of pesticides near agricultural lands. Further, if dust control measures (see MM AQ-CEQA-1 under Section 2.3.7 below) or weed control measures (see MM VEG-CEQA-1 under Section 2.4.6 below) are required for Project work occurring within MWD of Southern California's jurisdiction, these measures will also require review and approval by the MWDSC for work within agricultural lands under their jurisdiction. Specifically, if Project work will occur within MWD of Southern California lands that are used for farming organic crops, chemicals used within these lands shall be prohibited. The Applicant will work with the MWD of Southern California to identify these lands during the Project design phase and avoid use of chemicals through weed control in these lands.

The Applicant shall inform the MWD of Southern California 30-days prior to the start of construction activities that may occur within agricultural lands under the jurisdiction of the MWDSC and follow with a report submitted to the MWD of Southern California upon completion of the construction activities within these lands. Successful implementation of this MM shall prevent short and long-term impacts to agricultural lands under the jurisdiction of the MWD of Southern California.

MM AG-CEQA-1 Implementation

Responsible Party: The Applicant shall be responsible for consultation and coordination with MWD of Southern California.

Timing: Consultation with MWD of Southern California shall occur during the design phase of the Project and notification of construction shall be given to MWD of Southern California 30-days prior to the start of construction activities that will occur within agricultural lands under the jurisdiction of MWD of Southern California.

Mitigation Monitoring and Reporting Program: The Applicant shall keep a record of consultation with MWD of Southern California, including during design and Project implementation. If any further measures are identified and/or actions are taken for construction work within agricultural lands under jurisdiction of MWD of Southern California, these measures and/or actions will be documented and kept on file by the Applicant.

Standards for Success: Prevention of short- and long-term impacts associated with agricultural lands under the jurisdiction of the MWD of Southern California.

2.3 AIR QUALITY AND CLIMATE CHANGE

This section describes the impacts to air quality associated with the construction, operation, maintenance, and decommissioning of the Project in terms of CEQA significance thresholds disclosed below in Section 2.3.4 below. As disclosed in Section 4.2 of the TES (BLM 2019), impacts to air quality would occur from the emissions of criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gases (GHGs); however, no air quality standards would be exceeded. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

As concluded in Section 4.2.4.1 of the TES, Project construction and, to a lesser extent, operation would result in some increase to ambient air pollutant concentrations, even though construction emissions would be temporary in nature. The primary indicators for determining whether or not the Project emissions would result in a significant impact to air quality are as follows:

- Estimated Project emissions exceed conformity de minimis thresholds; and/or
- The increase in ambient pollutant concentrations for a particular area as a result of the Project emissions would result in an exceedance of the National Ambient Air Quality Standards (NAAQS) for that area.
- The TES determined that these types of significant impacts could result from:
- Fugitive dust from earth-moving associated with construction activities in support of the upgrade and new build of the transmission line, series compensation station, and ancillary facilities;
- Fugitive dust from vehicle movement on paved and unpaved roads accessing various segments of the line route;
- Engine exhaust (tailpipe emissions) from both on-road and non-road vehicles/equipment, including construction worker commuting, delivery of materials and supplies, and onsite construction activities;
- Emissions from concrete batch plants used to mix the concrete needed for structure and equipment foundations.

2.3.1 Thresholds and Methodology

The Mojave Desert Air Quality Management District (MDAQMD) has developed these Guidelines and has dedicated assets to reviewing projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any Federal attainment plan. The MDAQMD Guidelines are intended to provide background information and guidance on the preferred analysis approach as well as provide significance thresholds for evaluation under CEQA. All emissions would be created in Riverside County

only, and therefore, a formal evaluation would not be required; there is potential for emissions to reach Imperial County.

Pursuant to the MDAQMD Guidelines and thresholds (Table 2.3-1), any project involves significant impacts if it triggers or exceeds the most appropriate evaluation criteria. The MDAQMD will clarify upon request which threshold is most appropriate for a given project; in general, the following emissions comparison (criteria number 1) is sufficient:

a. Generates total emissions (direct and indirect) in excess of the thresholds given in Table 2-1 below;

b. Generates a violation of any ambient air quality standard when added to the local background;

c. Does not conform with the applicable attainment or maintenance plan(s);

d. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

Table 2.3-1 MDAQMD Thresholds of Significance

POLLUTANT	SIGNIFICANCE (TONS/YEAR)	SIGNIFICANCE (LBS/DAY)
CO	100	548
NO_x	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
SO_x	25	137
VOC	25	137
CO_2e	100,000	548,000

Source: MDAQMD 2016

A significant project impact must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that a multi-phased project (such as project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

A portion of the Project is located within Riverside County. As part of its General Plan Amendment, Riverside County adopted a Climate Action Plan in December 2015 to address global climate change and consistency with State Assembly Bill (AB) 32. Riverside County established a goal to reduce their greenhouse gas inventory 15 percent below 2008 levels by the year 2020. Riverside County also established a screening threshold for CEQA projects of 3,000

Metric Tons Carbon Dioxide Equivalent ($MTCO_2e$). This is the threshold that the County determined would result in less than significant impacts to climate change provided the Project incorporated energy efficiency five percent greater than the 2010 Title 24 requirements and water conservation measures that match the California Green Building Code (CALGreen) in effect as of January 2011, as applicable.

For purposes of this analysis, the 3,000 $MTCO_2e$ screening threshold will be applied to the Project for the Riverside County portion of the Project.

2.3.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. APMs and BMPs addressing air quality impacts are outlined below and are applied to Project by MM AQ-CEQA-1. These APMs and BMPs are based on the Project APMs and BMPs described in EIS Appendix 2A; some have been revised to ensure they provide adequate mitigation for CEQA purposes under MM AQ-CEQA-1. The following APMs and BMPs would apply to the portion of the Project located within California and have therefore been applied to mitigate significant impacts to air quality and GHGs under CEQA.

- **APM AQ-01: Fugitive Dust (quantitatively included in the emissions estimate).** The following control measures would be implemented, as applicable, to reduce PM10 and PM2.5 emissions during construction, in conjunction with an Erosion, Dust Control, and Air Quality Plan and Fugitive Dust Control Plan for the Project.

Basic control measures

The following measures would be implemented at all construction sites:

- Water active construction areas sufficiently to minimize fugitive dust.
- Water for dust control would include three 2,000-gallon water trucks that would water access roads twice a day, 5 days a week, for 18 months.
- Cover trucks hauling soil, sand, and other loose materials and require all trucks to maintain at least 6 inches of freeboard.
- Pave, apply water, or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites to minimize fugitive dust.

Enhanced control measures

In addition to the "basic" control measures listed above, the following control measures may be implemented at all construction sites greater than 4 acres:

- Water, hydroseed, or apply nontoxic soil stabilizers to inactive construction areas to minimize fugitive dust.
- Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles.

- Limit traffic speeds on unpaved roads.
- Install sandbags or other erosion-control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible, consistent with seasonal survival considerations.

Optional control measures

Depending on the extent of dust generation, implementation of the following APMs may occur at larger construction sites, near sensitive receptors (residences or other occupied buildings, parks, or trails within 1,000 feet of earthmoving operations that are substantial; for example, more than excavation for tower foundations), or in situations which for any other reason may warrant additional emissions reductions:

- Install wheel washers for all existing trucks or wash off the tires or tracks of all trucks and equipment leaving the site.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour (mph).
- Limit the area subject to excavation, grading, and other construction activity at any one time.

- **BMP AQ-01: Dust Palliatives (quantitatively included in the emissions estimate).** Dust palliatives would be applied, in lieu of water, to inactive construction areas (disturbed lands or soil stockpiles that are unused for 14 consecutive days). Dust palliatives would be chosen by the Dust Control Site Coordinator and or construction contractor. Dust palliatives would be environmentally safe; comply with Federal, State, and local regulations; and would not produce a noxious odor or contaminate surface water or groundwater and, therefore, would not pose runoff concerns during rain events. Application rates for dust palliatives would follow the manufacturer's recommendations. Material Safety Data Sheets (MSDS/SDS) for any palliatives would be available on site and provided to the BLM 14 days prior to use.

- **APM AQ-02: Exhaust Emissions (qualitatively included in the emissions estimate).** The following measures would be implemented during construction to further minimize greenhouse gas emissions (carbon dioxide, methane, and nitrous oxide) per California AB 32 and criteria air pollutants from vehicle and machinery and in conjunction with the Construction Emissions Mitigation Plan for the Project:

  - Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time depends on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Project would apply a "common sense" approach to vehicle use, such that idling is

reduced as far as possible below the maximum of 5 consecutive minutes required under Title 13 of California Code of Regulations (CCR) Section 2485 (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine would be shut off.

- Encourage use of natural gas- or electric-powered vehicles for light-duty trucks where feasible and available.

- **APM AQ-03: Minimize Potential Naturally Occurring Asbestos Emissions (qualitatively included in the emissions estimate).** The following measures would be implemented prior to and during construction to minimize the potential for naturally occurring asbestos emissions, in conjunction with an Asbestos Dust Mitigation Plan:

  - Prior to construction, samples of the construction area would be analyzed for the presence of asbestos, serpentinite, or ultramafic rock.

  - If asbestos, serpentinite, or ultramafic rock is determined to be present, all applicable provisions of the Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations (17 CCR 93105) would be implemented, including the following:

  - For disturbed areas of 1 acre or less:

    - Construction vehicle speed at the work site would be limited to 15 mph or less.

    - Prior to any ground disturbance, sufficient water would be applied to the area to be disturbed to prevent visible emissions from crossing the property line.

    - Areas to be graded or excavated would be kept adequately wet to prevent visible emissions from crossing the property line.

    - Storage piles would be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.

    - Equipment would be washed down before moving from the property onto a paved public road.

- Visible track-out on the paved public road would be cleaned using wet sweeping or a high-efficiency particulate air-filter-equipped vacuum device within 24 hours.

  - For disturbed areas of greater than 1 acre:

    - Prepare an Asbestos Dust Mitigation Plan and obtain approval prior to construction.

  - Implement and maintain the provisions of the approved Asbestos Dust Mitigation Plan from the beginning of construction through the duration of the construction activity.

- APM AQ-04: Minimize Potential Emissions of Naturally Occurring *Coccidioides immitis* Fungal Spores (qualitatively included in the emissions estimate). In addition to the APM AQ-01 measures to control general fugitive dust emissions, the following measures would be implemented prior to and during construction to create awareness of the risks and inhalation prevention procedures with respect to *Coccidioides immitis* fungal spores, which are naturally present in soils in the desert southwest, and inhalation of which can cause Valley Fever:
  - Prior to construction, and for each phase of construction, implement an Environmental Awareness Program for workers to ensure they are informed of the risks of contracting Valley Fever and the protective measures needed to minimize personal exposure to fugitive dust, as well as to minimize possible dust exposure of nearby residents and the general public.
  - Inform workers of the possible symptoms of Valley Fever and encourage them to seek medical treatment if these symptoms manifest.
- **BMP AQ-05: Air Quality Regulation and Standard Conformance.** All activities would meet the requirements of the Clean Air Act (CAA) (Sections 110, 118, 160, and 176[c]) and the applicable local Air Quality Management (AQM) jurisdiction(s). Fugitive dust cannot exceed local standards and requirements.

2.3.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to air quality and greenhouse gases are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-AIR-1**. All activities must meet the following requirements:
  - Applicable NAAQS (Section 109);
  - State Implementation Plans (SIP) (Section 110);
  - Prevention of Significant Deterioration (PSD), including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.);
  - Conformity Analyses and Determinations (Section 176[c]); and
  - Apply BMPs on a case by case basis.

- **CMA LUPA-AIR-3.** Where impacts to air quality may be significant under NEPA, requiring analysis through an EIS, require documentation for activities to include a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), NAAQS, criteria pollutant nonattainment areas, and potential air quality impacts of the Project (including cumulative and indirect impacts and GHGs emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and MMs to minimize net PM10 and PM2.5 emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.

- **CMA LUPA-AIR-4.** Because fugitive dust is the number one source of PM10 and PM2.5 emissions in the Mojave and Sonoran Deserts, fugitive dust impacts to air quality must be analyzed for all activities/projects requiring an EIS and Environmental Assessment (EA).

    - The NEPA air quality analysis may include modeling of the sources of PM10 and PM2.5 that occur prior to construction and/or ground disturbance from the activity/project, and show the timing, duration and transport of emissions off site. When utilized, the modeling will also identify how the generation and movement of PM10 and PM2.5 will change during and after construction and/or ground disturbance of the activity/project under all activity/project specific NEPA alternatives. The BLM air resource specialist and Authorizing Officer will determine if modeling is required as part of the NEPA analysis based on estimated types and amounts of emissions.

- **CMA LUPA-AIR-5.** A Fugitive Dust Control Plan will be developed for all projects where the NEPA analysis shows an impact on air quality from fugitive dust.

2.3.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant air quality and greenhouse gas emissions impacts if it would:

2.3.4.1 Air Quality

a. Conflict with or obstruct implementation of the applicable air quality plan?

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

d. Expose sensitive receptors to substantial pollutant concentrations?

e. Create objectionable odors affecting a substantial number of people?

2.3.4.2 Greenhouse Gas Emissions

a. Generate GHGs emissions, either directly or indirectly, that may have a significant impact on the environment?

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

2.3.5 Air Quality Impact Analysis

Impact AIR 1 - Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant with Mitigation

The MDAQMD is responsible for reviewing projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any Federal attainment plan. The MDAQMD CEQA and Air Federal Conformity Guidelines provides guidance on methodology and criteria to evaluate whether the Project would exceed significance thresholds.

The MDAQMD Guidelines state, “A project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable MDAQMD rules and regulations, complies with all control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan).”

The Project would comply with applicable MDAQMD rules related to fugitive dust (rule 403.2) and visible emissions (rule 401). In addition, the MDAQMD would need to issue an air quality permit under Regulation II of their rules for any portable concrete batch plants located in Riverside County (Blythe area). Any such batch plant would need to meet the particulate matter emissions limitations of MDAQMD Rules 404 and 405. Accordingly, the Project would be in compliance with all applicable MDAQMD rules.

As discussed in Section 4.2 of the TES (BLM 2019), the Mojave Desert Planning Area Federal Particulate Matter Attainment Plan requires the preparation of a Dust Control Plan for projects, such as this Project, that disturb more than 100 acres. Pursuant to Rule 403.2, the Applicant would be required to prepare and submit a site-specific Fugitive Dust Control Plan for the Project prior to commencing earth-moving activities in order to reduce potential impacts to a less than significant level. As such, MM AQ-CEQA-1 (which includes implementation of APM AQ-01 and BMP AQ-05) would be implemented and would require the preparation and implementation of a Fugitive Dust Control Plan for the Project in order to reduce potential impacts resulting from fugitive dust to a less than significant level. This Fugitive Dust Control Plan would be consistent with dust control strategies recommended in the Mojave Desert

Planning Area Federal Particulate Matter Attainment Plan as well as BMP AQ-05 which requires conformance with the CAA (i.e., local standards and requirements). Therefore, the Project would not conflict with or obstruct implementation of the Mojave Desert Planning Area Federal Particulate Matter Attainment Plan. As such, this impact would be less than significant for potential to violate applicable Federal plans.

The emission control measures in the MDAQMD 1995 PM10 Plan and the 2004 Ozone Attainment Plan were all adopted into MDAQMD rules; the Project would be in compliance with control measures in attainment plans through compliance with applicable rules. As discussed in Section 4.15 of the TES (BLM 2019), growth has been accounted for in various local and regional plans and projections and no changes to that growth would be likely to occur as a result of the Project. As such, the Project would be consistent with the growth forecasts in the applicable plans.

According to the California Ambient Air Quality Standards (CAAQS), the MDAQMD region is in nonattainment status for ozone and PM10. Therefore, if Project-generated emissions of either of the ozone precursor pollutants (volatile organic compounds [VOC] and nitrogen oxides [NOx]) or PM10 exceed the MDAQMD's significance thresholds, then the Project would be considered to conflict with the attainment plan since it could contribute to an air quality violation.

As described in Section 4.2 of the TES, VOC, NOx, and PM10 emissions resulting from the Project would be below the MDAQMD's thresholds listed in Table 2.3-1 and would be consistent with the MDAQMD's air quality plans. However, MM AQ-CEQA-1 (which includes implementation of APM AQ-02) would be implemented to further ensure that construction emissions from the Project do not exceed the MDAQMD's thresholds throughout construction through the development and implementation of a Construction Emissions Mitigation Plan. This Plan would include measures to reduce emissions through reduction in idling times and encourage the use of natural gas or electric powered light-duty vehicles. Therefore, emissions of VOC, NOx, and PM10 associated with the construction and operation of the Project would not contribute to air quality violations and would not exceed the MDAQMD's significance thresholds. As such, this impact would be less than significant with mitigation incorporated.

The overall impact would be less than significant with mitigation incorporated.

Impact AIR 2 - Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant – No Mitigation Required

The MDAQMD recommends that ambient air quality modeling be conducted when project emissions exceed their significance thresholds (Table 4.2-4 in the TES). If the emissions do not exceed the thresholds it is assumed that there would not be a violation of the CAAQS.

As shown in Table 4.2-4 of the TES, the Project's criteria pollutant emissions would not exceed the MDAQMD annual or daily significance thresholds for CO, NOx, PM10, PM2.5, SOx, and VOC, thus no ambient air quality modeling is required. Because the Project's emissions do not exceed the MDAQMD thresholds, it can be concluded that the Project would not result in or contribute to short-term exceedances of ozone, CO, PM10, and PM2.5 CAAQS. Therefore, the

Project would not violate or contribute to violation of any air quality standards and impacts would be less than significant.

The California Supreme Court's Sierra Club v. County of Fresno decision (referred to herein as the Friant Ranch decision) addresses the need to correlate mass emission values for criteria air pollutants to specific health consequences, and contains the following direction from the California Supreme Court: "The EIR must provide an adequate analysis to inform the public how its bare numbers translate to create potential adverse impacts or it must explain what the agency does know and why, given existing scientific constraints, it cannot translate potential health impacts further." As the project does not exceed applicable air quality thresholds, it would not cause adverse health impacts to receptors proximate to the project.

Impact AIR 3 - Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less Than Significant – No Mitigation Required

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of State and Federal ambient air quality standards is a function of successful implementation of the MDAQMD's attainment plans. Consequently, the MDAQMD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [CCR §15064(h)(3)].

Thus, if project specific emissions exceed the thresholds of significance for criteria pollutants the project would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the MDAQMD is in non-attainment under applicable Federal or State ambient air quality standards. Similarly, if a project's emissions do not exceed the project-level thresholds of significance and it is consistent with attainment plans, the project would not result in a cumulatively considerable net increase in emissions.

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. The State has designated the Riverside County portion of the Project area as being in nonattainment with CAAQS for ozone and PM10, and either in attainment or unclassified for all other pollutants regulated under CAAQS.

Short-term construction-related emissions would not exceed the MDAQMD significance thresholds for any VOC, NOx, and PM10 (Table 4.2-4 of the TES), therefore VOC, NOx, and PM10 emissions would not result in a significant cumulative impact relative to potential

exceedances of CAAQS for ozone and PM10. Similarly, CO emissions would also not exceed the MDAQMD significance thresholds and Mojave Desert Air Basin (MDAB) is in attainment for CO CAAQS. As discussed in the TES, the NAAQS standards would not be violated and would be in attainment. Furthermore, Section 4.2.10 of the TES evaluated potential cumulative effects and found that each of the Project alternatives would contribute a negligible amount ranging from 0.001 percent to 0.073 percent when compared to the cumulative criteria pollutant totals. Additionally, each of the full-route alternative emissions would not exceed the Federal conformity determination thresholds, which have been established to demonstrate there would be no increase in emissions in the nonattainment or maintenance area from the Federal action that could cause new violations of the standards and/or no increase in the frequency or severity of previous violations. Therefore, there would be a less than significant impact during Project construction.

Long-term operation-related emissions are substantially less than the construction-related emissions (see Air Quality and Climate Change Baseline Technical Report (HDR 2017b)). Since the construction related emissions do not exceed MDAQMD threshold and contribute negligible amounts to the cumulative criteria totals, it follows that the long-term emissions would also not exceed the MDAQMD's significance thresholds. The Project's long-term emissions would likewise not be cumulatively considerable. Therefore, the Project would have a less than significant impact.

Impact AIR 4 - Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant with Mitigation

2.3.5.1 Construction VOC, NO_x, PM_{10}, and CO

As discussed in Impact AIR-2, emissions during construction would not exceed the MDAQMD significance thresholds and would not be expected to result in concentrations that would exceed ambient standards or contribute substantially to an existing exceedance of an ambient air quality standard. Impacts to sensitive receptors would be less than significant.

The Project is not anticipated to create a CO impact or hotspot during construction as emissions of CO would not be concentrated in any one area or intersection. There would be minimal CO emissions during operation as there is little to no activity generating CO emissions during operation.

2.3.5.2 Construction Toxic Air Contaminants

The construction of the Project would emit toxics air contaminants (TAC) emissions principally in the form of diesel particulate matter (DPM as PM10 exhaust). DPM has been identified by the California Air Resources Board (CARB) as a carcinogenic substance. The DPM emissions would result from the operation of the various pieces of off-road construction equipment. Short-term emissions of DPM generated from construction would be limited to the 16-month construction period and would be dispersed throughout the length of the transmission line. In addition, on-site long-term emissions that would be associated with operation and maintenance would be negligible. Therefore, emissions would not be concentrated near any existing residences. Table 4.14-1 in the TES identifies the sensitive receptors along the various Project

segments. For the majority of the Project and the alternatives, there are no sensitive receptors within 2,000-foot buffers or greater. The only exceptions are in the communities of Quartzite and Ehrenburg, where receptors would be located slightly over 1,000 feet and 1,200 feet, respectively from the route. Given the limited duration of exposure and the spatial distribution of emissions, there would be little health risk to the nearby residences from exposure to Project-related DPM emissions. Additionally, MDAQMD does not consider the Project an industrial project because there are no industrial emissions, as it is a passive infrastructure project. Proximity to sensitive receptors for operational emissions is not an issue and need not be addressed. Therefore, the impact would be less than significant.

The Project would not be a substantial source of TAC emissions during operations. Potential TAC emissions would be generated by minimal vehicle traffic during maintenance activities. Given the limited emissions and distance to the nearest receptor the impact would be less than significant.

2.3.5.3 Valley Fever

Project-related construction (and, to a far lesser extent, operation) fugitive-dust emissions could include emissions of spores from the fungus *Coccidioides amities*, which lives in the soil of arid areas in the southwestern United States that could be emitted in substantial concentrations if fugitive-dust emissions are not limited. Therefore, the Project is designed to be constructed in a way that reduces fugitive-dust emissions. Which, in turn, would also reduce potential emissions of the fungal spores that could be present in each area. The implementation of measures APM AQ-01, APM AQ-03, and APM AQ-04 through MM AQ-CEQA-01 would control fugitive-dust emissions (thus controlling *Coccidioides amities* spores and naturally occurring asbestos) and provide workers with a Worker Environmental Awareness Program (WEAP) to ensure the workers are informed of the risks of contracting Valley Fever and the protective measures needed to minimize personal exposure to fugitive dust associated with Project construction. Since the Project mitigation and construction practices would control the emission of any potential for substantial pollutant concentrations, the impact would be less than significant.

Impact AIR 5 - Create objectionable odors affecting a substantial number of people?

Less Than Significant – No Mitigation Required

The Project is not expected to generate any objectionable odors. There would be some potential for detectable odors from vehicle exhausts, both diesel and gasoline, from both on-road and non-road construction equipment used on the Project. Any such odors would be similar to, but less prevalent than, odors experienced in busy urban areas from both on-road and nonroad vehicles and thus would not be significant. Additionally, populated areas along the Project are limited to the area surrounding the community of Blythe, where construction would take place for a short period of time further limiting the potential for a substantial number of people to be exposed to objectionable odors created from Project-specific vehicle exhaust. Therefore, construction-related impacts would be less than significant.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The Project does not contain land uses typically associated with emitting objectionable odors during operations. There would be a less than significant impact.

2.3.6 Greenhouse Gas Emissions Impact Analysis

Impact GHG 1 - Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant – No Mitigation Required

The Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The primary source of GHG emissions is from CO2. Emissions of methane and N2O would be a fraction of the CO2 emissions. As shown in Table 4.2-2 of the TES, the maximum annual GHG emissions that would be associated with construction of the Project would be up to 31,723 tons of carbon dioxide equivalents (CO2e). The total project is 114.3 miles in length, and the California portion is approximately 20 miles in length, thus total Project emissions are multiplied by 20/114.3 except for the batch plants. The total emissions within California would be 3,770 tons of CO2e (3,420 metric tons (MT)) and the total annual long-term GHG emissions that would be associated with operation and maintenance would be 934.3 MT CO2e. Even doubling these emissions estimates to account for methane and N2O, these emissions levels would still be well below the MDAQMD's annual tons of CO2e CEQA significance threshold of 100,000 tons of CO2e (MDAQMD 2016).

Riverside County has a Climate Action Plan (RCCAP) with a threshold of 3,000 MT CO2e per year for development projects. The Project has only temporary construction emissions within Riverside County. Pursuant to CAP Screening Tables document, construction emissions are amortized over 30 years (average economic life of a development project). Amortizing 3,420 MT CO2e construction emissions across 30 years results in 114 MT CO2e/year. Adding construction emissions to operation and maintenance emissions equals 1,048 MT CO2e/yr. Riverside County determined projects below the 3,000 MT CO2e screening threshold are considered less than significant. Therefore, GHG emissions associated with the Project would result in a less-than-significant impact on the environment as it pertains to the Riverside County CAP.

Project emissions do not exceed the MDAQMD CO2e CEQA significance threshold; therefore, GHG emissions associated with the Project would result in a less-than-significant impact on the environment**.**

Impact GHG 2 - Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Less Than Significant – No Mitigation Required

The Project has been evaluated relative to its potential to conflict with the RCCAP and GHG reduction goals set forth in AB 32, including the applicable Recommended Actions identified by CARB in its Scoping Plan.

2.3.6.1 Riverside County Climate Action Plan

With respect to GHG emissions, the RCCAP sets goals and policies to drive virtually all activities of county government and residents and businesses toward reduction of these emissions (Riverside County 2015). The RCCAP contains ambitious targets to reduce countywide emissions from all sectors by 2020 by slightly more than 50 percent below the 2020 business-as-usual estimates. The 2020 emission goal in the RCCAP is 5,960,998 metric tons of CO2e, representing a 15 percent reduction from 2008 levels. As discussed previously, Riverside County established a screening threshold for CEQA project of 3,000 MTCO2e. This is the threshold that the County determined would result in less than significant impacts to climate change. Project's emitting less than 3,000 MTCO2e would not need to complete a consistency analysis with the RCCAP. Furthermore, the GHG reduction measures included in the RCCAP are not applicable to the Project. The RCCAP does not explicitly address construction-related equipment exhaust GHG emissions that would be the primary source of GHGs for the Project. However, any increase in GHG construction emissions may be offset to the extent the Project allows for the displacement of fossil fuel energy generation with renewable energy sources through the provision of new transmission infrastructure to interconnect future renewable energy resources in both Arizona and California. As such, there may be a beneficial contribution to anthropogenic climate change.

2.3.6.2 AB 32 – Climate Change Scoping Plan

Emission reductions in California alone will not be able to stabilize the concentration of GHGs in the earth's atmosphere. However, California's actions have set an example and continue to drive progress towards a reduction in GHGs elsewhere. If other States and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases that would lead to the most severe consequences of climate change.

The CARB Governing Board approved a Climate Change Scoping Plan (Scoping Plan) in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The measures in the Scoping Plan were all in place by 2012. The First Update of the CARB Scoping Plan adopted in May 2014 (CARB 2014) includes no new measures or targets that would require additional consistency analysis. The Second Update of the CARB Scoping Plan was approved in December 2017. The Project's consistency with applicable strategies in the Scoping Plan is assessed in Table 2.3-2.

Table 2.3-2 Consistency with Applicable Scoping Plan Reduction Measures

SCOPING PLAN REDUCTION MEASURE	PROJECT APPLICABILITY/CONSISTENCY DISCUSSION
California Light-Duty Vehicle. Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	**Consistent.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. However, when this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the Project site during construction and operation. The Project would not conflict or obstruct this program.
Renewable Portfolio Standard. Achieve 33 percent renewable energy mix Statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	**Consistent.** One of the purposes of the Project is to develop new transmission infrastructure to interconnect future renewable energy resources in both Arizona and California. This would help California achieve the RPS Standard.
Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	**Consistent.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standard would be applicable to the fuel used by vehicles that would access the Project site during construction and operation. The Project would not conflict or obstruct this program.
Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	**Consistent**. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the Project site. The Project would not conflict or obstruct this program.
Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	**Consistent.** This is a Statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standards would be applicable to the vehicles that access the Project site during construction or operation. The Project would not conflict with or obstruct this program.
High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	**Consistent.** Scoping Plan Measure H-6: High Global Warming Potential Gas Reductions from Stationary Sources – SF6 Leak Reduction and Recycling in Electrical Applications. This measure would reduce emissions of SF6 within the electric utility sector and at particle accelerators by requiring the use of best achievable control technology for the detection and repair of leaks and the recycling of SF6. On June 17, 2011, the approved Final Regulation Order associated with Scoping Plan Measure H-6 for reducing SF6 emissions from gas insulated switchgear became effective. The regulation establishes maximum annual SF6 emission rates for gas insulated switchgear, starting in 2011 at 10 percent of the owners' total equipment capacity. The required emission rates will steadily decline by 1 percent per year until 2020, at which time the maximum annual SF6 emission rate would be set at 1 percent. The

SCOPING PLAN REDUCTION MEASURE	PROJECT APPLICABILITY/CONSISTENCY DISCUSSION
	regulation also requires gas insulated switchgear owners to annually report their SF6 emissions and emission rate to CARB. The Project would include installation of SF6-containing circuit breakers that would have a fugitive emissions leak rate of less than 1 percent per year per engineering specifications (HDR 2017b). This would ensure that there would be little potential for the Project to conflict with compliance of this regulation and there would be no impact.
Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	**Consistent.** The Project would include the recycling of construction waste at approved disposal facilities.

Source of California Air Resources Board Scoping Plan Reduction Measure: CARB 2008.

Because the Project would cause no impacts related to a conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, it could not cause or contribute to any cumulative effect in this regard.

2.3.7 Air Quality and Climate Change Mitigation

The following CEQA MMs have been developed to reduce and/or avoid air quality and greenhouse gas impacts:

MM AQ-CEQA-1: Implement Air Quality Applicant Proposed Measures, Best Management Practices, Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.3.2 and 2.3.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to air quality and greenhouse gasses. These APMs, BMPs, and CMAs include; APM AQ-01, BMP AQ-01, APM AQ-02, APM AQ-03, APM AQ-04, BMP AQ-05, CMA LUPA-AIR-1, CMA LUPA-AIR-3, CMA LUPA-AIR-4, CMA LUPA-AIR-5.

If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM,

BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements:

- **APM AQ-01: Fugitive Dust (quantitatively included in the emissions estimate).** Consistent with APM AQ-01, and MDAQMD Rule 403.2, a Fugitive Dust Control Plan shall be prepared for the Project prior to the start of construction and shall be implemented throughout all construction phases of the Project. This Fugitive Dust Control Plan shall be prepared by the Applicant at least 30 days prior to construction which shall be approved by the CPUC and MDAQMD. The Applicant shall ensure that the Fugitive Dust Control Plan is implemented throughout construction activities and shall keep records of compliance on site and submit monthly reports to CPUC and MDAQMD. This Fugitive Dust Control Plan shall comply with the MDAQMD Guidelines and include all of the control measures listed in APM AQ-01. In addition to these control measures, the Fugitive Dust Control Plan shall also include signage related to fugitive dust that will include the following specifications:

    - A minimum 48 inch high by 96 inch wide sign containing the following shall be located within 50 feet of each Project site entrance, meeting the specified minimum text height, black text on white background, on one inch A/C laminated plywood board, with the lower edge between six and seven feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day:

        - [Site Name] {four-inch text]
        - [Project Name/Project Number] {four-inch text}
        - IF YOU SEE DUST COMING FROM {four-inch text}
        - THIS PROJECT CALL: {four-inch text}
        - [Contact Name], PHONE NUMBER XXX-XXXX {six-inch text}
        - If you do not receive a response, Please Call {three-inch text}
        - The MDAQMD at 1-800-635-4617 {three-inch text}

  Additionally, the following control measures shall be included in the Fugitive Dust Control Plan:

    - Traffic speeds on unpaved roads shall not exceed 15 miles per hour;
    - Drop heights from excavators and loaders shall be minimized to distances no more than 5 feet;
    - Appoint a construction relations officer to act as a community liaison concerning on-site construction activity, including resolution of issues related to PM10 and PM2.5 generation from combustion emissions and fugitive dust generation;

- An on-site supervisor with a current fugitive dust control class certification shall be present who is available within 30 minutes to respond to any fugitive dust control issue at the site during normal business hours;
- The operation shall keep on-site records of specific dust control actions taken;
- All perimeter fencing shall be wind fencing or the equivalent of four feet of height or the top of all perimeter fencing (this wind fencing requirement may be superseded by local ordinance, rule, or Project-specific biological mitigation prohibiting wind fencing); and
- A wheel washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the unpaved construction site.

Responsible Party: The Applicant shall be responsible for ensuring the Fugitive Dust Control Plan is prepared and implemented throughout construction activities.

Timing: The Fugitive Dust Control Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any calls received regarding fugitive dust and all compliance actions taken.

Standards for Success: Fugitive dust will be minimized throughout all construction activities and compliance with MDAQMD Rule 403.2 shall be achieved.

- **APM AQ-02: Exhaust Emissions (qualitatively included in the emissions estimate).** Consistent with APM AQ-02 a Construction Emissions Mitigation Plan shall be developed by the Applicant for the Project at least 30-days prior to the start of construction activities and shall be implemented by the Applicant throughout all construction activities. The Construction Emissions Mitigation Plan shall be approved by the CPUC and MDAQMD and the Applicant shall keep records of compliance with this Plan on site and submit monthly reports to CPUC and MDAQMD. Successful implementation of with measure would result in minimization of exhaust emissions from worker vehicles, construction equipment, and vehicles. The Construction Emissions Mitigation Plan may include the following measures:
  - Use ultra-low sulfur diesel fuel (e.g., <15 ppm);
  - Use clean-burning on- and off-road diesel engines. Heavy-duty diesel-powered construction equipment manufactured after 1996 (with Federally mandated “clean” diesel engines) shall be utilized;
  - The Applicant shall develop a program and require construction workers to carpool to construction sites;
  - Restrict construction vehicle idling time to less than 5 minutes;

- Properly maintain mechanical equipment;
- Use particle traps and appropriate controls to reduce diesel particulate matter. Other equipment includes devices such specialized catalytic converters (oxidation catalysts) control approximately 20 percent of diesel particulate matter, 40 percent of carbon monoxide, and 50 percent of hydrocarbon emissions;
- Provide temporary traffic controls, such as a flag person, during all phases of construction to maintain a smooth traffic flow (See MM TRANS-CEQA-2 under Section 2.17 for more details);
- During Project construction, all off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet the Tier 4 Final emissions standards, where available. In addition, all construction equipment shall be outfitted with the Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a level 4 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations (i.e., if Project construction goes beyond the anticipated schedule); and
- A copy of each unit's certified tier specification, BACT documentation, and CARB or MDAQMD operating permit shall be provided to the CPUC at the time of mobilization for each applicable unit of equipment.

Responsible Party: The Applicant shall be responsible for ensuring the Construction Emissions Mitigation Plan is prepared and implemented throughout construction activities.

Timing: The Construction Emissions Mitigation Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any compliance actions taken and a list of equipment used on site. Any associated vehicle tier specifications, BACT documentation, or CARB or MDAQMD operating permits shall be kept on site and made available upon request.

Standards for Success: Construction emissions will be minimized and would not exceed MDAQMD significance thresholds. Additionally, any State standards regulating construction emissions would be met (i.e. CARB Tier 4 final emission standards and Title 1. California Code of Regulations Section 2485 standards).

- **APM AQ-03: Minimize Potential Naturally Occurring Asbestos Emissions (qualitatively included in the emissions estimate).** Consistent with APM AQ-03 an Asbestos Dust Mitigation Plan shall be developed for the Project in conjunction with the Fugitive Dust Control Plan that shall also be developed for the Project only if the results of the asbestos, serpentine, or ultramafic rock are positive in the Project area. The Asbestos Dust Mitigation Plan would be developed by the Applicant at least 30-

days prior to the start of construction activities and shall be submitted and approved by the CPUC and MDAQMD. The plan shall be prepared and implemented according to the requirements of Title 17 California Code of Regulations 93105, CARB Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. Successful implementation of this APM will result in compliance with the CARB-required Asbestos Toxic Control Measures.

Responsible Party: The Applicant shall be responsible for ensuring the Asbestos Dust Mitigation Plan is prepared and implemented throughout all construction activities.

Timing: The Asbestos Dust Mitigation Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary any compliance actions taken related to asbestos control.

Standards for Success: Construction dust will be minimized, and Project activities will comply with the CARB-required Asbestos Toxic Control Measures.

MM AQ-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

2.4 BIOLOGICAL RESOURCES

This section describes the impacts to biological resources associated with the construction, operation, and maintenance of the proposed transmission line, substations, and ancillary facilities in terms of CEQA significance thresholds provided below in Section 2.4.4. Impacts to biological resources are discussed in terms of impacts on vegetation communities, wildlife species, special-status species of plants and animals, special habitat management areas, and invasive and noxious weeds.

2.4.1 Thresholds and Methodology

Existing conditions described in Section 3.5 of the TES (BLM 2019) have been evaluated with regard to their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS. The potential impacts associated with the Project are evaluated on a qualitative and quantitative basis through a comparison of the anticipated Project effects on biological resources. The evaluation of Project impacts is based on the significance criteria established by Appendix G of the CEQA Guidelines (refer to Section 2.4.4 below for additional information), and additional criteria including:

- Long-term loss of wetland or riparian vegetation, or sensitive natural community caused by degradation of water quality, diversion of water sources, or erosion and sedimentation from altered drainage patterns;
- Introduction or increased spread of noxious weeds;
- Loss of individuals or habitat of a plant or wildlife species that would result in the elimination of a local population of that species;
- Loss of individuals or habitat of a plant or wildlife species that would result in that species being listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) or California Endangered Species Acts (CESA), or being added to an agency list of sensitive species;
- Any activity that would result in "take" under the Federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), or the Bald and Golden Eagle Protection Act (BGEPA)[1];
- Any activity that would result in impacts to species that meet the criteria for endangered, rare, or threatened, regardless of whether it is listed under FESA or CESA (CEQA Guidelines §15380 (d).)
- Any activity that would result in "take" under the CESA or the California Fish and Game Code (CFGC)[2];
- Adverse modification of Designated Critical Habitat (DCH) or jeopardy to a species listed under the ESA;
- Pollution of waters that could cause adverse effects on wildlife;
- Long-term interference with the movement of native resident or migratory species, disruption in the function of wildlife movement corridors, or impeding the use of wildlife nursery sites or water sources;

[1] Following new guidance (Deputy Solicitor Memoranda), USFWS no longer covers incidental take of birds covered under the MBTA.
[2] The CDFW's November 29,2019 Advisory includes incidential take of birds covered under the CFGC Section 3503.

- Impacts to special designated management areas (e.g., wilderness area, habitat management area, Area of Critical Environmental Concern (ACEC), wildlife refuge) that compromise the intent of that designation;
- Modification of habitat of a special-status species of plant or wildlife used for any purpose (e.g., breeding, rearing, foraging, dispersal, etc.) that would result in population level impacts (i.e., as opposed to impacts to individuals), a reduction in the potential viability of the population, or a loss in the range of occurrence of the species;
- Interference with nesting or breeding periods of any species;
- Reduction in the range of occurrence of any special-status species;
- Conflict with State or local statutes, policies, or ordinances protecting biological resources, such as native plant provisions; and
- Conflict with the provisions of a National Wildlife Refuge (NWR), Habitat Conservation Plan (HCP), Candidate Conservation Agreement (CCA), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or State conservation program.

2.4.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified that avoid and minimize Project impacts and would be implemented by the Project Applicant. In addition, BLM requires implementation of BMPs, which are intended to further avoid and minimize Project impacts. Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California; and, therefore, have been incorporated into the Project evaluation as it relates to biological resources impacts under CEQA. The CPUC requires additional compensatory mitigation that have been incorporated to ensure impacts are reduced to a less than significant level, which are included in Section 2.4.6.

- **APM BIO-1: Worker Environmental Awareness Program.** Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the FESA and CESA and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special-status species as well as a discussion of avoidance and minimization measures.
- **BMP BIO-1: Worker Environmental Awareness Program.** The worker education program would provide interpretation for non-English speaking workers.

- **APM BIO-2: Biological Monitoring and Pre-construction Survey.** A qualified biological monitor would be present on the Project site during all work activities within habitat of special-status animal species. The qualified biologist would conduct a pre-construction survey of those areas immediately before work activities begin and would locate and fence off any present individuals of special-status plant species.

- **BMP BIO-02: Biological Monitoring and Pre-construction Survey.** Multiple biological monitors would be provided so any work site within habitat of special-status species is monitored concurrently if needed.

- **APM BIO-3: Approved Work Areas.** To the extent practicable, stockpiling of material would be allowed only within the established work area. Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed areas within identified work areas or access roads.

- **BMP BIO-03: Approved Work Areas.** The BLM would approve areas to be used for stockpiling, vehicle parking, or other construction support activity that would occur outside established work areas.

- **APM BIO-4: Environmentally Sensitive Areas and Fencing.** Environmentally sensitive areas, such as the riparian areas, xeroriparian washes, and other habitat of special-status species, would be identified in the field. Barrier fences or stakes would be installed at the edge of the easement or around the sensitive area to minimize the possibility of inadvertently encroaching into sensitive habitat.

- **APM BIO-5: Additional Prohibitions.** Trash dumping, firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment.

- **APM BIO-6: Trash Handling.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the work area would be disposed of in closed trash containers.

- **APM BIO-7: Monofilament Plastic.** No monofilament plastic would be used for erosion control (for example, matting, fiber roll, wattles, silt fencing backing). Appropriate materials include burlap, coconut fiber, or other materials as identified in the general and site-specific Storm Water Pollution Prevention Plan (SWPPP).

- **APM BIO-8: Refueling.** Vehicular and equipment refueling should not occur within 100 feet of a wetland or drainage unless secondary containment is constructed, for example, a berm and lined refueling area. Proper spill prevention and cleanup equipment would be maintained in all refueling areas in accordance with the Spill Prevention, Control, and Countermeasures Plan (SPCC) for the Project.

- **APM BIO-9: Escape Ramps.** All excavated steep-walled holes or trenches more than 1-foot-deep would be covered at the end of each working day with plywood or similar materials or would be provided with one or more escape ramps constructed of earth fill or wooden planks. Each trench or hole would be inspected for wildlife at the

beginning of each workday and before such holes or trenches are filled. Wildlife found trapped in trenches or holes would be relocated to suitable habitat outside the work area. If possible, pipes and culverts greater than 3 inches in diameter would be stored on dunnage to prevent wildlife from taking refuge in them, to the extent feasible.

- **APM BIO-10: Erosion and Dust Control.** The BMPs included in the SWPPP would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as described previously (AQ-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access).

- **APM BIO-11: Vegetation Management Plan.** The Vegetation Management Plan (EIS Appendix 2B) would be approved by the BLM and implemented. That Plan describes the surveys, permitting, fee payments, and plant protection to be conducted in areas where Project design would not eliminate the need for vegetation control for the Project to be in compliance with North American Electric Reliability Corporation (NERC) requirements. Vegetation would be trimmed or otherwise controlled for safe operation of the transmission line and would be designed to minimize impacts on special-status species to the extent practicable. At a minimum, vegetation treatments shall incorporate the measures identified in the 2016 Memorandum of Understanding regarding vegetation management along ROW for electrical transmission and distribution facilities (USDA 2016). The Plan also would describe how vegetation would be salvaged, as needed, in order to comply with the applicable Arizona Native Plant Law and California regulations.

- **BMP BIO-11: Vegetation Management Plan.** In addition to the description of the Vegetation Management Plan in the corresponding APM BIO-11, the plan would also:

  - Meet BLM Guidelines for mapping and surveying of cacti, yuccas, and succulents.

  - Include a wire zone/border zone/effective border zone approach to vegetation maintenance as described in Ballard et al. 2007.

  - Identify tall vegetation species by geographic reach and growth rates, from relevant scientific literature (such as Drezner 2003), to be used to determine maximum allowable vegetation heights in the context of wire zone/border zone/effective border zone concepts, to accommodate identified growth periods (e.g., ten years) based on the specific vegetation community. Species examples include, but are not limited to, saguaro cactus, ironwood, palo verde, cottonwood, and Gooding willow.

- **APM BIO-12: Invasive Species Control.** A Noxious Weed Control Plan (EIS Appendix 2B) that addresses specific requirements in CMA LUPA-BIO-11 would be developed, approved by the BLM, and implemented prior to initiation of ground

disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area, describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special-status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and practices for the application of herbicides.

- **APM BIO-13: Riparian Habitat Avoidance.** Riparian areas and xeroriparian drainages that occur within the ROW would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. Existing topography would be restored to pre-Project conditions to the extent possible.

- **APM BIO-14: Minimizing Vegetation Clearing.** In areas with suitable topography, minimal or no vegetation clearing, and soil disturbance would be conducted for site access and construction (i.e. overland driving/overland access). Overland driving/overland access would be used in areas that support the necessary construction equipment. Upgrading of existing access roads and construction of new access roads would be implemented as necessary for the safe construction activities.

- **APM BIO-15: Reclamation and Restoration.** A Habitat Restoration and Monitoring Plan would be developed, approved by BLM, and implemented for construction and operation of the Project. Revegetate all sites disturbed during construction that would not be required for operation of the transmission line, and restore disturbed areas to the extent practicable, given the arid desert environment. The Plan would describe in detail methods for surveying and characterizing vegetation in disturbed areas before construction; topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. It would be designed to reduce impacts on special-status species to the extent practicable.

- **BMP BIO-15: Reclamation and Restoration.** As a part of the Habitat Restoration and Monitoring Plan, the soil horizons would be stored separately for the areas where the success of restoration could be crucial for rare plant species.

- **APM BIO-16: Treatment of Saguaro Cactus.** Measures would be implemented to minimize the number of saguaro cacti that must be relocated for the safe construction and operation of the transmission line. In accordance with the Vegetation Management Plan (EIS Appendix 2B), a survey of saguaros within the ROW would be conducted before construction and where possible, the transmission line would be designed to minimize the number of saguaros affected by adjusting tower locations and conductor height. The Plan would address plant salvaging, storing, and replanting requirements and methods, only those saguaros that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if

they cannot be avoided through Project design. When possible, saguaro that must be removed would be relocated as directed by the BLM and state agency protocols. Monitoring and management of saguaros during operations would occur as described in the Vegetation Management Plan.

- **APM BIO-17: Limit Off-road Vehicle Travel.** Vehicular travel would be limited to established roads to the maximum extent practicable.

- **BMP BIO-19: Colorado River.** In the vicinity of the Colorado River, existing structure spacing, and conductor heights would be matched to the greatest extent practical to reduce the potential for bird collisions with the power line. The transmission line would span the Colorado River and the minimum number of structures possible would be located within the undeveloped floodplain. The term, "vicinity of the Colorado River" is defined to mean the river crossing, floodplain, and associated agricultural lands. In these areas, conductor bundles would be in a horizontal, parallel configuration, and match existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. No guyed structures would be used at these locations.

- **APM BIO-20: Migratory Bird Protection During Construction.** If construction is scheduled during the nesting bird season (generally February 1 through August 31), the work area would be surveyed for birds protected under the MBTA and California Fish and Game (CFG) Code. Active nests identified during pre-construction surveys would require protective buffers or visual barriers to ensure compliance with those regulations. If the qualified biologist determines that construction activities would cause distress to nearby nesting birds, larger buffers or construction delays might be necessary to allow the birds to successfully fledge from the nest.

- **APM BIO-21: Reduction of Avian Collisions and Electrocution.** Current Avian Power Line Interaction Committee (APLIC) guidelines and methodologies (APLIC 2006, 2012) would be used in the design of the proposed transmission facilities to minimize the potential for raptors and other birds to collide with the transmission line during operations and be electrocuted. For example, aerial marker balls or other visibility markers would be placed at and near the crossing of the Colorado River to increase the visibility of the transmission line to birds using that movement corridor. Further, placement of lines significantly above existing transmission lines, topographic features, or tree lines would be avoided. These measures would be implemented, where practicable, in conjunction with an Avian Protection Plan (APP) for the Project. The APP would include requirements for monitoring the effectiveness of anti-collision design.

- **BMP BIO-21: Reduction of Avian Collision.** Aerial marker balls or other visibility markers would be placed on overhead ground wires (not conductors) at crossing of the Colorado River and floodplain to increase visibility to birds using that movement corridor and marking any other static wires to improve visibility and reduce collisions. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. The APP would include requirements for monitoring the effectiveness of anti-electrocution design.

- **APM BIO-23: Mojave Desert Tortoise Protection (California).** A qualified-biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in California, in order to survey areas before they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way in accordance with U.S. Fish and Wildlife Service (USFWS) protocols. Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species. Other measures, as required by the USFWS in any applicable Biological Opinion (BO), would also be implemented.

- **BMP BIO-23: Mojave Desert Tortoise Protection (California).** A designated biologist would inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection.

- **BMP BIO-24: Sensitive Plant Surveys.** On BLM lands and other lands where access is secured by the owner, a survey would be conducted during the appropriate time of year of the selected route to identify special-status plant species and imperiled or sensitive vegetation alliances. Where possible, and as required by the BLM, special-status species and vegetation alliances would be avoided during construction. This survey would be restricted to non-cultivated land.

- **BMP BIO-25: Sensitive Animal Surveys.** A survey would be conducted of the selected route prior to construction of all work areas to identify special-status animal species, including Mojave Desert tortoises, burrowing owls, and Mojave fringe-toed lizards. Where possible, and as required by the BLM, special-status species and vegetation alliances would be avoided during construction.

- **APM BIO-27: Bighorn Sheep Lambing Areas.** Construction activities would be limited from January 1 to March 31 in active bighorn sheep lambing areas identified by BLM and Arizona Game and Fish Department (AGFD).

- **BMP BIO-28: Raven Management Plan.** The Raven Management Plan would be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the common raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for common ravens. Compensatory mitigation would be provided that contributes to LUPA-wide raven management associated with lands in the DRECP.

- **BMP BIO-29: Bird and Bat Conservation Strategy.** The Bird and Bat Conservation Strategy (BBCS) would provide guidance on conservation measures applicable to bird and bat species present in the Project Area, including a nesting bird management plan and a nest management plan.

- **BMP BIO-30: Burrowing Owl Nesting Management Plan.** The Plan would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14.

- BMP BIO-31: Treatment of Harwood's eriastrum.

1. Pre-construction surveys would be required for non-agricultural areas in California.
2. Avoid Harwood's eriastrum individuals through micrositing facilities to the maximum extent practical.
3. Within suitable habitat for Harwood's eriastrum, use overland travel (drive and crush) in-lieu of road construction to pad sites to the maximum extent practical.
4. On non-agricultural Public Lands in California, an authorized botanist would be on site for all construction activities involving surface disturbance or overland travel.
5. Within suitable habitat for Harwood's eriastrum, keep equipment to the minimum necessary to accomplish the necessary work.
6. On public lands in California, avoid establishing features that would interfere with the movement of sand to the maximum extent practical.
7. Laydown and temporary use sites would not be located within suitable habitat for Harwood's eriastrum.
8. On public lands in California, use existing roads or routes to the maximum extent practical.
9. Develop and implement an Invasive Species Management Plan (specific to the rare plant habitat) that California State Director would approve prior to a notice to proceed for work on public lands in California.
10. No surface disturbance or overland travel would occur within occupied habitat for Harwood's eriastrum from 15 February through the 31 July. This stipulation does not apply to verified, unoccupied habitat.
11. No take of Harwood's eriastrum individuals would be allowed without California BLM State Director approval.
12. Prepare a Harwood's eriastrum Linear ROW Protection Plan.
13. Project impacts to suitable habitat combined with current impacts shall be limited (capped) to a maximum of 1 percent of Harwood's eriastrum habitat across all BLM lands included within the DRECP.

- **BMP BIO-33: Construction Lighting.** All long-term nighttime lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting, if required, would be

directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to Project infrastructure. Long-term nighttime lighting would avoid the use of constant-burn lighting.

- **BMP BIO-34: Prevention of Puddles During Dust Abatement.** The application of water and/or other palliatives for dust abatement in construction areas and during Project operations and maintenance would be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.

- **BMP BIO-35: Presence of Wildlife in Construction Materials or Equipment.** All construction materials and equipment would be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed.

- **BMP BIO-36: Feeding or Harassment of Wildlife.** The intentional feeding or harassment of wildlife on site is prohibited.

- **BMP BIO-37: Native Plant Collection.** The collection of native plants on site is prohibited without required permits and tags.

- **BMP BIO-38: Use of State-of-the-Art and Commercially Available Technology.** Use state-of-the-art, commercially available construction and installation techniques, as approved by BLM, appropriate for the specific activity/Project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

- **BMP BIO-40: Project Activity Siting Near Bat Maternity Roosts.** Activities would not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost for BLM Focus and Special Status Bat Species.

- **BMP BIO-41: Succulent Management.** Management of cactus, yucca, and other succulents would adhere to current up-to-date BLM policy. All activities would follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents. Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features. BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.

- **BMP BIO-42: Dead and Downed Wood.** Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

- **BMP BIO-43: Collection of Plant Material.** Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

- BMP BIO-44: Mojave Desert Tortoise Protection.

- All culverts for access roads or other barriers would be designed to allow unrestricted access by desert tortoises and would be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.

- Biological monitoring would occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.

- A designated biologist would accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.

- The ground would be inspected under vehicles for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.

- Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted.

- **BMP BIO-45: Protection from Loss and Harassment of Golden Eagles.** Provide protection from loss and harassment of active golden eagle nests through activities identified LUPA-BIO-IFS-24 through -31.

- **BMP BIO-46: Compensation for Loss of Desert Riparian Woodland.** The loss of desert riparian woodland would be compensated at a ratio of 5:1. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.

- **BMP BIO-48: Flight Diverters.** Bird flight diverters would be installed on the Colorado River and associated floodplain crossings and other areas of high bird use as recommended by BLM in consultation with USFWS, AGFD, and CDFW

- **BMP BIO-49: Fringe-toed Lizard Linear ROW Protection Plan.** A Fringe-toed Lizard Linear ROW Protection Plan would be prepared that identifies specific conservation measures to minimize Project-related impacts to sand dunes and sand transport areas, to map suitable habitat within construction zones, and methods to achieve clearance surveys within suitable habitat so animals are not killed by construction activities.

- **BMP BIO-50 Engineering Controls.** Appropriate engineering controls would be used to minimize impacts on dry wash, dry wash woodland, and chenopod scrub, including downstream occurrences, resulting from surface water runoff, erosion, sedimentation, altered hydrology, accidental spills, or fugitive dust deposition to these habitats. Appropriate buffers and engineering controls would be determined through agency consultation.

- **BMP BIO-51: Conductor Clearance.** To minimize vegetation trimming, micrositing and design considerations (including tower height) would be applied so the catenary formed by the conductors (the bottom of the sag) avoids saguaros and is not directly over wash vegetation (microphyll woodlands), to the extent practicable.

- **BMP BIO-52: California Riparian Habitat and Rare Plant Alliance Avoidance.** In California, as part of micrositing towers, a 200-foot setback from the outer perimeter of Coloradan semi-desert wash woodland/scrub vegetation community (microphyll woodlands) would be applied. Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features. Minor incursions would be allowed to balance minimizing vegetation trimming (see BMP BIO-51) while maintaining an appropriate setback, as determined based on site-specific conditions. No structure would be placed within, and no new access roads would pass through, these washes to the extent practicable.

- **BMP BIO-53: Protection of Dune Vegetation.** Project facilities would be sited to avoid dune vegetation. Unavoidable impacts to dune vegetation would be limited and Project facilities would be sited to minimize unavoidable impacts. Access roads would be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.

- **BMP BIO-54: Protection of Sand Transport.** Within Aeolian corridors that transport sand to dune formations and vegetation types downwind all activities would be designed and operated to facilitate the flow of sand across activity sites and avoid the trapping or diverting of sand from the Aeolian corridor. Structures would take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences would be designed to allow sand to flow through and not be trapped.

- **BMP BIO-55: Access within Focus and BLM Special-Status Species Suitable Habitat.** Construction of new roads and/or routes would be avoided to the extent practicable within focus and BLM special-status species suitable habitat within identified linkages for those focus and BLM special-status species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern.

- **BMP BIO-56: Sonoran Pronghorn.** Measures, as required by the USFWS in any applicable BO, would be implemented.

- **BMP VEG-01: Removal of Vegetation.** Any removal of vegetation resources would be conducted in accordance with BLM Information Bulletin (IB) 2012-097.

- **BMP VEG-02: Avoid Vegetation Removal.** Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.

2.4.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the BLM lands portion of the Project located within the CDCA and related to biological resources are listed below; and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA DFA-BIO-IFS-1.** Conduct surveys as applicable in the DFAs as shown in Table 21 of the DRECP.
- **CMA DFA-BIO-IFS-2.** Implement setbacks shown below in Table 22 of the DRECP as applicable in the DFAs.
- **CMA DFA-VPL-BIO-DUNE-1.** Activities in DFAs and VPLs, including transmission substations, will be sited to avoid dune vegetation (i.e., North American Warm Desert Dune and Sand Flats). Unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms, EIS Appendix 6) to dune vegetation will be limited to transmission projects, except transmission substations, and access roads that will be sited to minimize unavoidable impacts.
    - For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms, EIS Appendix 6) to dune vegetation, the following will be required:
        - Access roads will be unpaved.
        - Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.
- **CMA LUPA-BIO-1.** Conduct a habitat assessment (see Glossary of Terms, EIS Appendix 6) of focus and BLM special-status species suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms, EIS Appendix 6) for focus and BLM special-status species. If required by the relevant species-specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species-specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat.
    - BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season.

- Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.

- **CMA LUPA-BIO-2.** Designated biologist(s) (see Glossary of Terms, EIS Appendix 6), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

- **CMA LUPA-BIO-3.** Resource setbacks (see Glossary of Terms, EIS Appendix 6) have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions (see Glossary of Terms, EIS Appendix 6), as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:

  - The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).

  - The edge of the vegetation extent for specified focus and BLM sensitive plant species.

  - The edge of suitable habitat or active nest substrates for the appropriate focus and BLM special-status species.

- **CMA LUPA-BIO-4.** For activities that may impact focus and BLM special-status species, implement required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities. Species-specific seasonal restriction dates are described in the applicable CMAs. Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/Project specific environmental analysis.

- **CMA LUPA-BIO-5.** All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the Project (i.e., site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or Project abandonment, and restoration/reclamation

activities). The worker education program will provide interpretation for non-English speaking workers and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site-specific biological and non-biological resources.
- Information on the legal protection for protected resources and penalties for violation of Federal and State laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required LUPA and Project-specific measures for avoiding and minimizing effects during all Project phases, including but not limited to resource setbacks, trash, speed limits, etc.
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Measures that personnel can take to promote the conservation of biological and non-biological resources.

- **CMA LUPA-BIO-6.** Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:
  - Common raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the common raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for common ravens.
  - The application of water and/or other palliatives for dust abatement in construction areas and during Project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.
  - Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.

    All activity work areas will be kept free of trash and debris. Particular attention will be paid to “micro-trash” (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or

wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the Project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.

- In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.

- **CMA LUPA-BIO-7.** Where DRECP vegetation types or focus or BLM special-status species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms, EIS Appendix 6) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below:

  - Implement site-specific habitat restoration actions for the areas affected including specifying and using:

    - The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed).

    - Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities).

    - Equipment.

    - Timing (e.g., appropriate season, sufficient rainfall).

    - Location.

    - Success criteria.

    - Monitoring measures.

    - Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM- Administered Lands.

  - Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms, EIS Appendix 6), the cactus and yucca will be re-planted back to the original site.

  - Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms, EIS Appendix 6) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/Project specific

environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.

- **CMA LUPA-BIO-8.** All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement Project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following:
  - Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measurable criteria).
  - Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists.
  - Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species.
  - Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.
- **CMA LUPA-BIO-9.** Implement the following general LUPA CMA for water and wetland dependent resources:
  - Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
    - On Project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
    - Hazardous material leaks, spills, or releases will be immediately cleaned, and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
    - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.

- Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved Project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the Project to minimize site disturbance, including the following:
  - Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
  - Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
  - Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.
  - Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.
  - Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.
  - Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.

- **CMA LUPA-BIO-10.** Consistent with BLM state and national policies and guidance, integrated weed management actions will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:
  - Thoroughly clean the tires and undercarriage of vehicles entering or reentering the Project site to remove potential weeds.
  - Store Project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the Project site.
  - Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds.
  - Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.
  - Reestablish native vegetation quickly on disturbed sites.
  - Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas.
  - Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.

- **CMA LUPA-BIO-11.** Implement the following CMAs for controlling nuisance animals and invasive species:
  - No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where focus and BLM special-status species are known or suspected to occur.
  - Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies.
  - Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.
  - Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.
  - When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.
- **CMA LUPA-BIO-12.** For activities that may impact focus or BLM special-status species, implement the following LUPA CMA for noise:
  - To the extent feasible and determined necessary by BLM to protect focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.
  - Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.
  - Use noise controls on standard construction equipment including mufflers to reduce noise.
- **CMA LUPA-BIO-13.** Implement the following CMA for Project siting and design:
  - To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for focus and BLM special-status species (see “avoid to the maximum extent practicable” in Glossary of Terms, EIS Appendix 6).

- The siting of projects along the edges (i.e. general linkage border) of the biological linkages identified in Appendix D of the CDCA Plan, as amended (Figures D-1 and D-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to focus and BLM special-status species dispersal, and (2) informed by existing available information on modeled focus and BLM Special-Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of special-status species connectivity and their associated habitats in the following linkage and connectivity areas:

  - Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC).

- **CMA LUPA-BIO-14.** Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, Project vehicles, and equipment to the delineated Project areas to protect vegetation types and focus and BLM special-status species.

  - Long-term nighttime lighting on Project features will be limited to the minimum necessary for Project security, safety, and compliance with FAA requirements and will avoid the use of constant-burn lighting.

  - All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for focus and BLM special-status species. Long- term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to Project infrastructure.

  - To the maximum extent practicable (see Glossary of Terms, EIS Appendix 6), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.

  - To the maximum extent practicable (see Glossary of Terms, EIS Appendix 6), confine vehicular traffic to designated open routes of travel to and from the Project site, and prohibit, within Project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.

  - To the maximum extent practicable (see Glossary of Terms, EIS Appendix 6), construction of new roads and/or routes will be avoided within focus and BLM special-status species suitable habitat within identified linkages for those focus and BLM special-status species, unless the new road and/or route is beneficial to

minimize net impacts to natural or ecological resources of concern. These areas will have a goal of “no net gain” of Project roads and/or routes.

- Use nontoxic road sealants and soil stabilizing agents.

- **CMA LUPA-BIO-15.** Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/Project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

- **CMA LUPA-BIO-16.** For activities that may impact focus and BLM sensitive birds, protected by the FESA and/or MBTA, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity -specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities.

  Activity-specific measures to avoid and minimize impacts may include, but are not limited to:

  - Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers.

  - For activities that impact bird and bat focus and BLM special-status species, during Project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the Project site using the most current survey methods and best procedures available at the time.

  - Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks.

  - Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes.

  - When fencing is necessary, use bird and bat compatible design standards.

  - Using lighting that does not attract birds and bats or their prey to Project sites including using non-steady burning lights (i.e., red, dual red and white strobe, strobe- like flashing lights) to meet FAA requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen).

- Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.
- Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.

- **CMA LUPA-BIO-17.** For activities that may result in mortality to focus and BLM special-status bird and bat species, a Bird and Bat Conservation Strategy (BBCS)[3] will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The BBCS actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate, and may include, but is not limited to:
  - Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.
  - Activity-specific operational avoidance and minimization actions that reduce the level of mortality on the populations of bird and bat species, such as:
    - Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction.
- **CMA LUPA-BIO-BAT-1.** Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below. Refer to CMA DFA-VPL-BIO-BAT-1 for distances within DFAs and VPLs.
- **CMA LUPA-BIO-COMP-1.** Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA DA will be compensated using the standard biological resources compensation ratio (Table 2.4-1), except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-COMP-2, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.

Refer to CMA LUPA-COMP-1 and 2 for the timing requirements for initiation or completion of compensation.

[3] The BBCS will include a component for a NBBMP.

Table 2.4-1 Biological Resources Compensation Ratio for the Impacts of Activities in the DRECP LUPA Decision Area

STANDARD BIOLOGICAL RESOURCES COMPENSATION RATIO	EXCEPTIONS TO THE BIOLOGICAL RESOURCE STANDARD COMPENSATION RATIO	
1:1	Desert tortoise designated critical habitat	5:1 in same CH unit
	Mohave ground squirrel: key population centers	2:1
	Flat-tailed horned lizard: FTHL Management Areas	RMS
	Wetlands	2:1
	Desert riparian woodland vegetation types	5:1

RMS = Flat-tailed Horned Lizard Rangewide Management Strategy

- **CMA LUPA-BIO-COMP-2.** Birds and Bats – The compensation for the mortality impacts to bird and bat focus and BLM special-status species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-Project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, a Resource Equivalency Analysis (REA). This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D of the DRECP) is used to estimate the necessary compensation fee.

  - Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D of the DRECP. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date DOI mitigation policy.

- **CMA LUPA-BIO-DUNE-1.** Because DRECP sand dune vegetation types and Aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or Aeolian sand transport corridors must conduct studies to verify the location [refer to Appendix D, Figure D-7 of the DRECP] and extent of the sand resource(s) for the activity-specific environmental analysis to determine:

- Whether the proposed activity(s) occur within a sand dune or an Aeolian sand transport corridor
- If the activity(s) is subject to dune/Aeolian sand transport corridor CMAs
- If the activity(s) needs to be reconfigured to satisfy applicable avoidance requirements

- **CMA LUPA-BIO-DUNE-2.** Activities that potentially affect the amount of sand entering or transported within Aeolian sand transport corridors will be designed and operated to:
  - Maintain the quality and function of Aeolian transport corridors and sand deposition zones, unless related to maintenance of existing (at the time of the DRECP LUPA ROD) facilities/operations/activities.
  - Avoid a reduction in sand-bearing sediments within the Aeolian system.
  - Minimize mortality to dune associated focus and BLM special-status species.
- **CMA LUPA-BIO-DUNE-3.** Any facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this transport function must be approved by BLM in coordination with USFWS and CDFW as appropriate.
- **CMA LUPA-BIO-DUNE-4.** Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center (NOC).

  For minor incursions (see “minor incursion” in the Glossary of Terms, EIS Appendix 6) into sand dunes and sand transport areas the activity will be sited in the mapped zone with the least impacts to sand dunes and sand transport and Mojave fringe-toed lizards.
- **CMA LUPA-BIO-DUNE-5.** If suitable habitat characteristics are identified during the habitat assessment, clearance surveys (see Glossary of Terms, EIS Appendix 6) for Mojave fringe-toed lizard will be performed in suitable habitat areas.

The following CMAs will be implemented for bat focus and BLM special-status species, including but not limited to those listed below:

- California leaf-nosed bat;
- Pallid bat; and
- Townsend’s big-eared bat.

- **CMA LUPA-BIO-IFS-3.** All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.

- **CMA LUPA-BIO-IFS-5.** Following the clearance surveys (see Glossary of Terms, EIS Appendix 6) within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist (see Glossary of Terms, EIS Appendix 6) will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way.

    - A designated biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped.

    - As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.

- **CMA LUPA-BIO-IFS-6.** When working in areas where protocol or clearance surveys are required (Appendix D of the DRECP), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.

- **CMA LUPA-BIO-IFS-7.** A designated biologist (see Glossary of Terms, EIS Appendix 6) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.

- **CMA LUPA-BIO-IFS-8.** Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.

- **CMA LUPA-BIO-IFS-9.** Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted.

- **CMA LUPA-BIO-IFS-11.** If Bendire's thrasher is present, conduct appropriate activity-specific biological monitoring (see Glossary of Terms, EIS Appendix 6) to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

- **CMA LUPA-BIO-IFS-12.** If burrowing owls are present, a designated biologist (see Glossary of Terms, EIS Appendix 6) will conduct appropriate activity-specific biological monitoring (see Glossary of Terms, EIS Appendix 6) to ensure avoidance

of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

- **CMA LUPA-BIO-IFS-13.** If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist (see Glossary of Terms, EIS Appendix 6) through the use of one-way doors will occur according to the specifications in Appendix D of the DRECP or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D of the DRECP or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

- **CMA LUPA-BIO-IFS-14.** Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

- **CMA LUPA-BIO-IFS-24.** Provide protection from loss and harassment of active golden eagle nests through the following actions:

  - Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.

- **CMA LUPA-BIO-IFS-25.** Cumulative loss of golden eagle foraging habitat within a 1- to 4-mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20 percent. See CONS-BIO-IFS-5 for the requirement in Conservation Lands.

- **CMA LUPA-BIO-IFS-26.** For activities that impact golden eagles, applicants will conduct a risk assessment per the applicable USFWS guidance (e.g., the Eagle Conservation Plan Guidance) using best available information as well as the data collected in the pre-Project golden eagle surveys.

- **CMA LUPA-BIO-IFS-27.** If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.

- **CMA LUPA-BIO-PLANT-1.** Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant focus and BLM special-status species.

- **CMA LUPA-BIO-PLANT-2.** Implement an avoidance setback of 0.25 mile for all focus and BLM special-status species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant species (Appendix Q, Baseline Biology Report, in the proposed LUPA and Final EIS [2015], or the most recent data and modeling).

- **CMA LUPA-BIO-PLANT-3.** Impacts to suitable habitat for focus and BLM special-status plant species should be avoided to the extent feasible and are limited [capped] to a maximum of 1 percent of their suitable habitat throughout the entire LUPA DA. The baseline condition for measuring suitable habitat is the DRECP modeled suitable habitat for these species utilized in the EIS analysis (2014 and 2015), or the most recent suitable habitat modeling.

- **CMA LUPA-BIO-RIPWET-1.** The riparian and wetland DRECP vegetation types and other features listed in Table 2.4-2 will be avoided to the maximum extent practicable, except for allowable minor incursions (see Glossary of Terms for "avoidance to the maximum extent practicable" and "minor incursion," EIS Appendix 6) with the specified setbacks.

  For minor incursion (see "minor incursion" in the Glossary of Terms, EIS Appendix 6) to the DRECP riparian vegetation types, wetland vegetation types, or encroachments on the setbacks listed in Table 17, the hydrologic function of the avoided riparian or wetland communities will be maintained.

  - Minor incursions in the riparian and wetland vegetation types or other features including the setbacks listed in Table 17 will occur outside of the avian nesting season, February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW if the minor incursion(s) is likely to result in impacts to nesting birds.

Table 2.4-2 Riparian and Wetland Avoidance and Setbacks

RIPARIAN AND WETLAND VEGETATION TYPES OR FEATURES	SETBACK
Riparian Vegetation Types[1]	
Madrean Warm Semi-Desert Wash Woodland/Scrub	200 feet
Mojavean Semi-Desert Wash Scrub	200 feet
Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub	200 feet
Southwestern North American Riparian Evergreen and Deciduous Woodland	0.25 mile
Southwestern North American Riparian/Wash Scrub	0.25 mile
Wetland Vegetation Types[1]	
Arid West freshwater emergent marsh	0.25 mile
Californian Warm Temperate Marsh/Seep	0.25 mile
Other Riparian and Wetland Related Features	
Managed Wetlands[2]	0.25 mile

RIPARIAN AND WETLAND VEGETATION TYPES OR FEATURES	SETBACK
Mojave River[3]	0.25 mile
Undifferentiated Riparian land cover[4]	200 feet

[1]Setbacks are measured from the edge of the mapped riparian or wetland vegetation or water feature per LUPA-BIO-3.
[2]Setback is from managed wetlands including USFWS Refuges, state managed wetlands, and duck clubs in Imperial Valley. See specifications for the Salton Sea below.
[3]Setback is measured from the edge of mapped riparian or edge of FEMA 100-year floodplain of the Mojave River, whichever is further from the center line of the Mojave River channel.
[4]Undifferentiated "Riparian" land cover includes portions of major river courses (Mojave River and Colorado River) within the main channels where riparian vegetation groups were not mapped.

- **CMA LUPA-BIO-RIPWET-3.** For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM special-status riparian and wetland bird species, conduct a pre-construction/activity nesting bird survey for BLM Special-Status riparian and wetland birds according to agency-approved protocols.
    - Based on the results of the nesting bird survey above, setback activities that are likely to impact BLM Special-Status riparian and wetland bird species, including but not limited to pre-construction, construction and decommissioning, 0.25 mile from active nests special-status during the breeding season (February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW). For activities in areas covered by this provision that occur during the breeding season and that last longer than one week, nesting bird surveys may need to be repeated, as determined by BLM, in coordination with USFWS and CDFW, as appropriate. No pre-activity nesting bird surveys are necessary for activities occurring outside of the breeding season.

- **CMA LUPA-BIO-SVF-1.** For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: yucca clones, creosote rings, Saguaro cacti, Joshua tree woodland, microphyll woodland, crucifixion thorn stands. BLM Guidelines for mapping/surveying cacti, yuccas, and succulents shall be followed.

- **CMA LUPA-BIO-SVF-6.** Microphyll woodland: impacts to microphyll woodland (see Glossary of Terms, EIS Appendix 6) will be avoided, except for minor incursions (see Glossary of Terms, EIS Appendix 6).

- **CMA LUPA-BIO-VEG-1.** Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.

- **CMA LUPA-BIO-VEG-2.** Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

- **CMA LUPA-BIO-VEG-3**. Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

- **CMA LUPA-BIO-VEG-5.** All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.

- **CMA LUPA-BIO-VEG-6.** BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.

- **CMA LUPA-SW-13.** BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.

- **CMA LUPA-SW-16.** The 100-year floodplain boundaries for any surface water feature in the vicinity of the Project will be identified. If maps are not available from the Federal Emergency Management Agency (FEMA), these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.

- **CMA LUPA-TRANS-BIO-1.** Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the common raven, and minimize collision risks for birds and bats.

- **CMA LUPA-TRANS-BIO-2.** Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by BLM, in coordination with USFWS and CDFW as appropriate, and will be based on the best available scientific and commercial data regarding the prevention of bird collisions with transmission and guy wires.

- **CMA LUPA-TRANS-BIO-3.** When siting transmission activities, the alignment should avoid, to the maximum extent practicable, being located across canyons or on ridgelines. Site and design sufficient distance between transmission lines to prevent electrocution of condors.

- **CMA LUPA-TRANS-BIO-4.** Siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in Aeolian corridors, rare vegetation alliances and focus and BLM Special-Status species. Transmission substations will be sited to avoid Aeolian corridors, rare vegetation alliances, and sand-dependent focus and BLM special-status species habitats.

- **CMA DFS-VPL-BIO-FIRE-1.** Implement the following standard practice for fire prevention/protection:
  - Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission Project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.

2.4.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant biological resource impacts if it would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or USFWS?

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS?

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f. Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State HCP?

2.4.5 Biological Resources Impact Analysis

Impact BIO 1 - Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation

2.4.5.1 Plants

Federal and State ESA-Listed Plant Species

No plant species currently listed as threatened or endangered, or proposed for listing, under the FESA or CESA would be expected within the California portion of the Project area. Therefore, no impacts to Federal or State listed plants would occur.

Other Special-Status Plant Species

Based on searches of the CDFW's Biogeographic Information and Observation System (BIOS) (CDFW 2016a) and California Natural Diversity Database (CNDDB) a review of the California Native Plant Society (CNPS) online inventory for rate and endangered plants of California (CNPS 2016), and 2016/2017 surveys of the Proposed Action route (HDR 2016; Transcon 2017), a total of 16 special-status and/or rare plant species (FEIS Appendix 3, Table 3.4-4) have been found or could be present in the Project area.

A total of 12 species are present or have at least a moderate potential to occur in the Project area. These species include- Abrams' spurge (*Euphorbia abramsiana* [California Rare Plant Rank {CRPR} 2B.2]), desert unicorn plant (*Proboscidea althaeifolia* [CRPR 4.3]), dwarf germander (*Teucrium cubense* ssp. *depressum* [CRPR 2B.2]), flat-seeded spurge (*Euphorbia platysperma* [CRPR 1B.2 and BLM Sensitive]), glandular ditaxis (*Ditaxis claryana* [CRPR 2B.2]), gravel milkvetch (*Astragalus sabulonum* [CRPR 2B.2]), Harwood's eriastrum (*Eriastrum harwoodii* [CRPR 1B.2 and BLM Sensitive]), Harwood's milkvetch (*Astragalus insularis var. harwoodii* [CRPR 2B.2]), ribbed cryptantha (*Cryptantha costata* [CRPR 4.3]), saguaro (*Carnegiea gigantea* [CRPR 2B.2]), Utah vine milkweed (*Funastrum utahense* [CRPR 4.2]), and winged cryptantha (*Cryptantha holoptera* [CRPR 4.3]). None of these species are classified as endangered, threatened, or rare (CDFW 2016b).

Four other special-status plant species that are not expected or have a low potential to occur include: pink fairy-duster (*Calliandra eriophylla* [CRPR 2B.3]), Las Animas colubrina (*Colubrina californica* [CRPR 2B.3]), California ditaxis (*Ditaxis serrata* var. *californica* [CRPR 3.2]), and bitter hymenoxys (*Hymenoxys odorata* [CRPR 2B.1]) (CDFW 2016b).

Direct impacts to listed or special-status plant species could occur from construction activities that remove vegetation, grade soils, or cause sedimentation, including tower/pole site preparation, and the construction, grading, and creation of access roads. Indirect impacts could include the disruption of native seed banks through soil alterations, the accumulation of fugitive dust, increased erosion and sediment transport, and the colonization of non-native, invasive plant species. Operational impacts could include trampling or crushing due to use of new access roads, increased erosion, and the colonization and spread of noxious weeds. Direct and indirect impacts to listed and/or CRPR 1 and 2 species (should they be present), as a result of Project construction would be considered significant prior to mitigation under this criterion.

Under Section 15380 of the CEQA Guidelines, a species may be considered endangered, rare or threatened, if it can be shown to meet the criteria for State or Federal listing. CEQA Section 15380 provides that a plant or animal species may be treated as 'rare or endangered' even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future" (CPUC 2016).

CRPR plants known or with the potential to occur in the Project area are also included in the CDFW Special Vascular Plants List and are tracked by CDFW's CNDDB. The CNPS Inventory has been a broadly recognized and accepted source of science-based information on the rarity, endangerment, and distribution of California special-status plants since its first edition in 1974. By CNPS's standards, the plants ranked as CRPR 1A, 1B and 2 meet the definitions of Sections 2062 and 2067 (CESA) of the CFGC and are eligible for state listing. The CPUC considers those plants ranked as CRPR 1 or 2 to meet CEQA's Section 15380 criteria, and adverse effects to these species are generally considered "significant" except where substantial data may show otherwise (CPUC 2016).

For the purposes of this analysis, it is assumed that a total of approximately 149.2 acres of natural vegetation communities that have the potential to support special-status plants could be potentially impacted as a result of the Project's implementation. The following special-status plant species would be assumed impacted by the Project: Abrams' spurge, bitter hymenoxys, dwarf germander, flat-seeded spurge, glandular ditaxis, gravel milkvetch, Harwood's eriastrum, Harwood's milkvetch, Las Animas colubrine, pink fairy-duster, and saguaro.

The most effective mechanism for reducing impacts to special-status species is to avoid or minimize on-site impacts. Therefore, the mitigation strategy is to require surveys and avoid populations of rare listed and special-status plants, where detected. As outlined in APM BIO-12, APM BIO-15, BMP BIO-16, BMP BIO-24, BMP BIO-31, BMP BIO-51, BMP BIO-52, BMP BIO-53, and BMP BIO-55, the Project would be designed to minimize impacts to special-status plant species through avoidance. Pre-construction surveys and monitoring will be conducted to avoid impacts by determining the location of succulents (BMP BIO-41), Harwood's eriastrum (BMP BIO-31), and other special-status plant species (APM/BMP BIO-2, BMP BIO-52, MM BIO-CEQA-3, MM- VEG-CEQA-1, and MM VEG-CEQA-2) within the vicinity of work areas. Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a WEAP (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Prohibiting native plant collection without a permit (BMP BIO-37);
- Succulent management (BMP BIO-41);
- Promote dead and downed wood (BMP BIO-42);
- Protection of dune vegetation (BMP BIO-53);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02); and

- Implement biological resources best management practices (MM BIO-CEQA-1).

It is assumed that Project-related impacts would result in the loss of special-status plant species with a California Rare Plant Rank (CRPR) of 1 or 2 and compensation for these impacts would be required. Compensation for permanent impacts to potential special-status plant species habitat will include off-site creation, enhancement, and/or preservation at a minimum 3:1 replacement ratio. Individuals and/or plant populations that cannot be avoided will be mitigated through a combination of efforts including seed collection for restoration, enhancement of known populations, and/or preservation of occupied habitat in accordance with the Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) and the Special-Status Plant Transplantation and Compensation Plan (MM VEG-CEQA-4) that would be developed and implemented as part of the Project.

A Vegetation Management Plan that addresses control of noxious weeds shall be prepared and implemented to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12 and MM VEG-CEQA-1). All disturbed habitat will include restoration with similar species compositions to those present prior to construction at a ratio of 1.5:1. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1. Creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. The Vegetation Management Plan described in MM VEG-CEQA-1 will outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures.

To reduce impacts to special-status plant species to less than significant levels, and meet CEQA requirements, the following CEQA specific mitigation measures have been developed (incorporating applicable APMs, BMPs, and CMAs provided under Section 2.4.5.3): MM BIO-CEQA-1, MM BIO-CEQA-2, MM BIO-CEQA-3, MM VEG-CEQA-1, MM VEG-CEQA-2, MM VEG-CEQA-3, and MM VEG-CEQA-4. Therefore, impacts to special-status plants would be less than significant with mitigation.

2.4.5.2 Wildlife

Federal and State-Listed Species

Species that are classified as threatened, endangered, or proposed and protected under the FESA that could be present in the Project area were identified by querying the USFWS's Information for Planning and Conservation (IPaC) database (USFWS 2016), reviewing BLM RMPs and related documents, and evaluating published and unpublished information about the listed species. Five threatened and endangered species were identified that are known to be present or have at least a moderate potential to occur in or near the California portion of the Project Area, including Mojave Desert tortoise (*Gopherus agassizii*, threatened), razorback sucker (*Xyrauchen texanus*, endangered), southwestern willow flycatcher (*Empidonax traillii extimus*, endangered), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*, threatened), and Yuma Ridgway's rail (*Rallus obsoletus yumanensis*, endangered). Species protected under the FESA are classified as special-status species by the BLM.

Four other listed and proposed species are present in the region but are very rare or absent, with marginal habitat present within the California portion of the Project area: California least tern (*Sterna antillarum browni*, endangered), northern Mexican gartersnake (*Thamnophis eques megalops*, threatened), roundtail chub (*Gila robusta*, proposed threatened), and bonytail chub (*Gila elegans*, endangered).

Special-status wildlife species listed under the CESA that could be present in or near the Project area (FEIS Appendix 3, Table 3.4-15) were identified by searching the CDFW's BIOS and CNDDB (CDFW 2016a), reviewing BLM land use plans (BLM 2002c, 2015, 2016a), and reviewing analyses of other projects that have occurred in the area (BLM 2012, 2014, 2015; Riverside County 2015a, 2015b; CPUC-BLM 2006; CPUC 2011). The analysis of potential Project-related impacts to federal and state-listed species was based on information obtained from applicable reports and databases, a field reconnaissance survey, and information provided by staff of the BLM and CDFW (HDR 2017c). Extensive surveys for wildlife have been conducted on the undeveloped areas of the Palo Verde Mesa (BLM 2012, 2014; BLM and Riverside County Planning Department 2015; BLM & CPUC 2006: CPUC 2011). Additionally, habitat models developed as part of the DRECP and desert tortoise suitability throughout the Mojave Desert were used to evaluate the potential for species to occur (BLM 2016b and Nussear et al. 2009).

Six wildlife species classified as threatened, endangered, or candidates by the CESA are known to be present or have at least a moderate potential to occur in the California portion of the Project area, including: California black rail (*Laterallus jamaicensis coturniculus*, threatened and fully protected), greater sandhill crane (*Grus canadensis tabida*, threatened and fully protected), Mojave Desert tortoise (threatened), razorback sucker (endangered and fully protected), Swainson's hawk (*Buteo swainsoni*, threatened), and Yuma Ridgway's rail (threatened and fully protected). Six other CESA listed species are present in the region, but are very rare or absent with marginal habitat existing within the California portion of the Project area: Arizona Bell's vireo (*Vireo bellii arizonae*, endangered), elf owl (*Micrathene whitneyi*, endangered), Gila woodpecker (*Melanerpes uropygialis*, endangered), gilded flicker (*Colaptes chrysoides*, endangered), southwestern willow flycatcher (endangered), and western yellow-billed cuckoo (endangered).

Greater sandhill crane

Direct impacts from the Project to greater sandhill crane include potential loss of individuals as a result of encounters with construction vehicles and equipment on access roads, staging areas, and work areas; ground disturbance and vegetation removal; and general disturbance due to increased human activity. Construction of the Project could result in permanent and temporary impacts to habitat for the species, thus resulting in a potential impact prior to mitigation. For the purposes of this analysis, it is assumed that a total of 14.2 miles of the proposed alignment could support greater sandhill crane and could be potentially impacted as a result of the Project's implementation (FEIS Appendix 3, Table 3.4-15). Indirect impacts could include collisions with transmission lines, alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, compaction of soils, fugitive dust, increased noise levels from construction activities, and the introduction and establishment of noxious, invasive plant species. Operational impacts include mortalities from construction vehicles and equipment on access roads during routine maintenance and inspection activities, increased human presence, and the

spread of noxious, invasive plant species due to use of new or improved access roads. These impacts would be considered significant prior to mitigation under this criterion.

APMs and BMPs would be implemented to avoid impacts to and/or take of Greater sandhill crane (APM BIO-12, APM BIO-15, BMP BIO-51, and BMP BIO-55). Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species (APM/BMP BIO-2, APM BIO-20, BMP BIO-25, and MM BIO-CEQA-3 and MM WIL-CEQA-1, MM WIL-CEQA-6, and MM WIL-CEQA-8) within the vicinity of work areas. Additionally, focused protocol survey for riparian-dependent birds (MM WIL-CEQA-6 and MM WIL-CEQA-9) and additional avoidance measures would be implemented as outlined in BMP BIO-25, and MM WIL-CEQA-1 (NBBMP).

Other measures that would be implemented to avoid impacts during and after construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Installing escape ramps (APM BIO-9);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Reduce bird collisions and other protections (BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48);
- Implement a NBBMP (BMP BIO-29), manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42); and
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02) and implement biological resources best management practices (MM BIO-CEQA-1 and MM VEG-CEQA-1).

Compensation for temporary impacts to greater sandhill crane habitat would include habitat restoration with similar species compositions to those present prior to construction at a minimum ratio of 1.5:1 (MM VEG-CEQA-1). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism.

Permanent impacts to greater sandhill crane habitat would be compensated at a ratio of 3:1, which may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization. The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve as the required Habitat Restoration, Mitigation, and Monitoring Plan (HRMMP) (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12). Implementation of BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48 would reduce bird collisions and offer other protections for the greater sandhill crane. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

To reduce potential impacts to the greater sandhill crane to less than significant levels, and meet CEQA requirements, the following CEQA specific mitigation measures have been developed (incorporating applicable BMPs APMs, and CMAs provided under Section 2.4.5.3): MM BIO-CEQA-1, MM BIO-CEQA-2, MM BIO-CEQA-3, MM BIO-CEQA-4, MM VEG-CEQA-1, MM WIL-CEQA-1 and MM WIL-CEQA-6. Therefore, impacts to the greater sandhill crane would be less than significant with mitigation.

Mojave Desert tortoise

Direct impacts from the Project to Mojave Desert tortoise include loss of individuals as a result of encounters with construction vehicles and equipment on access roads, staging areas, and work areas (crushed in burrows or overland areas during vegetation removal); ground disturbance and vegetation removal; and general disturbance due to increased human activity. Common ravens are known to perch and nest on transmission structures. Ravens are opportunistic predators of various wildlife species, including juvenile desert tortoises. Improving existing roads and grading new roads into remote areas can lead to increased recreational access to remote areas and increase the potential for encounters (including illegal collection) between people and tortoises. Construction of the Project could also result in permanent and temporary impacts, and thus a potential impact prior to mitigation, to habitat for the species. Indirect impacts could include alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, compaction of soils, fugitive dust, increased noise levels from construction activities, increased predation from common ravens, and the introduction and establishment of noxious, invasive plant species, all of which could adversely affect the Mojave Desert tortoise. Operational impacts include mortalities from construction vehicles and equipment on access roads during routine maintenance and inspection activities, increased human presence, and the spread of noxious, invasive plant species due to use of new or improved access roads. These impacts would be considered significant prior to mitigation under this criterion.

For the purposes of this analysis, it is assumed that a total of 8.16 miles of the proposed alignment could support desert tortoises and would be impacted as a result of the proposed Project’s implementation.

APMs and BMPs would be implemented to avoid impacts to desert tortoise. The Project would be designed to avoid impacts to individuals and/or their habitats, including the desert tortoise, unless absolutely necessary (APM BIO-12, APM BIO-15, BMP BIO-51, BMP BIO-52, and BMP BIO-55). Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of desert tortoise and other special-status species within the vicinity of work areas (APM/BMP BIO-2, APM/BMP BIO-23, APM BIO-25, MM WIL-CEQA-6). Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Installing escape ramps (APM BIO-9);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Preparation and implementation of a Raven Management Plan (BMP BIO-28);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Other desert tortoise protections (BMP BIO-44);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Compensation for all impacts to desert tortoise habitat would be provided at a minimum 2:1 ratio. Compensation for impacts to desert tortoise potential/modeled habitat would include off-site creation, enhancement, and/or preservation, and/or participation in an established mitigation bank program sufficient to satisfy MM WIL-CEQA-10. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve as the HRMMP (APM/BMP BIO-15, MM BIO-CEQA-4) and Noxious Weed Control Plan to address potential impacts associated with the

colonization and spread of noxious weeds (APM BIO-12). Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

To ensure that the applicable BMPs, APMs, and CMAs as outlined in Section 2.4.5.3 meet CEQA requirements, and they reduce impacts to less than significant for the Mojave Desert tortoise, the following MMs have been developed (MM BIO-CEQA-1, MM BIO-CEQA-2, MM BIO-CEQA-3, MM BIO-CEQA-4, MM WIL-CEQA-2, and MM WIL-CEQA-10). Therefore, impacts to the Mojave Desert tortoise would be less than significant with mitigation.

Razorback sucker

This species has been documented within the mainstem of the Colorado River and nearby backwaters in and near the Project area. The Project would span potential aquatic habitat (and USFWS-designated critical habitat) for this species. The Project-related impacts to razorback sucker would be limited to indirect impacts associated with construction activities, such as the accumulation of trash. For the purposes of this analysis, it is assumed that a total of 2.5 acres of the proposed alignment could support razorback sucker and would be avoided during the Project's implementation. These impacts would not be considered significant.

Regardless, APMs and BMPs would be implemented to avoid impacts to razorback sucker including design considerations to span habitat (APM BIO-12, APM BIO-15, BMP BIO-19, BMP BIO-51, and BMP BIO-55). Other measures that would be implemented to avoid impacts during construction include;

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Erosion and dust control (APM BIO-10);
- Riparian habitat avoidance (APM BIO-13);
- Ensuring riparian functioning conditions (BMP BIO-47 and BMP BIO-50);
- Conduct biological construction monitoring (MM BIO-CEQA-3);
- Implement biological resources best management practices (MM BIO-CEQA-1); and
- Avoid/compensate for impacts to jurisdictional waters/wetlands (MM BIO-CEQA-4).

Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

Although mitigation is not required to reduce direct impacts to the razorback sucker because its habitat is being avoided, to meet CEQA requirements, the applicable BMPs, APMs, and CMAs (identified separately under Section 2.4.5.3 below) have been incorporated into MM BIO-CEQA-1, MM BIO-CEQA-2, MM BIO-CEQA-3, and MM BIO-CEQA-4 to ensure there are no indirect impacts to the razorback sucker.

Southwestern willow flycatcher

Southwestern willow flycatchers have been documented along the lower Colorado River within dense stands of willow or salt cedar are adjacent to water or saturated soil. However, this species is not expected to nest within or near the Project area due to the lack of suitable habitat. The proposed Project alignment is characterized by short, patchy overstory of nonnative salt cedar and little or no understory. The species could utilize the Colorado River during migration or other movements along the river. Therefore, the Project-related impacts to southwestern willow flycatcher, if present, would be limited to loss of individuals as a result of collisions with transmission lines and loss of foraging habitat. Due to the temporary nature of the impacts and the availability of foraging habitat in adjacent areas the loss of foraging habitat for wildlife resulting from the construction of the Project would be considered less than significant.

Implementation of BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48 would reduce bird collisions and offer other protections for the southwestern willow flycatcher. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

Additionally, APMs and BMPs would be implemented to avoid and minimize impacts to southwestern willow flycatcher during construction including:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Implement a NBBMP (BMP BIO-29);

- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species (APM/BMP BIO-2, APM BIO-20, BMP BIO-25, MM BIO-CEQA-3, and MM WIL-CEQA-6) within the vicinity of work areas. Additional avoidance measures would be implemented as outlined in the BBCS, which includes the NBBMP (MM WIL-CEQA-1). The Vegetation Management Plan (APM BIO-11) and the HRMMP (APM/BMP BIO-15 and MM VEG-CEQA-1) would outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, a Vegetation Management Plan that addresses control of noxious weeds shall be prepared and implemented to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12 and MM VEG-CEQA-1).

To ensure that the applicable BMPs, APMs, and CMAs as outlined in Section 2.4.5.3 meet CEQA requirements, and they reduce impacts to less than significant for the southwestern willow flycatcher, the following MMs have been developed (MM BIO-CEQA-1, MM BIO-CEQA-3, MM WIL-CEQA-1, and MM WIL-CEQA-6). Therefore, impacts to the southwestern willow flycatcher would be less than significant with mitigation.

Swainson’s hawk

Swainson’s hawks were observed 1 to 10 miles northwest of the Blythe airport during surveys for a proposed solar plant (BLM 2012, Appendix C). However, this species is not expected to nest within or near the Project area. The Project-related impacts to Swainson’s hawk, if present, would be limited to loss of individuals as a result of collisions with transmission lines and loss of foraging habitat. Due to the temporary nature of the impacts and the availability of foraging habitat in adjacent areas the loss of foraging habitat for wildlife resulting from the construction of the Project would be considered less than significant.

Implementation of BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48 would reduce bird collisions and offer other protections for the Swainson’s hawk. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

Additionally, APMs and BMPs would be implemented to avoid and minimize impacts to Swainson’s hawk during construction including:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);

- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14),
- Limiting off-road vehicular travel (APM BIO-17);
- Reduce bird collisions and other protections (BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48),
- Implement a NBBMP (BMP BIO-29),
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02), and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species (APM/BMP BIO-2, APM BIO-20, BMP BIO-25, MM BIO-CEQA-3, and MM WIL-CEQA-6) within the vicinity of work areas. Additional avoidance measures would be implemented as outlined in BBCS which includes the NBBMP (MM WIL-CEQA-1). The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve as the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12). Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

Although mitigation is not required to reduce direct impacts to the Swainson’s hawk to less than significant because of the temporary nature of the impacts and the availability of foraging habitat in adjacent areas, to ensure that the applicable BMPs, APMs, and CMAs as outlined in Section 2.4.5.3 meet CEQA requirements, the following MMs have been developed: MM BIO-CEQA-1, MM BIO-CEQA-3, MM WIL-CEQA-1, and MM WIL-CEQA-6.

Western yellow-billed cuckoo

Western yellow-billed cuckoo have been documented along the Colorado River within relatively large patches of riparian woodlands (generally greater than 50 acres) that typically have a well-developed riparian overstory canopy. The Project would span USFWS-designated critical habitat for the species. However, this species is not expected to nest within or near the Project area due

to the lack of suitable habitat. The proposed Project alignment is characterized by short, patchy overstory of nonnative salt cedar and little or no understory. The species could utilize the Colorado River during migration or other movements along the river. Therefore, the Project-related impacts to western yellow-billed cuckoo, if present, would be limited to loss of individuals as a result of collisions with transmission lines and loss of foraging habitat. Due to the temporary nature of the impacts and the availability of foraging habitat in adjacent areas the loss of foraging habitat for wildlife resulting from the construction of the Project would be considered less than significant.

Implementation of BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48 would reduce bird collisions and offer other protections for the western yellow-billed cuckoo. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

Additionally, APMs and BMPs would be implemented to avoid and minimize impacts to western yellow-billed cuckoo during construction including;

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Implement a NBBMP (BMP BIO-29);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species (APM/BMP BIO-2, APM BIO-20, BMP BIO-25, MM BIO-CEQA-3, and MM WIL-CEQA-6) within the vicinity of work areas. Additional avoidance measures would be implemented as outlined in the BBCS which includes the NBBMP (MM WIL-CEQA-1). The Vegetation Management Plan (APM BIO-11) and the HRMMP (APM/BMP

BIO-15 and MM VEG-CEQA-1) would outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, a Vegetation Management Plan that addresses control of noxious weeds shall be prepared and implemented to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12 and MM VEG-CEQA-1).

To ensure that the applicable BMPs, APMs, and CMAs as outlined in Section 2.4.5.3 meet CEQA requirements, and they reduce impacts to less than significant for the western yellow-billed cuckoo, the following MMs have been developed (MM BIO-CEQA-1, MM BIO-CEQA-3, MM WIL-CEQA-1, and MM WIL-CEQA-6). Therefore, impacts to the western yellow-billed cuckoo would be less than significant with mitigation.

California Black Rail and Yuma Ridgway's rail

Direct impacts from the Project to California black rail and Yuma Ridgway's rail include loss of individuals as a result of encounters with construction vehicles and equipment on access roads, staging areas, and work areas; ground disturbance and vegetation removal; and general disturbance due to increased human activity. Construction of the Project could result in permanent and temporary impacts to habitat for the species.

For the purposes of this analysis, it is assumed that a total of 1.2 miles of the proposed alignment could support California black rail and Yuma Ridgway's rail and could be potentially impacted as a result of the Project's implementation (FEIS Appendix 3, Table 3.4-15). Indirect impacts could include alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, compaction of soils, fugitive dust, increased noise levels from construction activities, and the introduction and establishment of noxious, invasive plant species. Operational impacts include mortalities from construction vehicles and equipment on access roads during routine maintenance and inspection activities, increased human presence, and the spread of noxious, invasive plant species due to use of new or improved access roads. These impacts would be considered significant without mitigation.

APMs and BMPs would be implemented to avoid impacts to and/or take of California black rail and Yuma Ridgway's rail. The Project would be designed to avoid impacts to individuals and/or their habitats (APM BIO-12, APM BIO-15, BMP BIO-51, and BMP BIO-55). Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species (APM/BMP BIO-2, APM BIO-20, BMP BIO-25, MM BIO-CEQA-3, MM WIL-CEQA-1, and MM WIL-CEQA-6) within the vicinity of work areas. Additionally, focused protocol survey for riparian-dependent birds (MM WIL-CEQA-1 and MM WIL-CEQA-6) and additional avoidance measures would be implemented as outlined in BMP BIO-25 and MM WIL-CEQA-1 (BBCS/NBBMP). Other measures that would be implemented to avoid impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);

- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Installing escape ramps (APM BIO-9);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Reduce bird collisions and other protections (BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48);
- Implement a NBBMP (BMP BIO-29);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Limit vegetation removal (BMP VEG-1 and BMP VEG-2); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Compensation for temporary impacts to potential habitat would include on-site habitat creation or enhancement with similar species compositions to those present prior to construction at a ratio of 1.5:1. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Compensation for permanent impacts to habitat would include a) off-site creation, enhancement, and/or preservation, and/or b) participation in an established mitigation bank program at a minimum 3:1 ratio. The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve as the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12). Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

To ensure that the applicable BMPs, APMs, and CMAs as outlined in Section 2.4.5.3 meet CEQA requirements, and reduce potential impacts to the California black rail and Yuma Ridgeway’s rail to less than significant levels, the following MMs have been developed: MM BIO-CEQA-1, MM BIO-CEQA-2, MM BIO-CEQA-3, MM WIL-CEQA-1, MM WIL-CEQA-6, MM VEG-CEQA-1, and MM VEG-CEQA-4. Therefore, impacts to the California black rail and Yuma Ridgeway’s rail would be less than significant with mitigation.

Other Special-Status Wildlife Species

Similar to the Federal and state-listed species, the analysis of potential Project-related impacts to other special-status wildlife species (including, but not limited to, BLM Sensitive Species, CDFW Special Animals, and CDFW Species of Special Concern) was based on information obtained from applicable reports and databases, a field reconnaissance survey, extensive surveys, and information provided by staff of the BLM and CDFW (HDR 2017c, BLM 2012, 2014; BLM and Riverside County Planning Department 2015; BLM & CPUC 2006: CPUC 2011). Additionally, habitat models developed as part of the DRECP were used to evaluate the potential for species to occur (BLM 2016b). Another 32 special-status wildlife species (California Species of Special Concern, California Fully Protected, or BLM Sensitive) are present or could occur within the California portion of the Project area. A total of 14 special-status wildlife species are present or have at least a moderate potential to occur, including: American badger (*Taxidea taxus*), burrowing owl (*Athene cunicularia*), Couch's spadefoot (*Scaphiopus couchii*), Le Conte's thrasher (*Toxostoma lecontei*), loggerhead shrike (*Lanius ludovicianus*), Mojave fringe toed lizard (*Uma scoparia*), mountain plover (*Charadrius montanus*), northern harrier (*Circus cyaneus*), Townsend's big-eared bat (*Corynorhinus townsendii*), vermilion flycatcher (*Pyrocephalus rubinus*), western yellow bat (*Lasiurus xanthinus*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), and Yuma myotis (*Myotis yumanensis*). Other special-status wildlife species that are not expected or have a low potential to occur include Arizona myotis (*Myotis occultus*), Bendire's thrasher (*Toxostoma bendirei*), California leaf-nosed bat (*Macrotus californicus*), cave myotis (*Myotis velifer*), Colorado River cotton rat (*Sigmodon arizonae plenus*), crissal thrasher (*Toxostoma crissale*), desert bighorn sheep (*Ovis canadensis nelsoni*), golden eagle (*Aquila chrysa*etos), long-eared owl (*Asio otus*), pallid bat (*Antrozous pallidus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), short-eared owl (*Asio flammeus*), Sonoran mud turtle (*Kinosternon sonoriense*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), Sonora yellow warbler (*Setophaga petechia sonorana*), summer tanager (*Piranga rubra*), yellow-breasted chat (*Icteria virens*), and Yuma mountain lion (*Felis concolor brownii*). These species will not be analyzed further. Refer to FEIS Appendix 3 Table 3.4-14 for a complete list of these species.

Amphibians and Reptiles

Direct impacts to Couch's spadefoot toad and Mojave fringe-toed lizard could include loss of individuals as a result of encounters with construction vehicles and equipment on access roads, staging areas, and work areas (crushed in burrows or overland areas during vegetation removal); ground disturbance and vegetation removal within modeled habitat; and general disturbance due to increased human activity. Construction of the Project could also result in permanent and temporary impacts to habitat for the species. For the purposes of this analysis, it is assumed that a total of 16.7 miles of the proposed alignment could support Couch's spadefoot toad and 8.1 miles of sand dune and partially stabilized sand dune habitat (as identified in the DRECP and other renewable projects in the vicinity) could support Mojave fringe-toed lizard and could be potentially impacted as a result of the Project's implementation (FEIS Appendix 3, Table 3.4-15). Indirect impacts could include alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, disruption of geomorphic processes (e.g., sand transportation), compaction of soils, fugitive dust, increased noise levels from construction activities, and the introduction and establishment of noxious, invasive plant species. Operational

impacts include mortalities from construction vehicles and equipment on access roads during routine maintenance and inspection activities, increased human presence, and the spread of noxious, invasive plant species due to use of new or improved access roads. These impacts would be considered significant without mitigation.

APMs and BMPs would be implemented to avoid impacts to Couch's spadefoot toad and Mojave fringe-toed lizard. The Project would be designed to avoid impacts to individuals and/or their habitats unless absolutely necessary (APM BIO-12, APM BIO-15, BMP BIO-51, BMP BIO-52, and BIO BIO-55). Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species within the vicinity of work areas (APM/BMP BIO-2, APM BIO-25, MM WIL-CEQA-11, and MM BIO-CEQA-3). Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Installing escape ramps (APM BIO-9);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Other measures to address potential indirect impacts specifically for the Mojave fringe-toed lizard and associated with alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, disruption of sand transportation, and compaction of soils include: preparing and implementing a Fringe-toed Lizard Linear ROW Protection Plan (BMP BIO-49), protecting dune vegetation and sand transport processes (BMP BIO-53 and BMP BIO-54), and replacement of habitat lost (MM WIL-CEQA-9).

Compensation for temporary impacts to potential/modeled Couch's spadefoot toad and Mojave fringe-toed lizard habitat would include habitat restoration or enhancement with similar species compositions to those present prior to construction at a minimum ratio of 1.5:1 (MM WIL-

CEQA-9). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Compensation for permanent impacts to potential/modeled habitat would include a) off-site creation, enhancement, and/or preservation, and/or b) participation in an established mitigation bank program at a minimum 3:1 ratio (MM WIL-CEQA-9). The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve at the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12). Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands. Implementation of the above-referenced APMs, BMPs, and CEQA MMs would reduce impacts on special-status amphibians and reptiles to less than significant levels.

Birds

Direct impacts to burrowing owl, Le Conte’s thrasher, loggerhead shrike, mountain plover, northern harrier, vermilion flycatcher, and yellow-headed blackbird include loss of individuals as a result of collisions with construction vehicles and equipment on access roads, staging areas, and work areas; ground disturbance and vegetation removal; and general disturbance due to increased human activity. Construction of the Project could also result in permanent and temporary impacts to habitat for these species. For the purposes of this analysis, it is assumed that a total of 149.2 acres of natural habitat that could support these species would be potentially impacted as a result of the Project’s implementation. Indirect impacts to these special-status birds could include collisions with transmission lines, increased noise levels from heavy equipment, human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect bird nesting.

Construction during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. The increased noise levels resulting from the construction of the Project would likely temporarily alter and/or preclude the breeding activities for many common and sensitive bird species known to occur along the Project route. Some species of birds however will likely nest in and adjacent to the Project during construction and maintenance activities. Depending on the species, birds may actively nest on the ground close to equipment or even on idle construction equipment. In other arid ecosystems in southern California, birds have been documented nesting on vehicles, foundations, construction trailers, and other equipment left overnight or during a long weekend. In areas where construction may be phased birds may quickly utilize these features as nest sites. Many of the birds that would be likely to use these types of nesting substrates are common species such as ravens, house finches, and doves (CPUC 2016).

When possible, construction and maintenance activities would occur outside of the recognized breeding season (generally February – September [as early as January for some raptors]). However, if construction activities would occur during the breeding season, it is possible that these activities would exclude some species of birds that are less tolerant of anthropogenic disturbance. If birds elect to nest in areas within close proximity to on-going construction activities during the breeding season the qualified avian biologist (refer to MM WIL-CEQA-1 and MM WIL-CEQA-6 [Conduct pre-construction surveys for nesting and breeding birds and implement avoidance measures] below) will implement a standard avoidance buffer (300 feet [500 feet for raptors]) around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. With the exception of a few non-native birds such as European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*), the loss of active bird nests or young is regulated by the Federal MBTA and California Fish and Game Code Section 3503 and would be considered a significant impact without mitigation.

Unless the Fish and Game Code or its implementing regulations provide otherwise, under California law it is unlawful to:

- Take a bird, mammal, fish, reptile, or amphibian (Fish and Game Code § 2000);
- Take, possess, or needlessly destroy the nest or eggs of any bird (Fish and Game Code § 3503);
- Take, possess, or destroy any bird of prey in the orders Strigiformes (owls) and Falconiformes (such as falcons, hawks and eagles) or the nests or eggs of such bird (Fish and Game Code § 3503.5);
- Take or possess any of the thirteen fully protected bird species listed in Fish and Game Code section 3511;
- Take any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird) (Fish and Game Code § 3800);
- Take or possess any migratory non-game bird as designated in the MBTA2 or any part of such bird, except as provided by rules or regulations adopted by the Secretary of the Interior under the MBTA (Fish and Game Code § 3513);

Take, import, export, possess, purchase, or sell any bird (or products of a bird), listed as an endangered or threatened species under the California Endangered Species Act unless the person or entity possesses an Incidental Take Permit or equivalent authorization from CDFW (Fish and Game Code § 2050 et seq.).

APMs and BMPs would be implemented to avoid impacts to special-status bird species. The Project would be designed to avoid impacts to individuals and/or their habitats, unless absolutely necessary (APM BIO-12, APM BIO-15, BMP BIO-51, and MM BIO-CEQA-4, MM WIL-CEQA-1, and MM WIL-CEQA-6). In particular, APM BIO-13 requires that riparian areas and

xeroriparian drainages that occur within the easement would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. This would avoid and/or minimize impacts to riparian-dependent species. Pre-construction surveys and monitoring would be conducted to avoid impacts by determining the location of special-status species (APM/BMP BIO-2, APM BIO-20, BMP BIO-25, and MM BIO-CEQA-3 and MM WIL-CEQA-6) within the vicinity of work areas. Additionally, focused protocol survey for riparian-dependent birds (MM WIL-CEQA-6 and MM WIL-CEQA-8) and additional avoidance measures would be implemented as outlined in BMP BIO-25, MM WIL-CEQA-1, and MM WIL-CEQA-1 (BBCS/NBBMP). Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Installing escape ramps (APM BIO-9), erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Implement a BBCS/NBBMP (BMP BIO-29);
- Prepare and implement a management plan for burrowing owls (BMP BIO-30);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Protect active golden eagle nests (BMP BIO-45);
- Limit vegetation removal (BMP VEG-1 and BMP VEG-2); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Additionally, implementation of BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48 would reduce indirect impacts associated with bird collisions and offer other protections for the special-status birds.

Compensation for temporary impacts to special-status bird habitat will include on-site habitat restoration with similar species compositions to those present prior to construction at a minimum ratio of 1.5:1. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite

shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Permanent impacts to special-status bird habitat would be compensated at a minimum ratio of 2:1, which may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization (MM BIO-CEQA-4 and MM WIL-CEQA-1). The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve as the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12). Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands. Implementation of the above-referenced APMs, BMPs, and CEQA MMs would reduce impacts on avian species to less than significant levels.

Mammals

Direct impacts to American badger, Townsend's big-eared bat, western yellow bat, and Yuma myotis include loss of individuals as a result of encounters with construction vehicles and equipment on access roads, staging areas, and work areas; ground disturbance and/or vegetation removal; and general disturbance due to increased human activity. Construction of the Project could also result in permanent and temporary impacts to foraging habitat for these species. For the purposes of this analysis, it is assumed that a total of 16.7 miles of the proposed alignment could support American badger, and 8.1 miles could support Townsend's big-eared bat, western yellow bat, and Yuma myotis (FEIS Appendix 3, Table 3.4-15). These portions of the alignment could be potentially impacted as a result of the Project's implementation. Indirect impacts could include alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, compaction of soils, fugitive dust, increased noise levels from construction activities, and the introduction and establishment of noxious, invasive plant species. Operational impacts include mortalities from construction vehicles and equipment on access roads during routine maintenance and inspection activities, increased human presence, and the spread of noxious, invasive plant species due to use of new or improved access roads. These impacts would be considered significant without mitigation.

APMs and BMPs would be implemented to avoid impacts to special-status mammals. The Project would be designed to avoid impacts to special-status species and/or their habitats unless absolutely necessary (APM BIO-13, APM BIO-15, BMP BIO-40, BMP BIO-51, BMP BIO-52, and BMP BIO-55); the majority of Project-related impacts would occur within agricultural areas that provide limited suitable habitat (breeding/nesting/denning) for most special-status species. In particular, BMP BIO-40 would require a 500-foot buffer around any occupied maternity roost or presumed occupied maternity roost. Additionally, APM BIO-13 requires that riparian areas and xeroriparian drainages that occur within the easement would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. A pre-construction survey and monitoring for special-status mammal species would be implemented as outlined in APM BIO-02 and BMP BIO-25. Pre-construction surveys for roosting bats would be

conducted during the maternity season (1 March to 31 July) within 300 feet of the Project's activities and active maternity roosts or hibernacula would be avoided (MM WIL-CEQA-4 and MM WIL-CEQA-5). If avoidance is not possible, then the species would be safely evicted per MM WIL-CEQA-4 and MM WIL-CEQA-5. Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Installing escape ramps (APM BIO-9);
- Erosion and dust control (APM BIO-10);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36);
- Promote dead and downed wood (BMP BIO-42);
- Limit vegetation removal (BMP VEG-01 and BMP VEG-02); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Compensation for temporary impacts to special-status mammal species habitat would include on-site habitat restoration with similar species compositions to those present prior to construction at a minimum ratio of 1.5:1 (MM VEG-CEQA-1). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Permanent impacts to special-status mammal species habitat would be compensated at a minimum ratio of 2:1, which may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization (MM BIO-CEQA-4). The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. Further, the Vegetation Management Plan shall serve as the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12). Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to

listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands. Implementation of the above-referenced APMs, BMPs, and CEQA MMs would reduce impacts on special-status mammal species to less than significant levels.

2.4.5.3 Compliance with CDCA CMAs Applicable to Special-Status Plants and Wildlife

The following CMAs would be applicable to special-status plants and wildlife, and would be addressed by the noted Project APMs, BMPs, and MMs.

CMA DFA-BIO-IFS-1 and CMA DFA-BIO-IFS-2 are specific to survey and setback requirements for a discrete list of wildlife species (i.e., desert tortoise). Compliance with these CMAs would be satisfied with implementation of APM-BIO-2 and MM BIO-CEQA-1 and MM WIL-CEQA-10 which require pre-construction surveys prior to the start of Project activities and setback buffers for specific listed and/or special-status species, APM BIO-23 and BMP-23 which require protection measures specific to desert tortoise, APM BIO-20 and MMs WIL-CEQA-1 and WIL-CEQA-6 which require protection for nesting birds during construction and the development of a NBBMP. Compliance would also be met with BMP BIO-30 and MM WIL-CEQA-7 which require the development of a management plan and focused pre-construction surveys and avoidance measures for burrowing owl.

CMA DFA-VPL-BIO-DUNE-1 is specific to the avoidance of dune vegetation. Compliance with this CMA would be satisfied with the implementation of BMP BIO-53 which would site Project facilities to avoid dune vegetation. Unavoidable impacts to dune vegetation would be limited and access roads that would be sited to minimize unavoidable impacts. Access road would be unpaved, and access roads would be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transport.

CMA LUPA-BIO-1 is specific to conducting a habitat assessment of focus and BLM special-status species suitable habitat, delineation of the DRECP vegetation types, rare alliances, and special features. Compliance with this CMA is achieved through data contained in the Biological Resources Technical Reports (including rare plant studies), which is incorporated into Chapter 3 of the TES. Further compliance is achieved by APM BIO-24 and BMP BIO-31 which include pre-construction surveys for sensitive plants, focused surveys for Harwood’s eriastrum, and protection measures for Harwood’s eriastrum. Additional compliance is achieved with BMP BIO-11 which would require the development of a Vegetation Management Plan, APM BIO-13 which requires the avoidance of riparian habitat, APM BIO-25 which requires pre-construction surveys for sensitive wildlife, and BMP BIO-49 that requires a Fringe-toed Lizard Linear ROW Protection Plan. APM BIO-23 and BMP BIO-23 achieve compliance by establishing desert tortoise protection measures while BMP BIO-30 and MM WIL-CEQA-7 require a NBBMP, focused pre-construction survey for burrowing owl, and avoidance measures. MM WIL-CEQA-4 would require focused pre-construction survey efforts for nesting and breeding birds and MM WIL-CEQA-8 requires protocol surveys for Arizona Bell’s vireo, southwestern willow flycatcher, and willow flycatcher.

CMA LUPA-BIO-2 specifies that a designated biologist(s) conduct and oversee Project activities requiring biological monitoring during pre-construction and decommissioning. Compliance with

this CMA is achieved through application of APM BIO-02, BMP BIO-02, and MM BIO-CEQA-3 which require that qualified/designated biologists be retained to monitor construction of the Project.

CMA LUPA-BIO-3 specifically addresses setbacks for sensitive resources. Compliance with this CMA is achieved, in part, through application of APM BIO-04 and APM BIO-11 which require the development of a Vegetation Management Plan and the fencing/field identification of sensitive resources, BMP BIO-31 which provides protection measures for Harwood's eriastrum, and BMP BIO-50 and BMP BIO-52 which require setbacks and buffers for sensitive habitat, including riparian communities.

CMA LUPA-BIO-4 is specific to activities that may impact focus and BLM special-status species and establishes seasonal restrictions on Project activities. Compliance with this CMA is achieved through application of APM BIO-20, BMP BIO-31, MM VEG-CEQA-1, MM VEG-CEQA-3, and MM WIL-CEQA-6 which require seasonal nesting surveys, provide restrictions for working within occupied Harwood's eriastrum habitat, provide for species specific seasonal restriction dates, preparation of a NBBMP.

CMA LUPA-BIO-5 specifies the need for a worker education program. Compliance with this CMA is achieved through application of APM BIO-1, BMP BIO-01 and MM BIO-CEQA-2 which require the development/implementation of a Worker Environmental Awareness Program.

CMA LUPA-BIO-6 is specific to the needs for subsidized predator standards, approved by the BLM, in coordination with the USFWS and CDFW. Compliance with this CMA is achieved through application of APM BIO-05, APM BIO-06, and BMP BIO-28 which prohibit trash dumping and firearms, provide specifics for refuse disposal, and require the development of a Raven Management Plan. Compliance is also achieved through application of APM BIO-12 and BMP BIO-31 which require the development of a Noxious Weed Control Plan and specifics for the treatment of Harwood's eriastrum. Further compliance would be achieved by BMP AQ-01 that would require that dust palliatives be applied, in lieu of water, to inactive construction areas and BMP BIO-34 which would provide for the prevention of puddles during dust abatement.

CMA LUPA-BIO-7 and CMA LUPA-BIO-8 are specific to restoration of impacted areas from Project construction, operation, and decommissioning. Compliance with this CMA is achieved through application of APM BIO-15 and MM VEG-CEQA-1 which require the development of a Habitat Restoration, Mitigation, and Monitoring Plan.

CMA LUPA-BIO-8 specifies that all activities that are required to close and decommission the Project would specify and implement Project-specific closure and decommissioning actions that meet the approval of BLM. Compliance with this CMA is achieved through application of APM BIO-11, BMP BIO-11, APM BIO-15, BMP BIO-15, and MM VEG-CEQA-1 which require the development of a Vegetation Management Plan and development of a Habitat Restoration, Mitigation, and Monitoring Plan.

CMA LUPA-BIO-9 is specific to the implementation of practices pertaining to water and wetlands dependent resources. Compliance with this CMA is achieved through application of APM BIO-08, APM BIO-07, APM BIO-10, BMP HAZ-03, and APM HAZ-01 which require that no monofilament plastic fencing be used, erosion and dust control measures be

implemented, the Applicant to provide the BLM with an inventory of equipment and materials to cover each hazardous material used at any time during the life of the Project, and that the Project would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazmat Containment Plan and Emergency Response Plan for the Project.

CMA LUPA-BIO-10 specifies policies and guidance on integrated weed management actions during all phases of Project activities. Compliance with this CMA is achieved through application of APM BIO-12 which requires the development of a Noxious Weed Control Plan that is approved by the BLM.

CMA LUPA-BIO-11 is specific to control measures for nuisance animals and invasive species. Compliance with this CMA is achieved through application of APM BIO-12 and MM VEG-CEQA-1 which requires the development of a Noxious Weed Control Plan that is approved by the BLM and development of a plan to address nuisance animals.

CMA LUPA-BIO-12 specifies practices and controls related to noise effects on wildlife. Compliance with this CMA is achieved through application of BMP NO-07 which to the extent feasible, requires the location of stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat. Compliance is also achieved through application of APM NO-2 which requires that in areas in close proximity to sensitive receptors, quiet equipment (for example, equipment that incorporates noise control elements into the design; quiet model air-compressors or generators can be specified) would be used during construction whenever possible.

CMA LUPA-BIO-13 is specific to the implementation of measures related to siting and design of the Project. Compliance with this CMA is achieved through application of APM BIO-11, BMP BIO-11, APM BIO-13, and BMP BIO-31 which require the preparation of a Vegetation Management Plan, the avoidance of riparian habitat, measures specific to the protection of Harwood's eriastrum, and the avoidance of rare plant alliances. BMP BIO-52 serves to minimize impacts to microphyll woodlands. Compliance is also achieved with the implementation of APM BIO-4, APM BIO-22, and APM BIO-23 which require fencing or other field identification of environmentally sensitive areas, and protection measures specific to desert tortoise. BMP BIO-33 requires that all long-term night lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Compliance with this CMA is also achieved through application of APM BIO-03, BMP BIO-03, APM BIO-17, BMP BIO-53, BMP BIO-55, and BMP TT-04 which requires the stockpiling of material only within approved work areas, limiting of vehicular traffic to establish roads, protection of dune vegetation and sand transport corridors, and the development of an Access Plan to identify all routes where new disturbance and/or cross-country travel is proposed. BMP TT-08 would, within Project boundaries, prohibit cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance. Lastly, compliance with this CMA is also achieved through application of BMP WQ-04, APM AQ-01, and BMP AQ-01 which require palliatives be used for dust control would be non-petroleum products in addition to non-toxic, and the implementation of basic and advanced control measures to manage dust within the Project.

CMA LUPA-BIO-15 specifies that state-of-the-art construction and installation techniques be used to minimize site disturbance, soil erosion, and compaction. Compliance with this CMA is

achieved through application of BMP BIO-38 and BMP VEG-01 which require the use of state-of-the-art construction and installation techniques where appropriate and the that the removal of vegetation resources would be conducted in accordance with BLM IB 2012-097.

CMA LUPA-BIO-16 specifies activity specific measures to avoid and minimize impacts to focus and BLM sensitive birds, FESA and MBTA protected birds, and bats. Compliance with this CMA is achieved through application of BMP BIO-19, APM BIO-21, BMP BIO-21, BMP BIO-29, BMP BIO-30, and BMP BIO-45 which require specific measures when working near the Colorado River, measures for the reduction of avian collision and electrocution, development of a NBBMP, and protection measures for loss of and harassment of golden eagles. Compliance is also achieved through the implementation of MM BIO-CEQA-4, MM VEG-CEQA-1, and MM WIL-CEQA-1 which requires the development of a Habitat Restoration, Mitigation and Monitoring Plan, conducting pre-construction surveys for nesting and breeding birds and the implementation of avoidance measures, and the development of a NBBMP. BMP BIO-33 would also assist in achieving compliance by placing restrictions on construction lighting for the Project and require the use of bird and bat friendly fencing.

CMA LUPA-BIO-17 is specific to measures related to activities that may result in mortality to focus and BLM special–Status bird and bat species. Compliance with this CMA is achieved through application of BMP BIO-19, APM BIO-21, BMP BIO-21, BMP BIO-29, BMP BIO-30, and BMP BIO-45 which require specific measures when working near the Colorado River, measures for the reduction of avian collision and electrocution, development of a NBBMP, and protection measures for loss of and harassment of golden eagles. Compliance is also achieved through the implementation of MM BIO-CEQA-4 and MM WIL-CEQA-1 which requires the development of a Habitat Restoration, Mitigation and Monitoring Plan, conducting pre-construction surveys for nesting and breeding birds and the implementation of avoidance measures, and the development of a NBBMP. BMP BIO-33 would also assist in achieving compliance by placing restrictions on construction lighting for the Project and require the use of bird and bat friendly fencing.

Compliance with this CMA is also achieved through application of BMP BIO-20, BMP BIO-46, BMP BIO-47, BMP BIO-50, BMP BIO-51, and BMP BIO-52 which require protection for migratory birds during construction, compensation for loss of desert riparian woodland, management of all riparian areas, engineering controls to minimize impacts on dry wash, dry wash woodland, and chenopod scrub, micrositing of structures to achieve adequate conductor clearance, and avoidance of riparian habitat and rare plant alliances.

CMA LUPA-BIO-BAT-1 specifies that the Project shall not be sited within 500 feet of an occupied maternity roost or presumed occupied maternity roost. Compliance with this CMA is achieved through application of BMP BIO-40 and MM WIL-CEQA-4 and MM WIL-CEQA-5 which require siting of Project components 500 feet from occupied maternity roost or presumed occupied maternity roosts and surveys for maternity colonies or hibernaculum for BLM Focus and Special Status Bat Species.

CMA LUPA-BIO-COMP-1 is specific to compensation requirements for impacts to biological resources. Compliance with this CMA would be achieved through implementation of BMP BIO-46, MM BIO-CEQA-4, MM VEG-CEQA-1, and MM VEG-CEQA-4 which require compensation for loss of desert riparian woodland, transplantation and/or compensation for

impacts to State and Federally threatened, proposed, petitioned, and Candidate plants, compensation for impacts to special-status plant species, and the compensation for impacts to sensitive vegetation communities.

CMA LUPA-BIO-COMP-2 specifies requirements pertaining to compensation for the mortality impacts to bird and bat focus and BLM special-status species from activities. Compliance with this CMA would be achieved through implementation of BMP BIO-46, MM BIO-CEQA-5, MM WIL-CEQA-1, MM WIL-CEQA-4, and MM WIL-CEQA-5 which require compensation for loss of desert riparian woodland, compensation for impacts to State and Federally threatened, proposed, petitioned, and Candidate plants, compensation for impacts to special-status plant species, development of a bird and bat mortality compensatory mitigation fee, and the compensation for impacts to sensitive vegetation communities.

CMA LUPA-BIO-DUNE-1 is specific to required studies pertaining to Aeolian sand transport corridors. Compliance with this CMA is partially achieved through data contained in the Biological Resources Technical Reports, which is incorporated into Chapter 3 of the TES and analysis presented in Chapter 4 of the TES. To further achieve compliance implementation of BMP BIO-53 and BMP BIO-54 would require the protection of dune vegetation, and that all activities would be designed and operated to facilitate the flow of sand across activity sites to avoid the trapping or diverting of sand from the Aeolian corridor. Structures would take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences would be designed to allow sand to flow through and not be trapped.

CMA LUPA-BIO-DUNE-2 specifies restrictions for Project activities that potentially affect the amount of sand entering or transported within Aeolian sand transport corridors. Compliance with this CMA is achieved through application of BMP BIO-54, BMP BIO-31, BMP BIO-49, and BMP BIO-53 which would require the protection of dune vegetation and sand transport, measures for the protection/treatment of Harwood's eriastrum, pre-construction surveys, avoidance of Harwood's eriastrum individuals through micrositing of facilities, and development of a Fringe-toed Lizard Linear ROW Protection Plan. In addition, APM BIO-2 and BMP BIO-2 require the presence of a biological monitor who will clear work areas prior to the start of construction activities and would relocate if necessary.

CMA LUPA-BIO-DUNE-3 specifies that facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Compliance with this CMA is achieved through application of BMP WQ-06, BMP WQ-07, and BMP BIO-49 which will require the avoidance of hydrologic alterations, no permanent structures would be placed in floodplains that are narrower at the ROW crossing than the typical span width of 1,200 feet (i.e., it is assumed that such floodplains could be spanned and avoided), and development of a Fringe-toed Lizard Linear ROW Protection Plan.

CMA LUPA-BIO-DUNE-4 is specific to the mapping of dune formations and other sand accumulations according to mapping standards established by the BLM National Operations Center. Compliance with this CMA is achieved through application of BMP BIO-49, BMP BIO-53, BMP BIO-54, and BMP BIO-55 which would require the development of a Fringe-toed Lizard Linear ROW Protection Plan, the protection of dune vegetation and sand transport and

that new roads/routes avoid focus and BLM special-status species suitable habitat within identified linkages for those focus and BLM special-status species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. MM WIL-CEQA-9 would require that dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center.

CMA LUPA-BIO-DUNE-5 specifies clearance surveys for Mojave fringe-toed lizard within suitable habitat. Compliance with this CMA is achieved through application of BMP BIO-02, APM BIO-25, BMP BIO-49, MM WIL-CEQA-9, and MM BIO-CEQA-3 which require biological monitoring, pre-construction surveys, and surveys for sensitive species, the development of a Fringe-toed Lizard Linear ROW Protection Plan.

CMA LUPA-BIO-IFS-3 is specific to design of culverts to allow unrestricted access by desert tortoises. Compliance with this CMA is achieved through application of BMP BIO-44 which presents desert tortoise protection measures, including culvert design requirements.

CMA LUPA-BIO-IFS-5 specifies that sites that are fenced with long-term desert tortoise exclusion fencing are monitored by a designated biologist during initial clearing and grading activities. Compliance with this CMA is achieved through application of APM BIO-23, BMP BIO-23, BMP BIO-44, and MM WIL-CEQA-10 which require the implementation of desert tortoise protection measures and the biological monitoring during initial site clearance activities.

CMA LUPA-BIO-IFS-6 and CMA LUPA-BIO-IFS-7 are specific to the requirement for protocol or clearance surveys and monitoring for desert tortoise during geotechnical testing activities. Compliance with this CMA is achieved through application of APM BIO-02, APM BIO-23, APM BIO-25, BMP BIO-44, MM BIO-CEQA-3, MM BIO-CEQA-4, and MM WIL-CEQA-10 which require biological monitoring, pre-construction surveys, and desert tortoise protection measures.

CMA LUPA-BIO-IFS-8 specifies that the ground under vehicles be checked for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. Compliance with this CMA is achieved through application of APM BIO-23 and BMP BIO-44 which provide for desert tortoise protection measures.

CMA LUPA-BIO-IFS-9 specifies that vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted. Compliance with this CMA is achieved through application of BMP BIO-44, MM BIO-CEQA-3, MM BIO-CEQA-4, and MM WIL-CEQA-10 which require the implementation of desert tortoise protection measures and the implementation of biological resources BMPs.

CMA LUPA-BIO-IFS-11 specifies that if Bendire’s thrasher is present, the Applicant conduct appropriate activity-specific biological monitoring (see Glossary of Terms, EIS Appendix 6) to ensure that Bendire’s thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings). Though Bendire’s thrasher is not expected to be present in the Project area, ground disturbance during the nesting season requires surveys

for, and protection of all active bird nests, including Bendire's thrasher. If nests are found protective buffers will be applied. Compliance with this CMA would be achieved through APM BIO-20, BMP BIO-29, MM BIO-WIL-1, and MM WIL-CEQA-6 which would require protection for migratory birds, development of a NBBMP and pre-construction surveys for nesting birds.

CMA LUPA-BIO-IFS-12 is specific to activity-specific biological monitoring to ensure avoidance of occupied burrowing owl burrows. Compliance with this CMA is achieved through application of APM BIO-02, APM BIO-25, BMP BIO-29, BMP BIO-30, MM WIL-CEQA-1, MM WIL-CEQA-6, and MM WIL-CEQA-7 which would require protection for migratory birds, development of a NBBMP pre-construction surveys for nesting birds, and focused pre-construction surveys and avoidance measures for burrowing owl.

CMA LUPA-BIO-IFS-13 specifies that if active burrowing owl burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist using one-way doors. Compliance with this CMA is achieved through application of BMP BIO-30, MM WIL-CEQA-3, and MM WIL-CEQA-7 which require the development of a NBBMP, and focused pre-construction surveys and avoidance measures for burrowing owl.

CMA LUPA-BIO-IFS-14 specifies that activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW. Compliance with this CMA is achieved through application of BMP BIO-30, MM WIL-CEQA-3, and MM WIL-CEQA-7 which require the development of a NBBMP, and focused pre-construction surveys and avoidance measures for burrowing owl.

CMA LUPA-BIO-IFS-24 is specific to the protection from loss and harassment of active golden eagle nests. Compliance with this CMA is achieved through application of BMP BIO-45 and MM WIL-CEQA-1 which provide protection measures for golden eagles and the development of a NBBMP.

CMA LUPA-BIO-IFS-25, CMA LUPA-BIO-IFS-26 and CMA LUPA-BIO-IFS-27 specify hat cumulative loss of golden eagle foraging habitat within a 1- to 4-mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20%, applicants will conduct a risk assessment per the applicable USFWS guidance, and if a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit. Compliance with this CMA is achieved through application of BMP BIO-45 and MM WIL-CEQA-1 which provide protection measures for golden eagles and the development of a NBBMP.

CMA LUPA-BIO-PLANT-1 specifies that properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant focus and BLM special-status species. The rare plant surveys previously conducted, in conjunction with planned pre-construction surveys will meet the BLM's survey requirements. Compliance with this CMA is also achieved by APM BIO-24 which requires surveys to be conducted during the appropriate time of year of the selected route to identify special-status plant species and imperiled or sensitive vegetation alliances.

CMA LUPA-BIO-PLANT-2[4] specifies that an avoidance setback of 0.25 mile for all focus and BLM Special-Status species occurrences. Compliance with this CMA is achieved through application of BMP BIO-31 and MM VEG-CEQA-3 which provides for guidance on the protection/treatment of Harwood's eriastrum, the only BLM special-status species documented in the Project area and setbacks for all focus and BLM special-status species occurrences.

CMA LUPA-BIO-PLANT-3 specifies that impacts to suitable habitat for focus and BLM special-status plant species should be avoided to the extent feasible and are limited (capped) to a maximum of 1% of their suitable habitat throughout the entire LUPA DA. Compliance with this CMA is achieved through application of BMP BIO-31 which provides for guidance on the protection/treatment of Harwood's eriastrum, the only BLM special-status species documented in the Project area.

CMA LUPA-BIO-RIPWET-1 is specific to the avoidance of riparian and wetland DRECP vegetation types. Compliance with this CMA is achieved through application of APM BIO-11, BMP BIO-11, BMP BIO-19, APM BIO-20, BMP BIO-29, BMP BIO-47, BMP BIO-50, BMP BIO-51, and BMP BIO-52 which require the development of a Vegetation Management Plan, specific measures when working near the Colorado River, development of a NBBMP, management of all riparian areas, implementation of engineering controls, micrositing of structures for adequate structure clearance, and riparian habitat and rare plant alliance avoidance.

CMA LUPA-BIO-RIPWET-3 specifies the requirement for pre-construction surveys for Project activities within 0.25-mile of a riparian or wetland DRECP vegetation type. Compliance with this CMA is achieved through application of APM BIO-02, APM BIO-20, APM BIO-25, MM BIO-CEQA-4, MM WIL-CEQA-1, and MM WIL-CEQA-6 which require biological monitoring, protection for migratory birds during construction, sensitive species surveys, and pre-construction nesting bird surveys.

CMA LUPA-BIO-SVF-1 specifically requires a map delineating potential sites and habitat assessment of the following special vegetation features is required: Yucca clones, creosote rings, Saguaro cacti, Joshua tree woodland, microphyll woodland, Crucifixion thorn stands. Compliance with this CMA is achieved through application of APM BIO-11 and BMP BIO-11 which requires the development of a Vegetation Management Plan.

CMA LUPA-BIO-SVF-6 specifies that impacts to microphyll woodland will be avoided, except for minor incursions. Compliance with this CMA is achieved through application of BMP BIO-50, BMP BIO-51, and BMP BIO-52 which require the implementation of engineering controls, micrositing of structures for adequate conductor clearance, and avoidance of riparian habitats and rare plant alliances.

CMA LUPA-BIO-VEG-1 specifies that the management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy. Compliance with this CMA is achieved through application of APM BIO-11, BMP BIO-11, and BMP BIO-41 which requires the development of a Vegetation Management Plan and succulent management.

[4] The CDCA Plan would be amended to authorize construction of the proposed Project within 0.25-mile of occurrences of Harwood's eriastrum (*Eriastrum harwoodii*), provided that a Rare Plant Linear ROW Protection Plan for the Harwood's eriastrum is developed and approved by the BLM California State Director.

CMA LUPA-BIO-VEG-2 specifies that appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis. Compliance with this CMA is achieved through application of BMP BIO-42 which requires the placement of dead and downed wood in the Project area.

CMA LUPA-BIO-VEG-3 specifically allows for the collection of plant material consistent with the maintenance of natural ecosystem processes. Compliance with this CMA is achieved through application of BMP BIO-43 which specifies the collection of plant materials.

CMA LUPA-BIO-VEG-5 specifies that all activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants. Compliance with this CMA is achieved through application of BMP BIO-41 which requires succulent management within the Project area.

CMA LUPA-BIO-VEG-6 specifies that the BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy. Compliance with this CMA is achieved through application of BMP BIO-41 which requires succulent management within the Project area.

CMA LUPA-SW-13 specifies that the BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition. Compliance with this CMA is achieved through application of BMP BIO-19 and BMP BIO-47 which provides for specific measures when working in the vicinity of the Colorado River and states that the BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.

CMA LUPA-SW-16 is specific to the identification of the 100-year floodplain boundary for any surface water feature in the vicinity of the Project. Compliance with this CMA is also achieved through application of APM BIO-19 which provides for specific measures when working in the vicinity of the Colorado River.

CMA LUPA-TRANS-BIO-1 specifies that, where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the common raven, and minimize collision risks for birds and bats. Compliance with this CMA is achieved through application of APM AES-06, BMP BIO-19, BMP AES-06, BMP BIO-21, and BMP BIO-28 which require that the Project would avoid siting Staging and Laydown Areas in visually sensitive areas to the extent practicable, implement specific protection measures when working near the Colorado River, implement measures to reduce avian collisions, and develop a Raven Management Plan.

CMA LUPA-TRANS-BIO-2 specifies that flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. Compliance with this CMA is achieved through application of APM BIO-21 and BMP BIO-48 which require the use of current guidelines and methodologies to reduce avian collisions and electrocution and install flight diverters on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water.

CMA LUPA-TRANS-BIO-3 specifies that when siting transmission activities, the alignment should avoid, to the maximum extent practicable, being located across canyons or on ridgelines. Compliance with this CMA is achieved through application of APM BIO-21, BMP BIO-21, BMP AES-07, and BMP AES-08 which require the use of current guidelines and methodologies to reduce avian collisions and electrocution, avoid siting linear features in the centers of valley bottoms and on ridgetops, and avoid skylining.

CMA LUPA-TRANS-BIO-4 specifies that siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in Aeolian corridors, rare vegetation alliances and focus and BLM Special-Status species. Compliance with this CMA is achieved through application of APM AES-05, BMP BIO-53, and BMP BIO-54 which require that the Project would avoid siting Staging and Laydown Areas in visually sensitive areas to the extent practicable, protection of dune vegetation, and protection of sand transport.

CMA DFS-VPL-BIO-FIRE-1 is specific to the implementation of a standard practice for fire prevention/protection. Compliance with this CMA is achieved through application of APM BIO-11, BMP BIO-11, BMP PH&S-02, and BMP HAZ-02 which require the development of a Vegetation Management Plan, development of a Fire Prevention Plan (FPP), and implementation of fire avoidance and suppression measures.

The Applicant shall comply with the above CMAs. Therefore, there would be no impact under this criterion.

Impact BIO 2 - Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less than Significant with Mitigation

The majority of Project related impacts (permanent and temporary) would occur within agricultural lands. The Project does however occur within areas where rare plant alliances have been mapped. CDFW has assigned state-level rarity rankings to many vegetation alliances that are dominated by native species (CDFW 2010). The DRECP classifies vegetation alliances (an alliance is defined by one or a group of diagnostic plant species) on BLM land with a state ranking of S1, S2, or S3 (critically imperiled, imperiled, and vulnerable, respectively) as rare vegetation alliances, and provides protection measures in the LUPA. Three rare plant alliances on the Palo Verde Mesa are crossed by one or more route segments within California (FEIS Appendix 7, Figure 3.5-3; FEIS Appendix 3, Table 3.4-6). The *Suaeda moquinii* (bush seepweed scrub) has a rank of S3, vulnerable. The *Parkinsonia florida–Olneya tesota* (blue paloverde-ironwood woodland) Alliance and *Prosopis glandulosa* (Mesquite thickets) Alliance are included in the semi-desert wash woodland riparian vegetation type, often referred to as microphyll woodlands, and have been ranked as S3, vulnerable. These dry desert wash woodland communities and rare vegetation alliances are considered sensitive in the California BLM planning area (BLM 2015a). Table 3.4-6 of the FEIS Appendix 3 identifies the Project segments and distance, in miles, of intersection for rare vegetation alliances on Palo Verde Mesa. Table 2.4-3 below identifies the acreage of each community occurring within a 200-ft wide corridor where the Project occurs in California. Without a final design/Project footprint this table presents

the “worst case scenario” of the entire 200-foot wide corridor being impacted. Actual impacts from the Project would be much less than the acreages reported in Table 2.4-3.

Table 2.4-3 Vegetation Communities/Land Cover Types

VEGETATION COMMUNITY	STATUS	ACREAGE IMPACTED IN PROJECT AREA*
Agriculture	n/a	252.5
Fourwing saltbush scrub (*Atriplex canescens*)	n/a	0.7
Irrigated Row and Field Crops	n/a	0.4
Creosote bush scrub (*Larrea tridentata*)	n/a	17.5
Creosote bush - white bursage scrub (*Larrea tridentata - Ambrosia dumosa*)	n/a	121.7
Open Water	n/a	1.8
Blue palo verde - ironwood woodland (*Parkinsonia florida - Olneya tesota*)	S3	7.5
Mesquite thickets (*Prosopis glandulosa*)	S3	1.3
Bush seepweed scrub (*Suaeda moquinii*)	S3	0.5
Urban	n/a	1.4
Total Acreage		405.3

* Assumes a maximum impact area of 200ft (100ft on either side of the proposed transmission line)

S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

The only permanent water and associated riparian vegetation in the Project area is along the Colorado River and in canals and drains adjacent to irrigated fields in California; the Project proposes to span the Colorado River and other aquatic features. South of Blythe, the Colorado River is channelized in most places, and riparian vegetation is restricted to the immediate banks of the river. However, in some places, including along proposed crossings of the river, riparian vegetation in the floodplain extends up to 0.7 mile from the river. The dominant vegetation in the riparian area within the floodplain is salt cedar (*Tamarix* spp.), honey mesquite (*Prosopis glandulosa*), screwbean mesquite (*Prosopis pubescens*), and saltbush. Stands of arrowweed (*Pluchea sericea*) are found along the river corridor and in association with canals and drains in the agricultural areas. There are some small stands of cottonwood (*Populus fremontii*) and willow (*Salix gooddingii*) along the section of the river south of Blythe (LCRMSCP 2004).

Riparian vegetation and associated aquatic areas, especially riparian habitat with native vegetation, have a high diversity of plants and animals. Numerous species found in the region, including many special-status species, are riparian obligates. The BLM estimates that more than

400 species in the region either are directly dependent on riparian habitats or use them more than other habitats (BLM 2010, Section 3.4.2).

In an otherwise arid landscape, primary productivity in riparian habitats is high due to year-round soil moisture. High plant productivity leads to increased habitat structural diversity and high food availability for herbivorous and (in turn) predatory animals. Insect productivity is also high, among both aquatic and terrestrial species. Insect numbers are very high during warm months and serve as a prey base for a diverse breeding bird fauna, including several special-status birds. Habitat structure in riparian vegetation is also more diverse than in most regional uplands (CPUC 2016).

Riparian woodlands tend to have multiple-layered herb, shrub and tree canopies, whereas most upland shrublands are relatively simple in structure. The varied vertical habitat structure provides a greater diversity of nesting and feeding sites for birds compared with non-riparian communities. Similarly, mammal diversity is greater in riparian communities due to high biological productivity, denning site availability, thermal cover, and water availability (CPUC 2016).

Direct impacts associated with the Project include the removal of vegetation during construction activities, resulting in the direct reduction in the representation of plant communities. Vegetation removal and disturbance of soils could have a variety of effects on vegetation communities, ranging from changes in community structure and species composition to alteration of soil moisture or nutrient regimes. Removal of protective vegetation would also expose soil to potential wind and water erosion. This could result in further loss of soil and vegetation, as well as increased sediment input to water resources.

Clearing and grading could also result in the alteration of soil conditions, including the loss of native seed banks, and change the topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired. Indirect impacts associated with the Project include fugitive dust from construction traffic that has the potential to affect photosynthetic rates and decrease plant productivity. Direct and indirect impacts to riparian or other sensitive vegetation communities (blue palo verde - ironwood woodland, mesquite thickets, and bush seepweed scrub) as a result of Project construction would be considered significant prior to mitigation under this criterion.

To minimize and/or avoid impacts to riparian habitat and sensitive habitat communities a suite of APMs, BLM BMPs, and MMs have been developed for the Project. The Project would be designed to avoid impacts to special-status vegetation communities and other special-status biological resources (APM BIO-12, APM BIO-15, APM BIO-16, BMP BIO-24, BMP BIO-31, BMP BIO-50, BMP BIO-51, BMP BIO-53, and BMP BIO-55). Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features (BMP BIO-52). Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);

- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-5 through APM BIO-8);
- Minimizing vegetation clearing (APM BIO-14), limiting off-road vehicular travel (APM BIO-17);
- Prohibiting native plant collection without a permit (BMP BIO-37);
- Succulent management (BMP BIO-41);
- Promote dead and downed wood (BMP BIO-42);
- Avoidance of California riparian habitat and rare plant alliances (BMP BIO-52);
- Protection of dune vegetation (BMP BIO-53);
- Limit vegetation removal (BMP VEG-1 and BMP VEG-2); and
- Implement biological resources construction monitoring (MM BIO-CEQA-3) and best management practices (MM BIO-CEQA-1).

To further minimize and/or avoid impacts to riparian habitat and sensitive habitat communities MM VEG-CEQA-4 has been identified to further reduce potential impacts. These measures include compensation for impacts to special-status plant species and compensation for permanent impacts to riparian habitats and other sensitive vegetation communities. Refer to Section 2.4.6 below for a complete list and full description of all MMs noted above. Implementation of these APMs, BMPs, and CEQA specific MMs would minimize impacts to riparian habitat and sensitive habitat communities and would reduce impacts to a less-than-significant level.

Compensation for temporary impacts to sensitive vegetation communities (blue palo verde-ironwood woodland, mesquite thickets, and bush seepweed scrub) would include on-site habitat restoration with similar species compositions to those present prior to construction at a ratio of 1.5:1 (MM VEG-CEQA-4). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Compensation for permanent impacts to desert riparian woodland (blue palo verde-ironwood woodland, mesquite thickets, and bush seepweed scrub) would be compensated at a ratio of 5:1, which may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization (BMP BIO-46 and MM VEG-CEQA-4). Priority will be given to expand the size and/or quality of existing microphyll woodlands within protected areas on BLM lands. Specifically, based on the above ratios and the worst-case impacts, the Project would be required to create or restore up to the amounts listed below:

- Blue palo verde - ironwood woodland – 37.80 acres (7.5 acres impacted)

- Mesquite thickets – 6.80 acres (1.3 acres impacted)
- Bush seepweed scrub – 1.35 acres (0.5 acres impacted)

Further, the Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting procedures. The Vegetation Management Plan shall also serve as the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12).

To reduce impacts to less than significant, and to meet CEQA requirements, the following MMs have been developed (incorporating BMPs, APMs, and CMAs as outlined in Table 2.4-4 applicable to Sensitive Vegetation Communities): MM BIO-CEQA-1, MM BIO-CEQA-2, MM BIO-CEQA-3, and MM BIO-CEQA-4. Therefore, impacts to riparian habitats and sensitive habitat communities would be less than significant with mitigation.

Compliance with CDCA CMAs Applicable to Sensitive Vegetation Communities

Table 2.4-4 presents a list of CMAs applicable to sensitive vegetation communities that have already been addressed in detail above under Impact BIO-1.

Table 2.4-4 CMAs Addressed Under Impact BIO-1 Applicable to Sensitive Vegetation Communities

CMA	APPLICABLE APM, BMP, AND/OR MM
CMA DFA-VPL-BIO-DUNE-1	BMP BIO-53
CMA LUPA-BIO-1	APM BIO-24, BMP BIO-31, BMP BIO-11, APM BIO-13, APM BIO-25, BMP BIO-49, APM BIO-23, BMP BIO-23, BMP BIO-30, MM WIL-CEQA-6, MM WIL-CEQA-7, and MM WIL-CEQA-8
CMA LUPA-BIO-3	APM BIO-04, APM BIO-11, BMP BIO-31, BMP BIO-50, and BMP BIO-52
CMA LUPA-BIO-5	APM BIO-1, BMP BIO-01 and MM BIO-CEQA-1
CMA LUPA-BIO-7	APM BIO-15 and MM BIO-CEQA-4
CMA LUPA-BIO-8	APM BIO-11, BMP BIO-11, APM BIO-15, BMP BIO-15, and MM BIO-CEQA-4
CMA LUPA-BIO-9	APM BIO-08, APM BIO-07, APM BIO-10, BMP HAZ-03, and APM HAZ-01
CMA LUPA-BIO-10	APM BIO-12
CMA LUPA-BIO-11	APM BIO-12 and MM BIO-CEQA-1 and MM VEG-CEQA-1
CMA LUPA-BIO-13	APM BIO-11, BMP BIO-11, APM BIO-13, BMP BIO-31, BMP BIO-52, APM BIO-4, APM BIO-22, BMP BIO-33, APM BIO-03, BMP BIO-03, APM BIO-17, BMP BIO-53, BMP BIO-55, and BMP TT-04
CMA LUPA-BIO-15	BMP BIO-38 and BMP VEG-01
CMA LUPA-BIO-17	BMP BIO-19, APM BIO-21, BMP BIO-20, BMP BIO-21, BMP BIO-29, BMP BIO-30, BMP BIO-45, BMP BIO-46, BMP BIO-47, BMP BIO-50, BMP BIO-51, BMP BIO-52, MM BIO-CEQA-4, and MM WIL-CEQA-1

CMA	APPLICABLE APM, BMP, AND/OR MM
CMA LUPA-BIO-COMP-1	BMP BIO-46, MM BIO-CEQA-1, MM BIO-CEQA-4, MM VEG-CEQA-1, and MM VEG-CEQA-4
CMA LUPA-BIO-DUNE-1	BRTR (refer to EIS), BMP BIO-53 and BMP BIO-54
CMA LUPA-BIO-DUNE-2	BMP BIO-54, BMP BIO-31, BMP BIO-49, and BMP BIO-53
CMA LUPA-BIO-DUNE-3	BMP WQ-06, BMP WQ-07, and BMP BIO-49
CMA LUPA-BIO-DUNE-4	BMP BIO-49 BMP BIO-53, BMP BIO-54, and BMP BIO-55
CMA LUPA-BIO-PLANT-3	BMP BIO-31
CMA LUPA-BIO-RIPWET-1	APM BIO-11, BMP BIO-11, BMP BIO-19, APM BIO-20, BMP BIO-29, BMP BIO-47, BMP BIO-50, BMP BIO-51, and BMP BIO-52
CMA LUPA-BIO-RIPWET-3	APM BIO-02, APM BIO-20, APM BIO-25, MM BIO-CEQA-1, MM BIO-CEQA-4, MM WIL-CEQA-1, and MM WIL-CEQA-6
CMA LUPA-BIO-SVF-1	APM BIO-11 and BMP BIO-11
CMA LUPA-BIO-SVF-6	BMP BIO-50, BMP BIO-51, and BMP BIO-52
CMA LUPA-BIO-VEG-1	APM BIO-11, BMP BIO-11, and BMP BIO-41
CMA LUPA-BIO-VEG-2	BMP BIO-42
CMA LUPA-BIO-VEG-5	BMP BIO-41
CMA LUPA-SW-13	BMP BIO-19 and BMP BIO-47
CMA LUPA-TRANS-BIO-4	APM AES-05, BMP BIO-53, and BMP BIO-54

Impact BIO 3 - Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Mitigation

The aquatic and associated wetland habitats that are crossed by the Project are the Colorado River and various canals and drains serving agricultural areas west of the Colorado River. A backwater channel east of and parallel to the mainstem river is present between potential Project crossing locations, which would be avoided by spanning the aquatic habitat.

The primary assumptions for analyzing impacts to wetlands, WOUS, and CDFW jurisdictional waters are:

- Ephemeral drainages/washes are regulated under Sections 404 and 401 of the Clean Water Act and Section 1600 of the California Fish and Game Code. Linear water features crossed by the ROW would be a potential WOUS or CDFW jurisdictional water that could be impacted are identified in Section 3.19.3.1 of the TES (BLM 2019).

- Wetlands crossed by the ROW that could be impacted are identified in Section 3.19.3.1 of the TES.

Final design and placement of the ROW and the permitting process that is required under Sections 404 and 401 of the Clean Water Act (CWA) would attempt to avoid wetlands, WOUS, and CDFW jurisdictional waters, thus impacting only those where disturbance is unavoidable.

For example, a WOUS, wetland, or CDFW jurisdictional water would be considered unavoidable if it is large enough or configured such that it cannot be spanned with the typical span length of 1,200 feet. Most Project segments have potential non-wetland WOUS and CDFW jurisdictional crossings and would require Section 404/401 and Section 1600 permitting if avoidance is not possible. In addition to complying with Section 404 of the Clean Water Act, construction in segments that cross the Colorado River would also need to comply with Section 10 of the Rivers and Harbors Act, which would ensure that any physical alterations of the associated channel, wetland, or floodplain would not have a substantial adverse effect on wetlands and ensure continuing functioning of these areas. TES Table 3.19-4 shows the number of crossings in these segments, which make up the combined lengths in TES Table 4.19-4. Although a formal jurisdictional delineation of waters and wetlands was not conducted, the vegetation communities typically associated with riparian systems that are often regulated by the U.S. Army Corps of Engineers (ACOE) and Regional Water Quality Control Board (RWQCB) under Sections 404 and 401 of the Clean Water Act (respectively) and the CDFW under Section 1600 of the California Fish and Game Code include blue palo verde - ironwood woodland, mesquite thickets, and bush seepweed scrub. As presented above, a total of 7.5 acres of blue palo verde - ironwood woodland, 1.3 acres of mesquite thickets, and 0.5 acres of bush seepweed scrub could be impacted based on a worst-case scenario (entire 200-ft wide corridor being impacted). Prior to conducting any activities, a formal delineation shall be conducted following current guidance and standards to identify aquatic resources that would be subject to the jurisdiction of the ACOE, RWQCB, and/or the CDFW to ensure avoidance and impact minimization (MM BIO-CEQA-4).

The importance of intermittent and ephemeral streams to wildlife in arid environments is well known (Levick et al. 2008). Ephemeral drainages, such as those occurring in the Project area, provide unique habitat that is distinct from the surrounding uplands providing more continuous vegetation cover and micro-topographic diversity than the surrounding uplands. Ephemeral and intermittent streams in the arid west provide important habitat for wildlife and are responsible for much of the biotic diversity (Levick et al. 2008). They have higher moisture content and provide shade and cooler temperatures within the channel. In cases where the habitat is distinct in species composition, structure, or density, wash communities provide habitat values not available in the adjacent uplands (CPUC 2016).

Direct temporary and permanent impacts to State jurisdictional waters (CDFW, RWQCB), and Federal waters would include the removal of native riparian vegetation and the discharge of fill material into receiving waters. Other direct temporary impacts during construction activities include increased runoff, sedimentation, soil erosion, and pollutants that may result in degradation of water quality within receiving waters. Indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. Operational impacts to wetland habitats would be similar to direct and indirect impacts. As required by law, the Project would comply with the regulations regarding conducting Project activities in water courses and habitats under the jurisdiction of the State and Federal government. Therefore, the Project would obtain required permits pursuant to Section 401 and 404 of the CWA, the State Porter-Cologne Act, and Fish and Game Code Section 1602. Due to the importance of riparian habitats and ephemeral/perennial drainages and their suitability to support special-status species, any loss of the habitats described above associated with the Project would be considered a significant impact without mitigation. Therefore, impacts to State

jurisdiction waters (CDFW, RWQCB), and Federal waters would be significant prior to the implementation of mitigation under this criterion.

The Project would be designed to avoid impacts to riparian habitats and other special-status biological resources (APM BIO-13, APM BIO-15, BMP BIO-50, and BMP BIO-51). Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features including jurisdictional waters for avoidance (BMP BIO-52 and MM BIO-CEQA-4). Other measures that would be implemented to avoid and minimize impacts during construction include:

- Implementation of a worker environmental awareness program (APM/BMP BIO-1 and MM BIO-CEQA-2);
- Limiting activities to established work areas (APM/BMP BIO-3);
- Establishing environmentally sensitive areas (APM BIO-4);
- Establishing prohibited activities along the Project alignment (APM BIO-8);
- Erosion and dust control (APM BIO-10, APM BIO-15, BMP BIO-38, BMP BIO-42, and BMP BIO-50);
- Minimizing vegetation clearing (APM BIO-14);
- Limiting off-road vehicular travel (APM BIO-17);
- Limit vegetation removal (BMP VEG-1 and BMP VEG-2); and
- Implement biological resources construction monitoring (MM BIO-CEQA-3) and best management practices (MM BIO-CEQA-1).

Implementation of the above-referenced APMs, BMPs, and CEQA MMs would reduce impacts on wetland features to less than significant levels. Compensation for temporary impacts to jurisdictional waters/wetlands would include on-site habitat restoration with similar species compositions to those present prior to construction at a ratio of 1.5:1 (MM BIO-CEQA-4 and MM VEG-CEQA-3). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Compensation for permanent impacts to jurisdictional waters/wetlands would include a) on-site habitat creation or enhancement with similar species compositions to those present prior to construction, b) off-site creation, enhancement, and/or preservation or c) participation in an established mitigation bank program (MM BIO-CEQA-4). Desert riparian woodland (blue palo verde-ironwood woodland and mesquite thickets) would be compensated at a ratio of 5:1 (MM BIO-CEQA-4). The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. The Vegetation Management Plan (APM BIO-11 and MM VEG-CEQA-1) shall outline the planting/seeding methodologies, qualitative/quantitative monitoring requirements, success criteria, and reporting

procedures. Further, the Vegetation Management Plan shall serve as the HRMMP (APM/BMP BIO-15) and Noxious Weed Control Plan to address potential impacts associated with the colonization and spread of noxious weeds (APM BIO-12).

To meet CEQA requirements, the following mitigation measures have been developed (incorporating APMs, BMPs, and CMAs as outlined in Table 2.4-5): MM BIO-CEQA-4 and MM VEG-CEQA-1. Therefore, impacts to State jurisdictional waters (CDFW, RWQCB), and Federal waters would be less than significant with mitigation.

Compliance with CDCA CMAs Applicable to Jurisdictional Waters/Wetlands

Table 2.4-5 presents a list of CMAs applicable to jurisdictional waters/wetlands that have already been addressed above in detail under Impact BIO-1.

Table 2.4-5 CMAs Addressed Under Impact BIO-1 Applicable to Jurisdictional Waters/Wetlands

CMA	APPLICABLE APM, BMP, AND/OR MM
CMA LUPA-BIO-9	APM BIO-08, APM BIO-07, APM BIO-10, BMP HAZ-03, and APM HAZ-01
CMA LUPA-BIO-RIPWET-1.	APM BIO-11, BMP BIO-11, BMP BIO-19, APM BIO-20, BMP BIO-29, BMP BIO-47, BMP BIO-50, BMP BIO-51, and BMP BIO-52
CMA LUPA-BIO-RIPWET-3	APM BIO-02, APM BIO-20, APM BIO-25, MM BIO-CEQA-1, and MM BIO-CEQA-3
CMA LUPA-SW-16	APM BIO-19

Impact BIO 4 - Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant with Mitigation

The Project site is identified as a wildlife movement corridor that provides linkage across I-10 between the Mule and McCoy mountains; refer to Figure D-1 in Appendix D of the DRECP LUPA for a graphical depiction of this corridor. Migratory songbirds use riparian vegetation associated with the Colorado River and various canals, drainages, and canals serving agricultural areas west of the Colorado River for breeding, nesting, and foraging. Migratory songbirds may also use this corridor as transient rest sites during migration flights and are likely to use the Project site for foraging opportunities and as a rest site. Additionally, terrestrial wildlife may disperse from the Colorado River riparian corridor and cross through the Project site; however, the existing agricultural operations west of the Colorado River may limit wildlife activity in this general area.

Direct impacts resulting from the construction of the Project would include the placement of physical structures such as poles/towers, transmission lines, access roads, and fencing across

mapped wildlife corridors. Ground-disturbing activity including vegetation removal and tower/pole site preparation, may temporarily interfere with terrestrial wildlife movement during construction of the Project. All of the physical structures, with the exception of fenced areas, would present an impermeable barrier to wildlife movement, as species would be able to navigate around Project infrastructure.

The Project could also indirectly impact wildlife in adjacent habitats by interfering with movement patterns or causing animals to temporarily avoid areas adjacent to the construction zone. Indirect impacts include human disturbance, colonization or expansion of invasive weeds, bird collisions with the transmission line, and vehicle traffic. Operational impacts would be the same as described for direct and indirect impacts. Construction activities may temporarily limit terrestrial wildlife movement within the Project area; however, the broad geographic range and habitat that occurs in the region would remain available to wildlife. Birds and larger mammals would likely disperse into adjacent habitat areas during ground disturbing activities.

Migrating birds are known to use the Colorado River corridor. Additionally, the agricultural areas and various canals and drains support many resident and migrant species. However, the Project's activities and operation are not expected to preclude use of the area. Most avian species will continue to fly through the Project alignment during north and southbound migrations. Since the Project has an east-west orientation, avian species would be primarily flying perpendicular to the transmission lines and may collide with the lines.

Infrastructure would not be placed in potential fish habitat, therefore impacts on fish movement would not occur.

The Project would introduce infrastructure perpendicular to the paths of north-south migrating wildlife. Project impacts would be most severe during construction when the noise and presence of construction personnel and equipment would be added to the impacts of Project infrastructure. During construction, the Project would substantially interfere with migrating wildlife, especially birds. Therefore, impacts to migrating wildlife would be significant prior to implementation of mitigation under this criterion.

APMs and BMPs would be implemented to ensure that impacts to wildlife movement are reduced to a less-than-significant level. The Project would be designed to avoid impacts to special-status biological resources (APM BIO-12, APM BIO-15, BMP BIO-50, BMP BIO-51, BMP BIO-53, and BMP BIO-55). In particular, APM BIO-13 requires that riparian areas and xeroriparian drainages that occur within the easement would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. This would avoid and/or minimize impacts to riparian-dependent species. Other measures that would be implemented to avoid and minimize impacts include:

- Limiting activities to established work areas (APM/BMP BIO-3);
- Installing escape ramps (APM BIO-9);
- Erosion and dust control (APM BIO-10);
- Limiting off-road vehicular travel (APM BIO-17);

- Reduce bird collisions and other protections (BMP BIO-19 through APM/BMP BIO-21, and BMP BIO-48);
- Implement a NBBMP (BMP BIO-29);
- Manage construction lighting, water, and materials to benefit wildlife (BMP BIO-33 through BMP BIO-36); and
- Implement biological resources best management practices (MM BIO-CEQA-1).

Implementation of the compensation for impacts to sensitive vegetation (MM VEG-CEQA-4) and preparation and implementation of the Vegetation Management Plan (MM VEG-CEQA-1) would mitigate for the impacts to habitat used by terrestrial wildlife for movement. Preparation and implementation of the APP (MM WIL-CEQA-1) and the BBCS (MM WIL-CEQA-4) would address the effects of the Project on the movement of birds and bats.

To meet CEQA requirements, the following mitigation measures have been developed (incorporating APMs, BMPs, and CMAs as outlined in Table 2.4-6): MM BIO-CEQA-1, MM VEG-CEQA-1, MM VEG-CEQA-4, MM WIL-CEQA-1, and MM WIL-CEQA-4. Therefore, impacts to wildlife movement would be less than significant with mitigation.

Table 2.4-6 CMAs Addressed Under Impact BIO-4 Applicable to Wildlife Movement

CMA	APPLICABLE APM, BMP, AND/OR MM
CMA LUPA-BIO-13	APM BIO-11, BMP BIO-11, APM BIO-13, BMP BIO-31, BMP BIO-52, APM BIO-4, BMP BIO-33, APM BIO-03, BMP BIO-03, APM BIO-17, BMP BIO-53, BMP BIO-55, BMP TT-04, MM BIO-CEQA-1, MM VEG-CEQA-1, MM VEG-CEQA-4, MM WIL-CEQA-1, MM WIL-CEQA-4

Impact BIO 5 - Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact

County of Riverside Ordinance No. 559 regulates the removal of trees within the County. This ordinance states:

> *No person shall remove any living native tree on any parcel or property greater than one-half acre in size, located in an area above 5,000 feet in elevation and within the unincorporated area of the County of Riverside, without first obtaining a permit to do so, unless exempted by the provisions of Section 4 of this ordinance.*

Since the Project area is below 5,000 feet in elevation the Project would not remove any trees covered by this ordinance. Additionally, activities conducted by a public utility, subject to the jurisdiction of the Public Utilities Commission or any other constituted public agency, are exempt from local land use requirements. Therefore, the Project would not conflict with any

local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance and the Project would have no impact under this criterion.

Impact BIO 6 - Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact

The Project would comply with state laws, regulations, and orders in the conservation and management of biological resources, including the California Endangered Species Act (California Fish and Game Code [CFGC] 2050, et seq.), California Native Plant Protection Act of 1977 (CFGC 1900–1913), California Fish and Game Code 1600–1603, Streambed Alteration Agreement, California Fish and Game Code 3511, 4700, 5050, and 5515, Fully Protected Wildlife, California Fish and Game Code 3500–3516, Protection of Birds. Additionally, no lands within the study area were specifically addressed by the California Desert Protection Act of 1994.

The Project does not cross areas designated under the DRECP (BLM 2016a) or other applicable BLM management plans (BLM 1980, 2002a) as Areas of Critical Environmental Concern or as other areas designated for the conservation or focused management of biological resources or their habitat. BLM-managed lands in California that are crossed by the Project are classified in the DRECP as Development Focus Areas. DRECP and CDCA/NECO, are described below, as they both allow for utility uses within designated corridors. The Project would not cross lands covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or lands covered by other approved local, regional, or state habitat conservation plans; therefore, there would be no impact under this criterion.

California Desert Conservation Plan (CDCA) amended by Northern and Eastern Colorado Desert Coordinated Management Plan (NECO)

As discussed in Section 3.8.3.1 of the TES (BLM 2019), the BLM's management of Federal lands within the land use study area in California is directed by the 1980 CDCA Plan (BLM 1980), which was amended in 2002 by the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan (BLM 2002b). This plan applies to Federal lands in the Palm Springs Field Office planning area and includes BLM-managed lands. The NECO planning area is located primarily in the Sonoran Desert of San Bernardino, Riverside, and Imperial counties in southeastern California.

Desert Renewable Energy Conservation Plan (DRECP)

As discussed in Section 3.8.3.1 of the TES, the DRECP Land Use Plan Amendment (BLM 2016a) further amended the CDCA Plan. This land use plan amendment was developed to help manage Federal lands in compliance with the 2013 Presidential goal to approve an additional 10,000 MW of energy generation on public land by 2020. Along with the management considerations in the land use plan amendment, the BLM will continue to manage resources and uses on BLM-managed lands by following existing land use planning decisions under the NECO Plan. In preparing the CDCA Plan, the NECO Plan, and the DRECP land use plan amendment, the Palm Springs Field Office coordinated with Federal, state, local, and tribal officials and

reviewed several plans that outline policies and guide activities of the agencies and organizations. The Palm Springs Field Office has identified 12 utility corridors in its planning area. To minimize impacts on BLM-managed lands, new infrastructure should be within these designated corridors, each of which is between 1 and 2 miles wide.

Section 2.4.2 above presents a suite of APMs and BMPs that have been developed/identified to comply with the CMAs contained in the CDCA of the DRECP; specific MMs presented in Section 2.4.6 below also provide compliance with the CMA's of the CDCA. A complete list of CMAs applicable to the Project are presented in EIS Appendix 2C. An analysis of which APMs, BMPs, or MMs provide compliance with the CDCA is provided under each impact discussion presented in Section 2.4.5.

With the implementation of the above mentioned APMs, BMPs, and MMs the Project complies with provisions of an all applicable Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans and therefore no impacts to applicable plans would occur.

2.4.6 Biological Resources Mitigation

To meet CEQA requirements, biological resource MMs, below, have been developed (incorporating applicable APMs, BMPs, and CMAs) to reduce impacts to less than significant. Biological resource MMs shall be implemented prior to, during, and post-construction activities, operations, and decommissioning.

MM BIO-CEQA-1: Implement Biological Resources Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs and CMAs in Sections 2.4.2 and 2.4.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, during, and after Project activities to avoid or minimize Project related impacts on biological resources. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the Weekly Compliance Report to the BLM and CPUC Monthly Compliance Report. Each report shall include a summary of the construction activities completed, a review of the sensitive plants and wildlife encountered, a list of compliance actions and any remedial actions taken to correct the actions, and the status of on-going mitigation efforts.

MM BIO-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

MM BIO-CEQA-2: Implement a Worker Environmental Awareness Program (WEAP).

BMP-BIO 1 and CMA LUPA-BIO-5 shall be incorporated within this MM BIO-CEQA-2.

- Prior to any work activities on the Project site, including surveying, mobilization, fencing, grading, or construction, a WEAP shall be prepared and implemented by the Applicant. Prior to implementation the WEAP will be approved by the CPUC with a final version completed prior to the issuance of construction permits. The WEAP shall be implemented throughout the duration of Project, including O&M phases. Successful implementation of the WEAP will result in all on-site Project personnel being properly informed and educated on the pertinent environmental concerns related to the Project. One of the main goals of the WEAP, is that it shall reduce unintentional impacts to biological resources within the Project area and ensure that all workers are trained in accordance with this MM. The WEAP shall include, at a minimum, the following items: Maps showing the known locations of listed and/or special-status wildlife, populations of listed and special-status plants and sensitive vegetation communities, riparian habitats, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations.

- A discussion of measures to be implemented for avoidance of sensitive resources discussed in the EIS (including this appendix) and the identification of an onsite contact in the event of the discovery of sensitive species on the Project site; this shall include a discussion on micro trash.

- Training materials and briefings shall include, but not be limited to: a discussion of the FESA and CESA; the BGEPA; the MBTA; the APLIC Guidelines; the consequences of non-compliance with these regulations; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event of the discovery of dead or injured wildlife; and a review of mitigation requirements.

- Protocols to be followed when roadkill is encountered in the work area, or along access roads, and the identification of an onsite representative to whom the roadkill shall be reported. Roadkill shall be reported to the appropriate local animal control agency, the CPUC within 24 hours. Roadkill of special-status species shall also be reported to

the CDFW and/or USFWS within 24 hours or otherwise specified in Project-specific permits.

- Literature and photographs or illustrations of potentially occurring special-status plant and/or wildlife species shall be provided to all Project contractors and heavy equipment operators.
- A special hardhat sticker or wallet size card shall be issued to all personnel completing the training, which shall be carried with the trained personnel at all times while on the Project site.
- All new personnel shall receive this training and may work in the field for no more than 5 days without participating in the WEAP.
- A log of all personnel who have completed the WEAP training shall be kept on site.
- A copy of the WEAP shall be kept at an easily accessible location within the Project site (i.e., foreman's vehicle, construction trailer, etc.) for the duration of the Project.
- A standalone version of the WEAP shall be developed, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations.
- The Applicant shall ensure that interpretation of the WEAP is available for all non-English speaking workers.

MM BIO-CEQA-2 Implementation

Responsible Party: The Applicant shall ensure that a qualified biologist (approved by the CPUC) prepares the WEAP and that it is implemented for all on-site Project personnel.

Timing: Prior to construction, and during construction for all new on-site Project personnel.

Mitigation Monitoring and Reporting Program: The WEAP shall be developed by a qualified biologist designated by the Applicant and approved by the CPUC. A copy of the WEAP shall be kept at an easily accessible location within the Project site for the duration of the Project. A log of all personnel who have completed the WEAP training shall be kept on site.

Standards for Success: All construction/Project related personnel are trained in the key characteristics for identifying and avoiding impacts to special-status species and sensitive habitats.

MM BIO-CEQA-3: Implement Biological Construction Monitoring.

APM BIO-2, BMP BIO-02, and CMA LUPA BIO-2 shall be incorporated within this MM BIO-CEQA-3.

No more than 30 days prior to the start of site mobilization or ground disturbing activities, the Applicant shall designate a qualified biologist(s) to monitor construction of the Project. Multiple qualified biologists shall be designated by the Applicant, as needed. Designated qualified biologists must be approved by the CPUC, BLM, and CDFW prior to conducting construction monitoring. The biologist(s) must be knowledgeable with the life history and habitat requirements of Federal and State listed and special-status plants, mammals, reptiles, amphibians, and birds. The qualified biologist(s) shall conduct clearance surveys for listed and special-status species prior to the start of construction activities each workday during initial site disturbance; clearance surveys can be conducted on a weekly basis thereafter. Any handling of special-status species must be approved by the appropriate Federal and State agencies and be done in accordance with species-specific handling protocols. During initial site disturbance, and for the duration of construction, the qualified biologist(s) shall remain on-site at all times when activities shall occur immediately adjacent to, or within, habitat that supports populations of listed and/or special-status species. The designated biologist(s) shall relocate terrestrial special-status species that would be impacted by the Project. An exception to this would be for Fully Protected species, which would require avoidance. Additionally, Federal and state-listed species would require FESA and CESA authorization to handle or relocate. All locations of listed and/or special-status plants shall be flagged for avoidance or salvage, relocation, or transplanting as described in MM VEG-CEQA-4. Similarly, locations of listed and/or special-status wildlife shall be flagged for avoidance and appropriate avoidance buffers established as described in MM WIL-CEQA-1 through MM WIL-CEQA-11. Results of all monitoring shall be recorded on daily site observation reports and include details the construction activities. The daily monitoring reports shall be compiled and submitted to the CPUC, BLM, and CDFW for review on a weekly basis. Contents of the reports shall include at a minimum the date, time of monitoring, location, qualified biologists name, construction activities, biological conditions and species detections, and any issues encountered during the monitoring effort.

If dead or injured special-status wildlife species and/or impacted special-status plant are detected on the construction site, the qualified biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures shall be included within a separate monitoring incident report. Species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, as well as all other appropriate Federal and State regulatory agencies, shall be contacted regarding ultimate disposal of the remains. The incident report shall be sent to the CPUC, CDFW and/or USFWS (as appropriate), as well as any other appropriate Federal and State agencies, within five calendar days. The construction biological monitoring report shall at a minimum include: the date, time of the finding or incident (if known), and location of the carcass, injured animal or other impacted species, and the circumstances of its death or injury (if known). Injured animals shall be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility.

MM BIO-CEQA-3 Implementation

Responsible Party: The Applicant is responsible for designating qualified biologists to monitor Project construction activities that are within and/or adjacent sensitive habitats, and/or have the potential to impact special-status species.

Timing: During all Project phases if biological resources are pertinent or monitoring is required by the appropriate Federal or State regulatory agency.

Mitigation Monitoring and Reporting Program: Copies of daily monitoring reports shall be compiled and submitted to the CPUC, BLM, and CDFW on a weekly basis. Separate incident reports shall be compiled and submitted to the appropriate Federal and State agencies if observations of dead, injured or impacted special-status species are observed during monitoring within five calendar days.

Standards for Success: Sensitive biological resources are avoided and/or impacts are reduced to a less than significant level throughout all construction activities.

MM BIO-CEQA-4: Avoidance Measures and Compensation for Impacts to Jurisdictional Waters/Wetlands and/or Sensitive Natural Communities.

The following APMs, BMPs, and CMAs shall be incorporated within this MM BIO-CEQA-4: APM BIO-2; BMP BIO-2; APM BIO-4; APM BIO-11; BMP BIO-11; APM BIO-13; APM BIO-14; APM BIO-15; BMP BIO-15; APM BIO-16; BMP BIO-24; BMP BIO-25; BMP BIO-52; BMP BIO-53; BMP BIO-55; BMP VEG-01; BMP VEG-02; CMA DFA-BIO-IFS-1; CMA DFA-BIO-IFS-2; CMA DFA-VPL-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-7; CMA LUPA-BIO-9; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-5; CMA LUPA-BIO-PLANT-1; CMA LUPA-BIO-PLANT-2; CMA LUPA-BIO-RIPWET-1; CMA LUPA-BIO-RIPWET-3; CMA LUPA-BIO-SVF-1; CMA LUPA-BIO-SVF-6; CMA LUPA-SW-13; and CMA LUPA-SW-16.

To avoid, minimize disturbance, and restore impacts to jurisdictional waters/wetlands and sensitive natural communities the following shall be implemented:

- Prior to conducting any Project activities, a formal jurisdictional delineation and mapping of sensitive natural communities shall be conducted following current protocols, guidance, and standards, as defined by the ACOE, RWQCB, and CDFW. The Applicant shall ensure that a formal delineation is conducted, and all required regulatory permits are obtained prior to the start of Project construction activities.

- Implement APMs and BMPs to prevent prohibited materials from entering jurisdictional waters/wetlands and/or causing disturbance to sensitive natural communities.

- Construction activities shall be done in such a manner as to avoid and minimize the removal and impacts to jurisdictional waters/wetlands and sensitive natural communities to the extent feasible.

- If jurisdictional waters/wetlands and/or sensitive natural communities are present within the Project area, then they shall be identified as environmentally sensitive areas and flagged by an Applicant designated qualified biologist prior to construction activities.

- If jurisdictional waters/wetlands and/or sensitive natural communities are present within the Project area, then the Applicant shall ensure that the designated qualified biologist is on-site at all times during active work in these areas; including but not limited to

within the floodplain, adjacent to and/or in jurisdictional waters/wetlands, and/or in sensitive natural communities. All on-site personnel shall be instructed on the importance of avoiding and minimizing disturbance in these areas if present within the Project area.

- If impacts to jurisdictional waters/wetlands or sensitive natural communities cannot be avoided, the Applicant shall coordinate with the appropriate Federal and State regulatory agencies to obtain authorization from the ACOE through a CWA Section 404 ACOE Nationwide Permit (NWP) or Individual Permit (IP); the RWQCB through a CWA Section 401 Water Quality Certification (WQC); and the CDFW through a California FGC Section 1602 Lake and Streambed Alteration (LSA) Notification.

- The Applicant shall restore all temporary impacts at a ratio of 1.5:1 as described in the Vegetation Management Plan (MM-VEG-CEQA-1). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism.

- To compensate for permanent impacts to jurisdictional waters/wetlands, the impacted areas shall be replaced at a minimum ratio of 2:1 but will vary depending on the mitigation strategy used. Permanent impacts to riparian desert woodland habitats (e.g., blue Palo Verde-ironwood woodland, mesquite thickets, bush seepweed) that are jurisdictional shall be mitigated at a ratio of 5:1 (e.g., desert riparian woodland). Additional mitigation may be proposed by each Federal and/or State agency during the regulatory permitting process. The mitigation strategy to compensate for the loss of jurisdictional habitats may be achieved by (a) on-site habitat creation or enhancement with similar species compositions to those present prior to construction; (b) off-site creation, enhancement, and/or preservation; and/or (c) participation in an established mitigation bank program. If offsite lands are used as part of the mitigation strategy, then they shall be permanently protected by establishing a conservation easement. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the conditions of the conservation easement, including the required acreage to be conserved and the required monitoring and management of the conserved lands, as appropriate. All mitigation for temporary and/or permanent impacts to jurisdictional waters/wetlands and/or sensitive natural communities shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities.

- All created or restored habitats shall be monitored per the requirements in the Vegetation Management Plan (MM-VEG-CEQA-1), and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4). All lands identified for preservation would require the recordation of a conservation easement. The easement could be held by CDFW or an approved land management entity. All lands identified for preservation shall require approval from the appropriate Federal and/or State regulatory agency.

MM BIO-CEQA-4 Implementation

Responsible Party: The Applicant shall ensure that a designated qualified biologist (approved by the CPUC, BLM, and CDFW) conducts pre-construction surveys (i.e., delineation and mapping) for jurisdictional waters/wetlands and sensitive natural communities. The Applicant is responsible for the implementation of environmentally sensitive area exclusion fencing and mitigation from potential impacts of these features.

Timing: Pre-construction surveys to delineate jurisdictional aquatic resource features and/or map sensitive vegetation communities shall be completed prior to Project commencement and all required permits have been obtained. Environmentally sensitive area exclusion fencing (at appropriate buffer distances) shall be implemented in the appropriate locations prior to Project activities. All temporary and permanent mitigation shall be approved by the appropriate Federal and/or State regulatory agencies prior to Project commencement.

Mitigation Monitoring and Reporting Program: A Preliminary Jurisdictional Wetlands/Waters Delineation Report shall be prepared and approved by the ACOE and CDFW prior to Project commencement; all required regulatory permits must be obtained prior to the start of Project activities. All jurisdictional waters/wetlands and sensitive natural communities shall be identified (including measures for avoidance and mitigation), mapped, and included in the Vegetation Management Plan (MM VEG-CEQA-1). Specific mitigation and monitoring requisites for temporarily and/or permanently impacts jurisdictional waters/wetlands and/or sensitive natural communities shall also be documented in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4). Subsequent follow-up reporting measures are as defined in the Vegetation Management Plan (MM VEG-CEQA-1) and Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4).

Standards for Success: No net loss of jurisdictional waters/wetlands and/or sensitive natural communities. Disturbance to all jurisdictional waters/wetlands and/or sensitive natural communities shall be minimized and avoided to the extent feasible. Temporary impacts shall be restored at a 1.5:1 ratio. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Permanent impacts to jurisdictional waters/wetlands shall be mitigated at a ratio that varies from 2:1 to 5:1 depending on the resource impacted and mitigation strategy used. All temporary and/or permanent impacts to jurisdictional waters/wetlands and/or sensitive natural communities shall be mitigated and approved by the appropriate Federal and State regulatory agencies.

MM VEG-CEQA-1: Develop and Implement a Vegetation Management Plan.

The following APMs, BMPs, and CMAs shall be incorporated within this MM VEG-CEQA-1: APM BIO-4; APM BIO-10; APM BIO-11; BMP BIO-11; APM BIO-12; APM BIO-13; APM BIO-14; APM BIO-15; BMP BIO-15; APM BIO-16BMP BIO-37; BMP BIO-41; BMP BIO-41; BMP BIO-43; BMP BIO-51; BMP BIO-52; BMP BIO-53, BMP BIO-54; BMP BIO-55; BMP VEG-01; BMP VEG-02; CMA DFA-BIO-IFS-1; CMA DFA-BIO-IFS-2; CMA LUPA-BIO-1; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-7; CMA LUPA BIO-8; CMA LUPA-BIO-10; CMA LUPA-BIO-11; CMA LUPA-BIO-14; CMA LUPA-BIO-15; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-PLANT-1; CMA LUPA-BIO-PLANT-2; CMA LUPA-BIO-PLANT-3; CMA LUPA BIO-SVF-1; CMA LUP-BIO-VEG-1; CMA LUP-BIO-VEG-2; CMA LUP-BIO-VEG-3; CMA LUP-BIO-VEG-5; CMA LUP-BIO-VEG-6; CMA LUPA-SW-13; CMA LUPA-TRANS-BIO-4; and CMA DFS-VPL-BIO-FIRE-1.Prior to the start of ground disturbance, the Applicant shall develop and implement a Vegetation Management Plan for the Project. The Vegetation Management Plan shall be approved by the BLM, CPUC, and CDFW prior to the start of any Project activities (i.e., mobilization). The purpose of the Vegetation Management Plan is to provide guidance and outline a Project-specific protocol to ensure that the Applicant restores all temporarily disturbed areas to pre-construction conditions, or better, and provide for habitat preservation, creation, and/or restoration resulting from permanent impacts to special-status species habitat, sensitive vegetation communities, and/or jurisdictional waters/wetlands.

The Vegetation Management Plan shall detail procedures to manage, monitor, mitigate, and restore native vegetation and habitat, as well as provide controls for noxious and invasive weed species. The Vegetation Management Plan shall incorporate the APMs, BMPs, and CMAs, by including the specifications detailed in the Habitat Restoration and Monitoring Plan, the Noxious Weed Management Plan/Invasive Species Management/Control Plan, and all other applicable vegetation management mitigation and monitoring plans associated with the Project.

The Vegetation Management Plan shall also reference and integrate protocols and requirements detailed in the most up-to-date State and Federal laws, policies and guidance regarding vegetation management including, but not limited to:

- Integrated Vegetation Management Handbook (BLM 2008);
- Integrated Weed Management Plan (BLM 2015b);
- Memorandum of Understanding on Vegetation Management for Powerline Rights-of-Way (USDA 2016);
- New Diagrams and Applications for the Wire Zone-border Zone Approach to Vegetation Management on Electric Transmission Line ROWs (Ballard et al. 2007);
- Saguaro (Carnegiea gigantea, Cactaceae) Age-Height Relationships and Growth: The Development of a General Growth Curve (Drezner 2003);
- The Step-Pointe Method of Sampling- A Practical Tool in Range Research (Evans et al. 1957); and

- Transmission Vegetation Management, NERC Standard FAC-003-2 Technical Reference (NERC 2009-2011).

The Vegetation Management Plan shall include, at a minimum, an overview of the following technical items:

- **Vegetation Management Goals and Objectives.** The goals of Project vegetation management shall be defined in the Project Vegetation Management Plan. At a minimum, Project vegetation management shall be consistent with the following objectives:
  - Vegetation management measures and BMPs pertaining to sensitive vegetation species and habitats, seeding, soils, restoration and revegetation, noxious and invasive weeds, equipment, schedule and implementation timing, success criteria, monitoring and reporting will be specifically outlined and be consistent with the aforementioned protocols and methodologies set forth by the appropriate State and Federal regulatory agencies;
  - Vegetation will be trimmed, cleared, or otherwise controlled, to minimize and reduce impacts to the extent practicable;
  - Avoidance and minimization shall be employed to ensure the reduction, introduction, and spread of noxious and invasive weed species;
  - The Project will restore and revegetate affected areas;
  - Habitat enhancement and preservation shall be applied to the extent practical (e.g., promote appropriate levels of dead and downed woody debris to provide habitat and sees bed establishment); and
  - Mitigation and contingency measures will be employed on an as needed basis.
- **Plan Submittal and Approval Process.** A process for proposing Vegetation Management Plan modifications to the appropriate Federal and State regulatory agencies for review and approval shall be outlined**.**
- **Avoidance, Minimization, Restoration, and Mitigation Criteria.** Documentation shall include the avoidance, minimization, restoration, and mitigation criteria terms, stipulations, and general conditions required by the appropriate Federal and State regulatory agencies. All disturbed Project areas shall be restored and revegetated to the extent practicable, given the arid desert environment.
- **Pre-Construction Project Site Conditions.** Provide a description of the pre-Project conditions. Describe other site characteristics relevant to the management of vegetation (e.g., composition of plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species, pre-construction anthropogenic factors, etc.). This shall also include ecological characteristics and factors **(**e.g., total population, reproduction, distribution, pollinators, etc.).

- **Methods**. Describe the methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, crush and drive-cut-mow removal techniques, etc.) and the long-term maintenance required.

- **Discussion.** The Vegetation Management Plan will include a discussion section that, at a minimum, considers specifications for habitat preservation and enhancement, adaptive management, use of conservation easements (e.g., Desert Wildlife Management Area, Wildlife Habitat Management Area), and other land use protections and restrictions applicable to the management of vegetation within the Project area.

- **Schedule.** A proposed schedule for all vegetation management, including vegetation pre- and post- construction surveys, monitoring, mitigation, restoration, and Project construction activities. The following is recommended as part of the Vegetation Management Plan schedule:

    - Species-specific seasonal restriction dates will be outlined in the Vegetation Management Plan and observed during implementation. At a minimum, this shall incorporate timeframes for breeding and nesting birds, lambing, fawning, or roosting of species, bloom periods for special-status species, and periods of highest precipitation and rainfall (i.e., to maximize irrigation requisites and implement erosion controls).

    - The Project area should be broken up into sections based on the required construction activities;

    - When applicable, restoration or habitat enhancement activities shall be implemented once construction activities are complete within a specific area; and

    - Restoration and/or creation of habitat should occur within an appropriate window for each specific community and species makeup (i.e., impacts to habitat during the summer months may not be initiated until the fall to promote native seed germination).

- **Pre-Construction Survey.** Pre-construction vegetation surveys will consist of up to three survey events, to capture the annual species only present at specific times of the year, to document the presence of special-status species, to identify and map the locations and extent of sensitive vegetation communities, and a general vegetation inventory survey for all vegetation species, including invasive and noxious weeds. Measures for conducting and completing floristic surveys to support the Vegetation Management Plan are specified in MM VEG-CEQA-2—Conduct Pre-Construction Floristic Surveys.

- **Post-Construction Surveys, Monitoring, and Reporting.** The Applicant shall appoint a qualified biologist to complete post-construction surveys. Monitoring surveys shall be conducted within following vegetation management activities within the Project area (e.g., restoration, re-contouring, etc.). Areas subject to vegetation management shall be monitored to assess progress and to make recommendations for successful

revegetation, habitat enhancement, etc. Monitoring surveys shall be performed by a qualified biologist knowledgeable in the area of vegetation management and restoration specific to the Project vegetation communities and jurisdictional waters/wetlands.

Monitoring

- Qualitative Monitoring: Qualitative monitoring surveys shall be performed monthly in all vegetation management areas for the one year following the completion of Project activities and subsequent vegetation management implementation. Qualitative monitoring shall be on a quarterly schedule thereafter, until final completion and approval by the appropriate Federal and State regulatory agencies. Qualitative monitoring shall assess native plant species performance, including growth and survivorship, germination success, reproduction, plant fitness and health, and pest or invasive plant problems. Monitoring at this stage shall indicate need for remediation or maintenance work well in advance of final success/failure determination. Post-Construction Vegetation Management Quarterly Monitoring Progress Reports shall be prepared for the first year of monitoring and are further described below.

- Quantitative Monitoring: Quantitative monitoring shall occur annually for year one through five, or for additional years until the success criteria are met. Within each vegetation management area, the qualified biologist shall collect data in a series of 1 m^2 quadrats to estimate absolute and relative cover and density of each plant species. In year 2 or 3, depending on the growth within the vegetation management, the qualitative monitoring methods may deviate from the quadrat methodology to toe-point transects (Evans et al. 1957). Data shall be used to measure native species growth performance, to estimate native and non-native species coverage, seed mix germination, native species recruitment and reproduction, and species diversity. Based on these results, the designated biologist shall make recommendations for maintenance, adaptive management, or remedial work efforts that may be needed to meet success criteria for the Project area vegetation management requisites.

Reporting

- Quarterly Reporting: For the first year, a Post-Construction Vegetation Management Quarterly Monitoring Progress Report shall be compiled by the Applicant detailing the post-construction results for areas where vegetation management has occurred within the Project area. The Post-Construction Vegetation Management Quarterly Monitoring Progress Reports shall include results for monthly qualitative monitoring; specifically, summarizing site status and recommended remedial measures. Each Post-Construction Vegetation Management Quarterly Monitoring Progress Report shall list estimated species coverage and diversity, species health and overall vigor, the establishment of volunteer native species, topographical/soils conditions, problem weed species, the use of the site by wildlife, significant drought stress, and any recommended

remedial and/or adaptive management measures deemed necessary to ensure compliance with specified vegetation management success criteria.

- Annual Reporting: Every year, for years one through five, the results of annual quantitative monitoring shall be compiled into an Annual Post-Construction Vegetation Management Report by the Applicant. Each annual report shall list plant species coverage and diversity measured during yearly quantitative surveys, compliance/non-compliance with required vegetation management success criteria, species health and overall vigor, the establishment of volunteer native species, hydrological and topographical conditions, use of the site by wildlife, and the presence of invasive weed species. In the event of where the required vegetation management success criteria are not fulfilled, the Annual Post-Construction Vegetation Management Report shall include remedial and/or adaptive management measures to ensure future success (CPUC 2016). These annual reports shall be forwarded by the qualified biologist to the appropriate State and Federal regulatory agencies (e.g., CPUC, BLM, and CDFW) at the end of each year following implementation of the Vegetation Management Plan, until the established success criteria have been met. Each Post-Construction Vegetation Management Annual Report shall include, at the minimum:

  - The name, title, and company of all persons involved in restoration monitoring and report preparation;
  - Maps or aerials showing vegetation management (i.e., restoration and invasive weed management areas), transect locations, and photos documentation with locations;
  - An explanation of the methods used to perform vegetation management, including, but not limited to, the number of acres for restoration and/or areas treated for removal of non-native plants; and
  - An assessment of the treatment success.

- **Planting Methodology and Palette**. Revegetation plantings shall be implemented in all areas impacted by Project activities. A description of the preferred methods for seeding shall be provided within the Vegetation Management Plan (e.g., hydroseeding, drill seeding, broadcast seeding, etc.). Additionally, a discussion on proposed timing of seeding, type and duration of irrigation system proposed (if needed), and erosion controls for revegetation activities, shall be included.

Several different plant palettes shall be developed depending on the vegetation communities proposed to be restored. The plant palettes shall include an appropriate native seed mix representative of the current species composition in the Project area.

Seed should be sourced from genetic stock appropriate to the Project vicinity. In additional, all plant materials used in Project revegetation shall be consistent with the maintenance of natural ecosystem processes. Supply of seed material and container plants will be purchased by the Contractor. If commercial seed mixes are purchased, they shall be native and free of noxious weeds. If seed from genetic stock appropriate to the Project

vicinity is not available, seeds can be collected within the Project vicinity with the appropriate permits and tags for native plant collection. The source of available seed must be approved by the BLM and CPUC prior to use in any species palates. Seeding and revegetation shall begin after construction has and will occur within 30 days post-construction. Supply of seed material and container plants will be purchased by the Contractor(s).

- **Noxious Weed and Invasive Species Management.** The Vegetation Management Plan will identify noxious and invasive weed species to be addressed in the Project area, describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. Specifically, an inventory of invasive and noxious weeds shall be compiled following pre-construction floristic surveys and disposed of at an appropriate off-site location (MM VEG-CEQA-2). If weeds are detected in the Project area following removal, then remedial actions shall be employed to eradicate noxious or invasive weed species and to prevent their subsequent spread.

All equipment, tools, and tires shall be properly cleaned and decontaminated of noxious weeds before entering the Project region. Prior to construction activities (i.e., including clearing, grubbing, etc.), a Weed Decontamination Form will be submitted to the Project Designated Biologist. The Weed Decontamination Form shall verify that construction related equipment used by the contractor(s), has been cleaned and deemed weed free, before entering the Project region. Vehicle and equipment wash, and inspection stations will be utilized minimize the introduction of invasive weeds or subsidy of invasive weeds.

Weed removal activities such as noxious/ invasive weed removal, and other varied management practices, are recommended before (e.g., topsoil weed removal) and after construction.

When installing sediment barriers, the use of certified weed-free mulch, straw, hay bales, or equivalent fabricated materials shall be prescribed.

The use of pesticides and/or herbicides is restricted in areas associated with waterways, wetlands, or areas that could impact water quality. Weed removal in jurisdictional areas adjacent to streams or wetlands shall be done using hands tools. Application of pesticides and/ or herbicides must be approved by the Project Designated Biologist, the appropriate local, State, and Federal regulatory agencies.

- **Soils and Contouring.** Native soils will be salvaged to the extent feasible. Specifically, soil horizons will be separated for the spoils, stored during construction, and returned to their native sites to ensure revegetation and restoration success. Restoring and preserving vegetation, as well as soil, will support and maintain native vegetation communities, associated carbon sequestration and nutrient cycling processes, and habitat for wildlife species. Erosion control measures will be implemented during all Project ground disturbance, including vegetation management activities.

Recontouring of areas that were altered from their original contour or gradient is required.

- **Treatment of Succulents.** Measures would be implemented to minimize the number of succulents (e.g., saguaro cacti) that must be relocated for the safe construction and operation of the transmission line. The Vegetation Management Plan shall detail requirements and methods for the salvage, storage, and replanting of succulent species. Saguaro cacti that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if they cannot be avoided through Project design. When possible, succulent species that must be removed would be relocated as directed by the appropriate State and Federal agencies (i.e., the BLM). Monitoring and management would be detailed in the Vegetation Management Plan.

- **Success Criteria.** A description of the success criteria and methods for achieving success of vegetation management, specifically restoration/revegetation efforts, and supplemental activities to be conducted. Success criteria in the Vegetation Management Plan shall address include the following components:

  - Compliance Success: evaluates compliance with Project scope, permits, contracts, etc.

  - Functional Success: evaluates habitat integrity and determines if restoration of the designated ecosystem(s) has been successful.

  - Landscape Success: measures functional success and how restoration, management, maintenance, and monitoring of Project vegetation has contributed to the ecological integrity of overall landscape and has further maintained and/or enhanced biodiversity. Success will be based on the establishment of seeded and planted species and the exclusion of exotic and ruderal species as compared to reference or neighboring sites.

- **Figures.** The Vegetation Management Plan shall include detailed figures indicating the locations and vegetation types of areas proposed for management (i.e., areas of temporary or permanent disturbance, mitigation areas, etc.).

  - The location of special-status plant species shall be consistent with the floristic inventory conducted as part of MM VEG-CEQA-2. Specifically, these figures shall meet the specific BLM Guidelines for mapping of succulent species (e.g., cacti, yuccas, etc.);

  - Mapped habitats for other species shall be consistent with the survey requirements;

  - Avoidance setbacks for sensitive vegetation species and habitats shall be delineated on the Vegetation Management Plan figures. Setbacks shall be consistent with appropriate distances outlined in the APM, BMP, and CMA measures, as well as those defined by State and Federal requisites for the Project; and

  - Vegetation Management Plan figures shall be updated, as necessary, to reflect current site conditions should they change.

- **Supplemental References.** In addition to the incorporation of the most-up-to-date State and Federal protocols, policies and guidance pertaining to vegetation management, the following Project-specific plans shall be referenced and/or included as supplemental attachments to the Vegetation Management Plan.
  - Erosion Control Plan (ECP)/ Erosion, Dust Control, and Air Quality Plan;
  - Fire Prevention Plan;
  - Project grading plans;
  - SPCC; and
  - SWPPP

MM VEG-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that a qualified biologist (approved by the CPUC, BLM, and CDFW) familiar with special-status species, sensitive vegetation communities, noxious and invasive vegetation species, and jurisdictional waters/wetlands present in the Project region, is appointed to oversee vegetation management activities.

Timing: Vegetation management shall be conducted, as needed, within the Project area prior to construction, during construction, and following the completion of Project activities; special attention will be paid to avoid nesting/breeding seasons for special-status wildlife and blooming periods for status plants where practicable.

Mitigation Monitoring and Report Program: Prior to Project commencement, pre-construction vegetation surveys shall be conducted by an Applicant designated qualified biologist. A Vegetation Management Plan shall be prepared by the Applicant and approved by the appropriate Federal and State regulatory agencies prior to Project commencement. Following Project completion, the Applicant shall ensure post-construction vegetation management surveys are completed quarterly and annually. Post-Construction Vegetation Management Quarterly Monitoring Reports, and Post-Construction Vegetation Management Annual Monitoring Reports shall be prepared by the Applicant and submitted to the appropriate Federal and State regulatory agencies.

Standards for Success: Restore temporarily disturbed areas to pre-construction conditions, or better, and provide for habitat preservation/creation/restoration resulting from permanent impacts to sensitive vegetation species, sensitive vegetation communities, and jurisdictional waters/wetlands. Reduce the spread and introduction of noxious and invasive vegetation species. Ensure all Project vegetation management success criteria are met. Remedial and/or adaptive management measures shall be implemented to meet vegetation management success criteria for the Project, as needed.

MM VEG-CEQA-2: Conduct Pre-Construction Floristic Surveys.

The following APMs, BMPs, and CMAs shall be incorporated within this MM BIO-VEG-CEQA-2: APM BIO-2; BMP BIO-02; APM BIO-4; APM BIO-11; BMP BIO-11; BMP BIO-24; BMP BIO-41; BMP BIO-52; BMP BIO-53; CMA DFA-BIO-IFS-1; and CMA LUPA-

BIO-1.Prior to the start of ground disturbance, including fencing, grading, or construction, the Applicant shall designate a qualified biologist/botanist (approved by the CPUC, BLM, and CDFW) to conduct pre-construction floristic surveys for the Project. The purpose of the pre-construction floristic surveys is to identify if and/where special-status plant species occur within the Project area. The pre-construction floristic surveys shall also adhere to the following protocols and requisites detailed by the BLM, and the most up-to-date State and Federal protocols, policies, and guidance:

- CNPS Botanical Survey Guidelines (CNPS 2001); General Rare Plant Survey Guidelines (Cypher 2002);
- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plant (USFWS 1996);
- Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018a);
- Survey Protocols Required for NEPA/ESA Compliance for BLM Special-Status Plant Species (BLM 2009).

Reconnaissance-level surveys, floristic in nature, will be conducted to inventory plants occurring within the Project area. The surveys shall be completed prior to Project commencement. It is recommended that the surveys be conducted concurrently with blooming periods for all special-status species known to occur in the Project and surrounding area as detailed below. The purpose of the surveys is to identify and record all observable plant species (at a minimum to the genus level); identify and map areas where special-status plant species occur and to support pre-construction requisites detailed in the Vegetation Management Plan (MM VEG-CEQA-1) (e.g., avoidance areas, occurrences of invasive and noxious weeds, etc.).

A complete inventory of observed plant species will be compiled and included as an appendix in the Vegetation Management Plan (MM VEG-CEQA-1). In addition, ACOE national wetland indicator status, and the native/non-native status of each species observed shall be included. For invasive and noxious plant species, their State and Federal ranks shall be listed using up-to-date information provided by the U.S. Department of Agriculture (USDA) and the California Invasive Plant Council (Cal-IPC).

a) Surveys for Sensitive Plant Species: To avoid and/or minimize impacts to endangered, threatened, rare, and/or special-status plant species within the Project area, the designated qualified biologist/botanist will conduct pre-construction floristic surveys for sensitive plant species. The pre-construction floristic surveys shall be at a reconnaissance-level and timed to cover the appropriate bloom period(s) for the sensitive plant species that have known occurrences and/or have a moderate potential to occur in the Project area. Specifically, for the Project, three pre-construction bloom-period floristic surveys are recommended to be conducted to maximize the potential for observations during the appropriate bloom-period for special-status species that have known occurrences or the potential to occur in the Project area, which include reference populations for each special-status species shall be checked to ensure surveys are conducted during appropriate blooming periods. If special-status plants

are determined to have no presence within the Project area, then no further action or mitigation is required.

b) If special-status plant species are determined present within the Project area during pre-construction floristic surveys, Project activities shall be reduced and minimized to avoid impacts to the extent feasible.

In addition, mapping the population and placing flagging and/or exclusion fencing to protect the special-status plant species within the Project area during construction shall be implemented. Installation of environmentally sensitive area fencing and appropriate signage at an appropriate setback or buffer distance, starting from the edge of the individual and/or population. Signage should indicate the area is environmentally sensitive and not to be disturbed. Specifically, if any Federal or State listed threatened or endangered plant species are detected in the Project area that may be impacted, a buffer zone shall be implemented of sufficient size to prevent direct or indirect disturbance to the special-status plants from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist. At a minimum, the buffer for trees or shrubs species shall be equal to twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. The buffer for herbaceous species shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then the Applicant shall develop and implement site-specific monitoring and put other measures in place to avoid species impacts.

If special-status plants are determined present in the Project area during pre-construction floristic surveys and direct and/or unavoidable impacts to special-status plant species shall result from Project activities, then consultation with appropriate Federal and State agencies will be required to develop acceptable mitigation (e.g., agency recommended mitigation may include translocation of individual plants, rectification of impact by seed collecting and stockpiling for replanting/replacement, mitigation fees, and/or permitting). Once mitigation has been determined by the appropriate State and Federal agencies, then a Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan shall be developed and implemented upon approval of the agencies. Specifications for the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan are detailed in MM VEG-CEQA-4 below. Additional reporting and protocol-level survey requirements will be detailed in the Vegetation Management Plan criteria (MM VEG-CEQA-1) and in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan.

In addition, as part of the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, if special-status species individuals and/or populations are identified within the Project area, then the designated qualified biologist/botanist will collect specific ancillary data using the *General Instruction for Filling Out CNDDB Field Forms* (CDFW 2018b). The Applicant is responsible for ensuring submittal of all special-status plant species observations to CDFW CNDDB.

MM VEG-CEQA-2 Implementation

Responsible Party: Supervision, guidance, and verification of the implementation of these measures shall be achieved by the Applicant and the designated qualified biologist/botanist.

Timing: A series of three floristic surveys, to capture different blooming periods, will be conducted prior to the start of construction activities; surveys will be conducted in February, May, and September.

Monitoring and Reporting Program: Surveys and monitoring of special-status plants, if identified, shall be conducted by a designated qualified biologist/botanist. The Applicant shall produce a Pre-Construction Floristic Survey Report documenting the results of the floristic survey(s) and submit to the BLM and CPUC, as well as all other appropriate State and Federal agencies.

If special-status plants are determined present in the Project area during pre-construction and impacts are unavoidable, then consultation with appropriate Federal and State agencies will be completed and Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan will be developed and implemented.

Standards for Success: No net loss of special-status plant species and/or habitat.

MM VEG-CEQA-3: Conduct Focused Surveys for Harwood's Eriastrum

MM VEG-CEQA-3 will incorporate the following BMPs and CMAs: BMP BIO-24; BMP BIO-31; BMP BIO-49; BMP BIO-53; BMP BIO-54; LUPA-BIO-DUNE-2; CMA LUPA-BIO-PLANT-2; and CMA LUPA-BIO-PLANT-3.

Harwood's eriastrum is an annual herb that is native to California. It is ranked as: CRPR 1B.2 (e.g., fairly endangered in California), a California State Rank of S2 (e.g., imperiled), and is ranked 'sensitive' by the BLM (CNPS 2016).

The Applicant shall designate a qualified botanist (approved by the CPUC, BLM, and CDFW) to conduct pre-construction floristic surveys prior to the commencement of any activities that may modify vegetation (e.g., clearing, mowing, or ground-breaking activities). Pre-construction floristic surveys shall be conducted in a manner which maximizes the likelihood of locating Harwood's eriastrum that may be present. As such, floristic surveys should be conducted in the Project area during the appropriate bloom-period (i.e., March to June) and may be conducted in conjunction with the floristic surveys required in MM VEG-CEQA-2. Pre-construction floristic surveys should be 'floristic in nature', meaning that every plant taxon that occurs on site is identified to the taxonomic level necessary to determine species and listing status. The pre-construction floristic surveys shall also adhere to the following protocols and requisites detailed by most up-to-date State and Federal protocols, policies, and guidance:

- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plant (USFWS 1996);

- Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018a); and

- Survey Protocols Required for NEPA/ESA Compliance for BLM Special-Status Plant Species (BLM 2009).

If individuals and/or populations of Harwood's eriastrum are determined present within the Project area during pre-construction floristic surveys, Project activities shall be reduced and minimized to avoid impacts to the extent feasible. At a minimum, the following avoidance and minimization BMPs shall be implemented:

- Avoid Harwood's eriastrum individuals through micrositing facilities to the maximum extent feasible;

- Within suitable habitat for Harwood's eriastrum, keep equipment to the minimum necessary to accomplish the necessary work;

- On BLM lands, use existing roads or routes. Avoid establishing feature that shall interfere with Harwood's eriastrum habitat or with the movement of sand;

- Staging and temporary-use sites shall not be located within suitable habitat for Harwood's eriastrum;

- Specification for the avoidance, minimization, and protection of Harwood's eriastrum shall be detailed in in the Project specific Vegetation Management Plan (MM VEG-CEQA-1) and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4).

Mapping the population and placing flagging and/or exclusion fencing to protect Harwood's eriastrum within the Project area during construction shall be implemented. Installation of environmentally sensitive area fencing and appropriate signage, starting from the edge of the individual and/or population, shall be implemented. Signage should indicate the area is environmentally sensitive and not to be disturbed. At a minimum, a buffer zone shall be developed for the Harwood's eriastrum of sufficient size to prevent direct or indirect disturbance to the species from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist. The buffer for the Harwood's eriastrum shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then the Applicant shall develop and implement site-specific monitoring and put other measures in place to avoid species impacts.

If Harwood's eriastrum are determined present in the Project area during pre-construction floristic surveys and direct and/or unavoidable impacts will result from Project activities, then occupied lands will be replaced at a minimum 3:1 ratio and consultation with appropriate Federal and State agencies will be required to develop acceptable mitigation (e.g., agency recommended mitigation may include translocation of individual plants, rectification of impact by seed collecting and stockpiling for replanting/replacement, mitigation fees, and/or permitting). Once mitigation has been determined by the appropriate State and Federal agencies, then specifications

for Harwood's eriastrum, including reporting specifications and additional surveying and monitoring, shall be incorporated into the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM VEG-CEQA-4), and the Vegetation Management Plan criteria (MM VEG-CEQA-1).

In addition, as part of the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, if new occurrences of Harwood's eriastrum are identified within the Project area during construction, then a designated qualified botanist will collect specific ancillary data using the *General Instruction for Filling Out CNDDB Field Forms* (CDFW 2018b). The Applicant is responsible for ensuring submittal of all special-status plant species observations to CDFW CNDDB.

MM VEG-CEQA-3 Implementation

Responsible Party: Supervision, guidance, and verification of this measure shall be achieved the Applicant. Surveys and monitoring for Harwood's eriastrum shall be conducted by the designated qualified botanist (approved by the CPUC, BLM, and CDFW).

Timing: One pre-construction floristic survey shall be conducted during the appropriate bloom-period for Harwood's eriastrum (i.e., March to June).

Monitoring and Reporting Program: The Applicant shall produce a Pre-Construction Harwood's Eriastrum Floristic Survey Report, documenting the results of the floristic survey and submit to the appropriate Federal and State agencies. Floristic survey results for Harwood's eriastrum will also be documented in both the Vegetation Management Plan and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. In addition, measures to reduce impacts, protection species individuals and populations, mitigate, and restore for Harwood's eriastrum will be documented in the aforementioned report and plans, if necessary.

Standards for Success: No net loss of Harwood's eriastrum. If Harwood's eriastrum is determined present in the Project area during pre-construction floristic surveys, and impacts are unavoidable, then consultation with appropriate the Federal and State agencies will be completed.

MM VEG-CEQA-4: Compensation for Impacts to Special-Status Plant Species and Sensitive Communities.

The following APMs, BMPs, and CMAs shall be incorporated within this MM VEG-CEQA-4: APM BIO-2; BMP BIO-2; APM BIO-4; APM BIO-11; BMP BIO-11; APM BIO-13; APM BIO-14; APM BIO-15; BMP BIO-15; APM BIO-16; BMP BIO-24; BMP BIO-25; BMP BIO-31; BMP BIO-37; BMP BIO-41; BMP BIO-43; BMP BIO-52; BMP BIO-53; BMP BIO-55; BMP VEG-01; BMP VEG-02; CMA DFA-BIO-IFS-1; CMA DFA-BIO-IFS-2; CMA DFA-VPL-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-7; CMA LUPA-BIO-9; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-5; CMA LUPA-BIO-PLANT-2A; CMA LUPA-BIO-8; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-PLANT-1; CMA LUPA-BIO-PLANT-2; CMA LUPA-BIO-PLANT-3; CMA LUPA-BIO-RIPWET-1;

CMA LUPA RIPWET-3; CMA LUPA-BIO-SVF-1; CMA LUPA-BIO-SVF-6; CMA LUPA-SW-13; and CMA LUPA-SW-16.

If special-status plant species are identified during pre-construction floristic surveys (MM VEG-CEQA-2 and MM VEG-CEQA-3), and there is the potential for impacts, then the Applicant shall implement the measures listed below. Mitigation shall be accordance with Federal and State agencies requisites, as well as with the *Policy on Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants* (CNPS 1998), and developed and approved by the appropriate Federal and State regulatory agencies. Mitigation for impacts to special-status plant species shall consider and overlap with compensation for special-status wildlife, sensitive vegetation communities, and jurisdictional waters and wetlands.

Documentation: The Applicant shall develop and implement a Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. The Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan shall summarize the results of the pre-construction floristic surveys and describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seed or below-ground rootstock (e.g., poor rainfall, recent grazing, or wildfire). The plan will include management considerations for Harwood's eriastrum and serve as the Harwood's Eriastrum Linear ROW Protection Plan, as described by BMP BIO-31 and referenced by MM BIO-CEQA-1. The Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan shall at a minimum include:

- Species and locations (i.e., figures) of plants identified for salvage;
- Criteria for determining whether an individual plant is appropriate for salvage;
- The appropriate season for salvage;
- Equipment and methods for collection, transport, and re-planting plants or seed banks, to retain intact soil conditions and maximize success;
- Planting methodology for off-site introduction mitigation methods;
- For shrubs, cacti, and yucca, a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation;
- Details regarding storage of plants or seed banks for each species;
- Location of the proposed recipient site, and detailed site preparation and plant introduction techniques for topsoil storage, as applicable;
- A description of the irrigation, weed control, and other maintenance activities;
- Success criteria, including specific timeframe for survivorship and reproduction of each species;
- A schedule for all mitigation activities; and
- A detailed monitoring program, commensurate with the goals detailed in the Vegetation Management Plan (MM VEG-CEQA-1).

- **Onsite Avoidance and Minimization**: Minimizing impacts by limiting the degree or magnitude of the action, and avoidance of special-status plant species is the preferred strategy, wherever feasible.

Specifically, Project work areas shall be located to avoid or minimize impacts to special-status plants. Effective avoidance through Project design shall include a buffer area surrounding each avoided occurrence, where no Project activities will take place. The buffer area will be clearly staked, flagged, and signed for environmentally sensitive area avoidance prior to the beginning of ground-disturbing activities, and maintained throughout the active construction phase(s). The buffer zone shall be of sufficient size to prevent direct or indirect disturbance to the plants from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist. At a minimum, the buffer for trees or shrubs species shall be equal to twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. The buffer for herbaceous species shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then the Applicant shall develop and implement site-specific monitoring and put other measures in place to avoid species impacts.

- **Onsite Compensation:** Compensation for unavoidable temporary impacts to special-status plant species shall include on-site habitat restoration with similar species compositions to those present prior to construction at a ratio of 1.5:1. Restoration measures shall be documented in the Vegetation Management Plan (MM-VEG-CEQA-1), as well as the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan.

- **Off-Site Compensation.** Compensation for permanent impacts to special-status plant species based on the results of the floristic surveys shall include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program at a minimum 3:1 replacement ratio. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities.

The Applicant shall restore all temporary impacts to sensitive vegetation communities (e.g., blue Palo Verde-ironwood woodland, mesquite thickets, bush seepweed scrub, etc.) and special-status species habitat at a minimum ratio of 1.5:1, as detailed in the Vegetation Management Plan (MM-VEG-CEQA-1) and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA4). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism.

To compensate for permanent impacts to sensitive vegetation communities and special-status species habitat, the Applicant shall provide the creation and/or restoration of habitat at the following ratios:

- Permanent impacts to sensitive vegetation communities, (e.g., riparian desert woodland habitats, blue Palo Verde-ironwood woodland, mesquite thickets, etc.) shall be mitigated at a ratio of 5:1;
- Permanent impacts to other sensitive vegetation communities shall also be mitigated at a ratio of 5:1; and
- Permanent impacts to jurisdictional waters/wetlands shall be mitigated at a minimum ratio of 2:1, or as otherwise specified by the appropriate Federal and State regulatory agencies.

Off-site compensation lands and/or established mitigation bank program will be identified, if available, in coordination with the appropriate Federal and State regulatory agencies. Off-site compensation lands will consist of habitat occupied by the impacted special-status plants at the appropriate ratio of acreage and the number of plants for any occupied habitat affected by the Project. Occupied habitat will be calculated on the Project site and on the compensation lands as including each special-status plant occurrence. Off-site compensation shall be documented in the Project-specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan and approved in consultation with the appropriated Federal and State regulatory agencies.

The Applicant shall provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a “qualified easement holder”; the CDFW is a qualified easement holder. To qualify as a “qualified easement holder” a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements for impacts to special-status species, have adopted the Land Trust Alliance’s Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. The Applicant shall also provide the “qualified easement holder” with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity.

For special-status plant restoration or enhancement activities, several techniques can be applied including:

- **Salvage.** The Applicant shall consult with the designated qualified biologist/botanist, as well as the appropriate Federal and State regulatory agencies, regarding the feasibility and likely success of salvage efforts for each special-status plant species. If salvage is deemed to be feasible, then Applicant shall incorporate salvage measures into the Project-specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, which shall be approved by the appropriate Federal and State regulatory agencies prior to implementation.

- **Propagation and Off-Site Introduction.** If salvage and relocation is not believed to be feasible for special-status plants, then Applicant shall consult with appropriate Federal and State agencies, as well as other qualified entities if needed, to develop an appropriate experimental propagation and relocation strategy, based on the life history of the species affected. The strategy will include at minimum: (a) a planting methodology including strategies for species specific collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d); time of year that the salvage and other planting or transplantation practices will occur; (e) irrigation; (f) erosion controls; (g) success criteria; and (h) a detailed monitoring program. All propagation and off-site introductions strategies shall be documented in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan for the Project.
- **Restoration:** Restoration can be used to mitigate impacts and depending upon the degree of impact, habitat restoration may be as simple as removing debris and controlling public access. In more complex situations, however, partial or total restoration of degraded habitat may require extensive revegetation, and soil protection and stabilization programs. The strategy will include at a minimum: (a) BLM approved genetically and ecologically appropriate native plant materials suitable for the site; (b) a description of any required topsoil salvage, plant salvage, seeding techniques, and methods to stabilize and shape soil surface to reduce soil erosivity; (c) monitoring and reporting protocols; and (d) success criteria. Restoration must be tailored to the specific project site based on the habitat and species involved (CNPS 1998).

- **Monitoring and Maintenance:** All mitigation for special-status plant species shall be monitored to assess progress and to make recommendations for successful establishment. Monitoring shall be performed by a qualified biologist/botanist that the Applicant has designated. At a minimum, Monitoring shall include qualitative and quantitative methods as described in MM VEG-CEQA-1 for the Vegetation Management Plan and MM VEG-CEQA-4 Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. Monitoring shall identify the need for remediation or maintenance work well in advance of final success/failure determination. Monitoring and maintenance progress toward achieving success criteria, conditions, and all observations pertinent to eventual success shall be documented in the Post-Construction Vegetation Management Quarterly Monitoring Progress Reports, and the Annual Post-Construction Vegetation Management Report, as described in the Vegetation Management Plan measure (MM-VEG-CEQA-1). In addition to the Vegetation Management Plan annual and quarterly reporting specifications, reporting for mitigation monitoring and maintenances shall also include Progress reports shall include: (a) estimated species survival; (b) species health and overall vigor; (c) the establishment of volunteer native species; (d) topographical/soils conditions; (e) problem weed species; (f) the use of the site by wildlife; (g) significant drought stress; and (h) recommended remedial measures deemed necessary to ensure compliance with specified success criteria. If Federally

and/or State listed plant species are identified within Project disturbance areas, then consultation with the appropriate resource agencies will be required to develop acceptable mitigation prior to construction, which may include additional measures. Conservation measures to protect or restore listed special-status plant species, or their habitat, may be required by the appropriate Federal and State regulatory agencies before impacts are authorized.

MM VEG-CEQA-4 Implementation

Responsible Party: Supervision, guidance, and verification of compensation for impacts to special-status plants and sensitive vegetation communities, as outlined in this measure, shall be achieved by the Applicant.

Timing: Prior to construction, if special-status plant species or sensitive vegetation communities will be impacted by the Project, then the Applicant shall develop and implement mitigation, with the approval by the appropriate Federal and State regulatory agencies.

Monitoring and Reporting Program: The Applicant shall develop and implement a Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan.

Standards for Success: No net loss of special-status plant species, and/or habitat, or sensitive vegetation communities. If special-status plant species or sensitive vegetation communities are determined present in the Project area during pre-construction floristic surveys and impacts are unavoidable, then establishment of a new viable occurrence, equal or greater in extent and numbers, to the affected occurrence shall be met. Additionally, consultation with the appropriate Federal and State agencies will be completed.

MM WIL-CEQA-1: Develop and Implement an APP and BBCS.
The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL CEQA-1: BMP BIO-19, APM BIO-20, APM BIO-21, BMP BIO-21, BMP BIO-29, BMP BIO-30, BMP BIO-33, BMP BIO-40, BMP BIO-45, BMP BIO-48, CMA LUPA-BIO-14, CMA LUPA-BIO-16, CMA LUPA-BIO-17, CMA LUPA-BIO-COMP-2, CMA LUPA-BIO-IFS-11, CMA-LUPA-BIO-IFS-12, CMA LUPA-BIO-BAT-1, CMA LUPA-BIO-COM-2, CMA LUPA-BIO-DUNE-5, CMA LUPA-BIO-IFS-13, CMA LUPA-BIO-IFS-14, CMA LUPA-BIO-IFS-24, CMA LUPA-BIO-IFS-25, CMA LUPA-BIO-IFS-26, CMA LUPA-BIO-IFS-27, CMA LUPA-TRANS-BIO-1, CMA LUPA-TRANS-BIO-2, and CMA LUPA-TRANS-BIO-3.

The Project Applicant shall prepare an APP and BBCS, which will also include a component for a NBNMP, as identified in the BBCS in BMP BIO-29, in coordination with and approval by the applicable permitting/resource agencies (i.e., BLM, CDFW, USFWS, CPUC) prior to the start of construction. Additionally, the components of the Burrowing Owl Avoidance, Minimization, and Mitigation Plan (MM WIL-CEQA-3) and the Bat Management and Protection Plan (MM WIL-CEQA-4) will also be included under the overarching APP/BBCS Plan. The specifics of the APP and BBCS will include the following:

- APP: The APP will follow the APLIC/USFWS 2005 APP Guidelines which specifies program design for transmission projects in order to reduce operational avian risks that result from interactions with transmission lines. This goal of this guidance is to reduce avian mortality from electrocution and collision with the transmission lines. The APP Guidelines state that although each APP developed for a specific project may be different, the overall goal of reducing avian mortality is the same across all developed APPs. The APP developed for the Project shall include, at a minimum, the following consideration and evaluation of principals identified in the APP Guidance:

1. **Corporate policy:** Confirming the company's commitment to work cooperatively towards the protection of migratory birds;
2. **Training:** All appropriate utility personnel, including managers, supervisors, line crews, engineers, etc. shall be properly trained in avian issues (which shall be enforced through MM BIO-CEQA-2, Implement a Worker Environmental Awareness Program);
3. **Permit Compliance:** Identify the process in which the Applicant will obtain and comply with all necessary permits related to avian issues;
4. **Construction Design Standards**: Avian interactions shall be considered in the design and installation of the transmission line as well as during operations and maintenance of the facility. Construction configurations from the *Suggested Practices for Raptor on Power Lines; The State of the Art in 1996* and *Mitigating Bird Collisions with power Lines: The State of the Art in 1994*, or the most current editions of these documents shall be consulted during the design phase of the Project to ensure new construction is avian-safe;
5. **Nest Management:** Procedures for net management on the transmission lines shall be explained to employees during training to ensure uniform treatment of avian nest issues among personnel;
6. **Avian Reporting System:** Development of a reporting system which shall include reporting of any avian mortalities, as required by any federal or State permits. The reporting system can also help pinpoint areas of concerns by tracking both the specific locations where mortalities may be occurring, as well as the extent of such mortalities;
7. **Risk Assessment Methodology:** A focus on the areas with the highest risk to migratory birds shall be the focus of the APP and therefore, a method for evaluating the risks posed to migratory birds in a manner that identified areas and issues of particular concern shall be developed;
8. **Mortality Reduction Measures:** After completing the risk assessment, the efforts for avian protection shall be focused on areas of concern. A mortality reduction plan may need to be implemented depending on the results of the risk assessment. This approach could be implemented through direction of where monitoring should occur, where retrofits should be focused, and where new construction warrants special attention to raptor and other bird issues.
9. **Avian Enhancement Options:** In addition to taking steps to reduce mortality risk to avian species, the developed APP also may include opportunities to enhance avian populations or habitat, including developing nest platforms, managing habitats to benefit migratory birds, or working cooperatively with agencies or organizations in such efforts;

10. **Quality Control:** The developed APP may also include a mechanism to review existing practices, ensuring quality control;
11. **Public Awareness:** The developed APP shall include a method to educate the public about the avian electrocution issues, the developed APP, as well as its success in avian protection.
12. **Key Resources:** The developed APP shall identify key resources to address avian protection issues including, for example, a list of experts who may be called upon to aid in resolving avian issues.

- BBCS: The purpose of the BBCS is to outline measures/methods to minimize potential Project effects to nesting birds and avoid unauthorized take as defined by both the MBTA and the CDFC, the latter which covers incidental take. The NBBMP (developed as a part of the BBCS) shall be approved by the above noted agencies prior to the site disturbance or pre-construction activities and be implemented by the Applicant throughout construction activities. Additionally, the current APLIC guidelines shall be incorporated into the NBBMP, which includes protections for nocturnal migrants (i.e., lighting controls) and species along the Colorado River and near agricultural fields (APLIC 2006, 2012) (See BMP BIO-33). Specifically, these guidelines will be used to minimize the potential for attracting birds and bats to the proposed infrastructure (transmission lines and facilities). Any nighttime lighting associated with construction will be temporary and shielded in order to provide safe working conditions while limiting light spillover outside of the construction area. Implementation of APM AES-15 will also ensure that lighting, will be directed in a downward position. Pre-construction surveys shall be completed in accordance with MM WIL-CEQA-6 below and if breeding birds with active nests are found prior to or during construction, a qualified avian biologist shall establish a minimum 300-foot buffer (500 foot for raptors) around the nest and no activities shall be allowed within the buffer(s) until the young have fledged from the nest or the nest fails (CPUC 2016). The prescribed buffers may be adjusted by a qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. Buffer reductions for listed or special-status species may require coordination with the USFWS and/or CDFW. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. An avian biologist shall be responsible for documenting the results of the surveys (MM WIL-CEQA-6 below), nest buffers implemented, and the results of ongoing monitoring and shall provide a copy of the monitoring reports for impact areas to the appropriate resource agencies (i.e., USFWS and CDFW) (CPUC 2016).

- If trees with nests are to be removed as part of Project construction activities, they shall be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided all trees shall be inspected for active nests by the avian biologist. If nests are found within these trees, and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors shall occur until the young have fledged the nest

(CPUC 2016). At a minimum, the NBBMP (as a part of the BBCS) shall include the following:

- Definitions of standard nest buffers for each species or group of species, depending on characteristics and conservation status for each species.
- A notification procedure for buffer distance reductions should they become necessary under special circumstances.
- A monitoring protocol including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Project-related effects to nesting birds shall be minimized.
- A protocol for documenting and reporting any inadvertent contact or effects to birds or nests.
- A summary of applicable State and Federal laws and regulations, including definition of what constitutes a nest or active nest under State and Federal law. Under the USFWS' Migratory Bird Permit Memorandum, active nests are defined as nests with eggs or young (USFWS 2003). CFGC Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. The CFGC does not provide a definition for active nests, but previous regulatory actions by the CDFW have interpreted this term to refer to nests that are at least 25 percent built.
- A list of bird species potentially nesting on or near the Project area, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species.
- A discussion of how construction of the Project has been scheduled, to avoid or minimize Project impacts to nesting birds. Activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.
- Discussion on nest buffer modification or reduction guidelines, including reporting procedures to the appropriate agencies (i.e., CDFW, USFWS, and CPUC).
- Discussion on use of nest deterrents and communication protocols for on-site monitors.
- Monitoring and reporting requirements.
- Detailed noise monitoring guidelines for active breeding territories and/or nests for special-status species that may occur within 500-feet of the Project area.
- Procedures for the calculation of a fee, to be reassessed every five years, to fund compensatory mitigation for bird and bat mortality impacts; this shall be based on requirements described in CMA LUPA-BIO-COMP-2.

MM WIL-CEQA-1 Implementation

Responsible Party: The APP/BBCS shall be developed and implemented by the Applicant and approved by the BLM, CDFW, USFWS, and CPUC.

Timing: The APP/BBCS shall be prepared/approved prior to the start of construction activities and shall be implemented throughout the duration of construction. The APP specifically shall be implemented throughout the life of the Project while the BBCS shall focus on the construction and maintenance of the Project.

Mitigation Monitoring and Reporting Program: The Applicant shall retain a qualified avian biologist (approved by the CPUC) to perform monitoring surveys within 500-feet of the Project area. The qualified avian biologist shall report any inadvertent contact or effects to birds or nests within the Project area to the BLM, CDFW, USFWS, and CPUC. The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the NBBMP. This report shall be made available to the BLM, CDFW, USFWS, and the CPUC. The monitoring requirements for the APP shall conform to the APLIC Guidance including identifying and responding promptly to any avian mortality and including adaptive management for avian issues related to the Project.

Standards for Success: Adverse effects to birds shall be avoided or minimized to less than significant levels as determined by the qualified avian biologist in consultation with the BLM, CDFW, USFWS, and CPUC.

MM WIL-CEQA-2: Develop and Implement a Raven Management Plan.

The following BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-2: BMP BIO-28, CMA LUPA-BIO-6, and CMA-LUPA-TRANS-BIO-1.

A Raven Management Plan shall be submitted to the BLM, CDFW, and County for approval prior to the start of ground disturbance and issuance of a County grading permit. The Raven Management Plan shall address Project characteristics and activities that may attract or subsidize common ravens. The Raven Management Plan shall include measures designed to: 1) minimize attracting and subsidizing ravens, 2) provide education to Project personnel (MM BIO-CEQA-2) 3) remove raven nests and offending ravens, and 4) implement adaptive management. The Applicant shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below.

The Raven Management Plan shall:

- Identify conditions associated with the Project that might provide raven subsidies or attractants;
- Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
- Describe control practices for ravens;
- Establish thresholds that would trigger implementation of control practices; and

- Address monitoring and nest removal during construction and for the life of the Project.

The Applicant shall submit payment into an account established for the Project held by the National Fish and Wildlife Foundation (NFWF) to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or more current guidance as provided by USFWS. The contribution to the regional raven management plan will be $105 per acre impacted.

MM WIL-CEQA-2 Implementation

Responsible Party: The Raven Management Plan shall be developed and implemented by the Applicant and approved by the CPUC, BLM, and CDFW.

Timing: The Raven Management Plan shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the implementation of the Raven Management Plan or the USFWS Regional Raven Management Plan. This report shall be made available to the BLM and the County.

Standards for Success: The Raven Management Plan is implemented, and ravens are, to the extent possible, deterred from nesting/foraging within the Project area.

MM WIL-CEQA-3: Develop and Implement Burrowing Owl Avoidance, Minimization, and Mitigation Plan The following BMPs and CMAs shall be incorporated within this MM WIL-CEQA-3 and MM WIL-CEQA-7: BMP BIO-30, CMA-LUPA-BIO-IFS-12, CMA LUPA-BIO-IFS-13, and CMA LUPA-BIO-IFS-14.

The Burrowing Owl Avoidance, Minimization, and Mitigation Plan (BOAMMP) would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14 and will be developed as a part of the APP/BBCS (MM WIL-CEQA-1). The Applicant shall submit a BOAMMP to BLM and CPUC for approval prior to any ground disturbing activities in California. The BLM and CPUC will include CDFW in the review process and incorporate their comments as appropriate. The BOAMMP will include direction for burrowing owls which shall include a combination of active and passive relocation efforts consistent with LUPA BIO-IFS-12, LUPA BIO-IFS-13, and LUPA-BIO-IFS-14. Any relocation shall include follow up monitoring procedures.

If burrowing owls, or burrowing owl habitat is found within the Project area during pre-construction surveys as described in MM WIL-CEQA-7, the following measures shall be implemented and enforced by the BLM and CPUC throughout construction of the Project.

If pre-construction focused burrowing owl surveys determine that burrowing owls occupy the Project area, a tiered approach referred to as an Avoidance and Relocation Strategy shall be implemented to avoid burrowing owls, relocate burrowing owls, and prevent recolonization of areas (where needed, such as construction and/or substation areas) by burrowing owls, as outlined below. These methods generally adhere to the recommendations contained in the *Staff*

Report on Burrowing Owl Mitigation currently used by CDFW to guide burrowing owl mitigation measures. The four avoidance and relocation strategy tiers are:

- Tier 1 – Avoidance Buffers
- Tier 2 – Passive Relocation
- Tier 3 – Prevention of Recolonization
- Tier 4 – Active Relocation (Optional)

Methods to avoid impacts to burrowing owls shall take precedence over passive or active relocation. If pre-construction focused burrowing owl surveys determine that burrowing owls occupy the Project area, including within the 150-meter buffer, the qualified Project biologist will evaluate each occupied burrow to determine whether the Project is likely to directly impact or substantially indirectly impact the burrow such that injury or death of a burrowing owl could occur. Avoidance buffers can be implemented to avoid direct and substantial indirect impacts to owl burrows and individuals. A substantial indirect impact would be a situation where even though the burrow is not directly impacted during construction, the construction activities could potentially cause injury or mortality of owls, including from collisions with nearby construction equipment, vehicles, fences, or walls. The Project biologist will have discretion in determining whether an indirect impact is substantial.

If occupied burrowing owl burrows are found within the Project disturbance footprint or survey buffer during pre-construction surveys, or if burrowing owls arrive on site after construction activities commence, a qualified biologist shall assess the risk of construction activities to the burrowing owl. This risk assessment shall consider several factors, including, but not limited to, the following:

- Location of the burrow (e.g., inside the disturbance footprint, within 5 meters (16.4 feet) of the disturbance footprint, more than 40 meters (131.2 feet) from the disturbance footprint);
- Type of burrow use (i.e., occupied nest burrow or non-nesting roost burrow that may include wintering or satellite burrows, referred to herein simply as “roost burrow”);
- Type of construction activity and level of potential disturbance (e.g., high disturbance, such as mass grading and excavation versus low disturbance, such as painting and landscaping); and
- Timing of burrow use (e.g., occupation of a burrow after construction has been started versus prior to construction).

Avoidance buffers shall be strictly required for occupied nest burrows so that nesting activities are not disturbed, and nesting pairs have the opportunity to rear and successfully fledge young. Per the guidelines outlined by the *Staff Report on Burrowing Owl Mitigation*, a standard minimum avoidance buffer ranging between 200 meters (656 feet) and 500 meters (1,640 feet) depending on the level of disturbance will be initially applied to occupied nest sites between April 1 and October 15, and 50 meters (164 feet) to 500 meters (1,640 feet) between October 16

and March 31. Burrows will be monitored by a qualified biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW.

Establishing avoidance buffers from occupied roost burrows during October 16 through March 31 or from burrows that have been determined to not support nesting (through the non-invasive methods cited above) during the breeding season will initially be based on the buffers described in the *Staff Report on Burrowing Owl Mitigation*. Burrows will be monitored by a qualified biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW. Roost burrows detected during pre-construction surveys fall into three categories: (1) burrows within the proposed Project disturbance footprint, (2) burrows in close proximity to the disturbance footprint, and (3) burrows farther from the disturbance footprint, but still potentially within the impact area for burrowing owl.

The Applicant shall report any special-status species and natural communities detected during Project surveys to the CNDDB.

MM WIL-CEQA-3 Implementation

Responsible Party: The BOAMMP shall be developed and implemented by the Applicant and approved by the BLM, CPUC, and CDFW.

Timing: The BOAMMP shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the BOAMMP. This report shall be made available to the BLM, CPUC, and CDFW.

Standards for Success: Any significant impacts to nesting or burrowing owls shall be avoided or minimized to less than significant levels.

MM WIL-CEQA-4: Develop and Implement a Bat Management and Protection Plan

The following BMPs and CMAs shall be incorporated within this MM WIL-CEQA-4: BMP BIO-29, BMP BIO-33, BMP BIO-40, CMA LUPA-BIO-14, CMA LUPA-BIO-16, CMA LUPA-BIO-17, CMA LUPA-BIO-BAT-1, CMA LUPA-BIO-COMP-2, CMA LUPA-BIO-DUNE-5, and CMA LUPA-TRANS-BIO-1.

The Bat Management and Protection Plan will be developed as a part of the BBCS (MM WIL-CEQA-1). The Bat Management and Protection Plan shall be submitted to the BLM, CPUC, and CDFW for approval prior to any ground disturbing activities. The Bat Management and Protection Plan will include direction for roosting bats and shall include, at a minimum, the following:

- If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the bats shall be safely evicted,

under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist. Roosts that need to be removed shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

- If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (i.e., not removed) by the Project. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of the CDFW, BLM, and CPUC that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required, and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roosts sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above.

- If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat's requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.

- If special-status bat species occur at these roosting/nursery sites, then construction activities shall avoid these sites and a surrounding buffer distance of 500 feet. If construction activities cannot avoid these sites, construction at these sites shall be delayed until the breeding cycles for the special-status bats are completed. The Applicant shall consult with a bat specialist in order to determine when the breeding cycle for the special-status bats is completed. The Applicant shall consult with CDFW regarding eviction of non-breeding special-status bats.

- If roosting bats occur within bridges on existing dirt or paved roadways within 500 feet of construction activities, construction may be allowed, provided that the construction

activities occur only from 9:00 a.m. to 4:00 p.m. to avoid disturbance to nocturnal feedings.

MM WIL-CEQA4 Implementation

Responsible Party: The Bat Management and Protection Plan shall be developed and implemented by the Applicant and approved by the BLM, CPUC, and CDFW.

Timing: The Bat Management and Protection Plan shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the Bat Management and Protection Plan. This report shall be made available to the BLM, CPUC, and CDFW.

Standards for Success: Any significant impacts from construction activities to bat species shall be avoided or minimized to result in less than significant levels.

MM WIL-CEQA-5: Conduct Pre-Construction Surveys for Maternity Colonies or Hibernaculum for Roosting Bats.

The following BMPs and CMA shall be incorporated within this MM WIL-CEQA-5: APM BIO-2, BMP BIO-02, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-16, and CMA LUPA-BIO-DUNE-5.

The Applicant shall conduct surveys for roosting bats within 500 feet of Project activities, within 14 days prior to any grading of rocky outcrops or removal of trees with loose bark or other cavities. Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). The resume of the biologist shall be provided to the CPUC and BLM for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the Project. Surveys shall include a minimum of one day and one evening.

The Bat Management and Protection Plan (MM WIL-CEQA-4) shall be implemented throughout construction for any active bat roosts within the area. The Applicant shall submit documentation providing pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC, BLM, and CDFW for review and approval.

MM WIL-CEQA-5 Implementation

Responsible Party: The surveys for maternity colonies or hibernaculum for roosting bats shall be completed by a qualified biologist (i.e. a biologist holding CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats).

Timing: The surveys shall be completed within 14 days prior to any grading activities or removal of trees within 500 feet of the Project.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report or technical memorandum that provides the pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC, BLM, and CDFW for review and approval.

Standards for Success: Surveys for bat roosting and nursery sites are completed within the Project area and required buffer distances.

MM WIL-CEQA-6: Conduct Pre-construction Surveys for Nesting and Breeding.

The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-6: APM BIO-2, BMP BIO-02, APM BIO-20, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-16, CMA LUPA-BIO-IFS-26, and CMA LUPA-BIO-RIPWET-3. The Applicant shall retain a qualified avian biologist(s) (approved by the CPUC, BLM, and CDFW) to conduct pre-construction nesting bird surveys, within the recognized breeding season (generally 15 Feb – 15 Sep [1 Jan – 15 Aug for raptors]), for all areas within 500 feet of construction activities; construction activities include mobilization, staging, grading, and/or construction. These survey dates may only be modified with the approval of CDFW and USFWS (where applicable). Measures intended to exclude nesting birds shall only be implemented with the prior approval by the CDFW and/or USFWS. If breeding birds with active nests are found prior to or during construction, the qualified avian biologist shall establish a minimum 300-foot buffer (500 foot for raptors) around the nest and no activities shall be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. Buffer reductions for listed or special-status species may require coordination with the USFWS and/or CDFW. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, implementing nest buffers, and documenting the results of ongoing monitoring by providing a copy of the monitoring reports for impact areas to the appropriate resource agencies (i.e., USFWS and CDFW). If trees with nests are to be removed as part of Project construction activities, they shall be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided, all trees shall be inspected for active nests by the avian biologist. If nests are found within these trees, and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors shall occur until the young have fledged the nest.

MM WIL-CEQA-6 Implementation

Responsible Party: The surveys for nesting and breeding avian species shall be completed by a qualified avian biologist (approved by the CPUC, BLM, and CDFW).

Timing: The surveys shall be completed within the recognized breeding season prior to construction activities for all areas within 500 feet of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report or technical memorandum that provides the pre-

construction survey results and any avoidance of nesting recommended to the CPUC, CLM, and CDFW for review and approval.

Standards for Success: Nesting and breeding bird surveys are conducted within the Project site and required buffer distances prior to ground disturbing activities.

MM WIL-CEQA-7: Conduct Focused Pre-Construction Burrowing Owl Surveys.

To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM BIO-CEQA-7: APM BIO-2, BMP BIO-02, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-12, and CMA LUPA-BIO-16.Prior to initial ground disturbance (no more than 14 days prior) the Project Applicant shall conduct focused surveys for burrowing owls within suitable burrowing owl habitat. Surveys will be completed by a qualified biologist(s) with proven burrowing owl experience. Focused burrowing owl surveys shall be conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 Staff Report; CDFG 2012), with the exception of the survey buffers, which follows the California Burrowing Owl Consortium (1993). Surveys shall be conducted by walking 20-meter transects. Pre-construction surveys shall be conducted not only within construction area, but also within a reasonable buffer around the area, generally 150 meters (492 feet). If burrowing owls, including any active burrowing owl burrows, are not found during the pre-construction survey, no further action is required. If burrowing owls or active burrows are found, then the appropriate avoidance setbacks depending on the and level of disturbance shall be implemented as defined in the Burrowing Owl Avoidance, Minimization, and Mitigation Plan (MM WIL-CEQA-3).

The only exception to the above requirements would be if any given construction area has become inactive for more than 14 days. Because burrowing owls can recolonize a site after a few days, if time lapses between Project activities for 14 days or more, this shall trigger subsequent pre-construction avoidance surveys, including, but not limited to an additional survey within 24 hours of ground-disturbing activities.

MM WIL-CEQA-7 Implementation

Responsible Party: The focused pre-construction surveys for burrowing owls shall be conducted by a qualified biologist (approved by the CPUC, BLM, and CDFW).

Timing: The focused pre-construction burrowing owl surveys shall be completed no more than 14 days prior to the start of construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report of technical memorandum that provides the pre-construction survey results and any avoidance or relocation recommendations to the CPUC, BLM, and CDFW for review and approval.

Standards for Success: Burrowing owl surveys are completed within all suitable habitats in the Project area and required buffer distances.

MM WIL-CEQA-8: Conduct Pre-Construction Protocol Surveys for Arizona Bell's Vireo, Southwestern Willow Flycatcher, and Willow Flycatcher; Avoid Occupied Habitat; Compensate Impacts.

The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-8: APM BIO-20; APM BIO-21; BMP BIO-21; BMP BIO-29; BMP BIO-35; BMP BIO-36; BMP BIO-40; BMP BIO-48; BMP BIO-55; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-12; CMA LUPA-BIO-16; CMA LUPA-BIO-17; CMA LUPA-BIO-COMP-2; CMA LUPA-TRANS-BIO-1; and CMA LUPA-TRANS-BIO-2.

If Project related activities are scheduled to occur during the breeding season (generally 15 Feb – 15 Sep) the Applicant shall have a qualified avian biologist, approved by the CPUC, BLM, and CDFW, conduct protocol surveys prior to the start of construction for Arizona Bell's vireo , southwestern willow flycatcher, and willow flycatcher in suitable habitat within the Project area and 500 feet of disturbance areas. The surveys shall follow all current agency protocols (i.e., CDFW, USFWS). Prior to construction, documentation shall be submitted providing the results of the pre-construction focused surveys for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher to the CPUC for review and approval in consultation with USFWS and CDFW. Protocol or focused nest location surveys, as appropriate, shall be conducted within one year prior to the start of construction and shall continue annually until completion of construction and restoration activities. If an active breeding territory or nest is confirmed, the CPUC, USFWS, and CDFW shall be notified immediately. All active nests shall be monitored on a weekly basis until the nestlings fledge or the nest becomes inactive. The Applicant shall provide monitoring reports to the CPUC for review on a weekly basis. In coordination with the USFWS and CDFW, a minimum 300-foot disturbance-free ground buffer shall be established around the active nest and demarcated by fencing or flagging. No construction or vehicle traffic shall occur within nest buffers.

The qualified biologist shall have the authority to halt construction activities and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge.

Impacts and mitigation for Federal- and State-listed species shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the FESA with the USFWS, and either the Section 2081 or Section 2080.1 process under the CESA with the CDFW. Additionally, direct impacts to Federally listed species' critical habitat that cannot be avoided shall also be addressed through either the FESA Section 7 or Section 10(a)(1)(B) process. Formal FESA consultation for Federally listed species that have at least a moderate potential to occur and may be impacted by the Project include the Mojave Desert tortoise, razorback sucker, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma Ridgway's rail. CESA consultation for State-listed species that have at least a moderate potential to occur and may be impacted by the Project include California black rail, greater sandhill crane, Mojave Desert tortoise, razorback sucker, Swainson's hawk, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma Ridgway's rail. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap

with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

MM BIO-CEQA-8 Implementation

Responsible Party: The focused protocol surveys for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher shall be conducted by a qualified biologist(s).

Timing: The focused surveys shall be conducted during the required protocol windows should construction activities occur between 15 Feb and 15 Sep.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report of technical memorandum that provides the survey results and any avoidance or relocation recommendations to the CPUC, BLM, and CDFW for review and approval. Responsible parties for the consultation include USFWS and CDFW.

Standards for Success: Protocol Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher surveys are completed within all suitable habitats in the Project area and required buffer distances.

MM WIL-CEQA-9: Compensation for Impacts to Mojave Fringe-Toed Lizard.

To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM WIL-CEQA-9: APM BIO-3; BMP BIO-03; APM BIO-9; APM BIO-10; APM BIO-17; BMP BIO-25; BMP BIO-35; BMP BIO-36; BMP BIO-49; BMP BIO-53; BMP BIO-54; BMP BIO-55; CMA DFA-BIO-IFS-1; CMA DFA-VP; CMA LUPA-BIO-11L-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-15 CMA LUPA-BIO-3 CMA LUPA-BIO-4; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-2; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-4; and CMA LUPA-BIO-DUNE-5.

Specifically, the following shall be implemented by the Applicant to protect and compensate for impacts to Mojave fringe-toed lizard.

- **Field Surveys:** Prior to construction, field surveys shall be conducted by an Applicant designated qualified biologist, approved by the CPUC, BLM, and CDFW, to assess for Mojave fringe-toed lizard habitat (e.g., dune systems, Aeolian sand, scattered vegetation).

- **Avoidance and Minimization:** If Mojave fringe-toed lizard habitat is present within the Project site and/or adjacent areas, at a minimum, the following avoidance and minimization measures shall be employed to reduce potential species impacts:

  - An Applicant designated qualified biologist shall conduct pre-construction clearance surveys for Mojave fringe-toed lizard in the Project area;

  - Mojave fringe-toed lizard suitable habitat, if present, shall be mapped using the BLM NOC habitat mapping standards;

- If potential habitat is identified in or adjacent to the Project site, then a biological monitor shall be on-site during all Project activities, as necessary;
- ESA signage and exclusion fencing shall be installed at the appropriate buffer distance (i.e., resource setback), if suitable habitat is within or encroaches into the Project site;
- Project-specific, construction-related BMPs shall be implemented to reduce the amount of Aeolian sand transport within work areas;
- New roads/routes shall avoid Mojave fringe-toed lizard suitable habitat within identified linkages, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern; and
- Project-specific CMAs shall be implemented to ensure the control of invasive and nuisance animal species that could indirectly impact Mojave fringe-toed lizard species.

- **Compensation for Permanent Impacts:** Permanent habitat loss and direct impacts to Mojave fringe-toed lizards shall be subject to compensatory mitigation at a minimum ratio of 3:1 and overlap with the mitigation for impacts to special-status plant species, and particularly Harwood's eriastrum, as part of MM VEG-CEQA-4. Compensation for permanent impacts to suitable habitat for the Mojave fringe-toed lizard shall include (a) preservation through acquisition of offsite lands with an attached conservation easement or purchase of credits from an approved bank, or (b) onsite or offsite enhancement of lands that support known populations of Mojave fringe-toed lizard. Off-site compensation lands and/or established mitigation bank program shall be identified, if available, in coordination with the appropriate Federal and State regulatory agencies. The Applicant shall provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a "qualified easement holder"; the CDFW is a qualified easement holder. To qualify as a "qualified easement holder" a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements, have adopted the Land Trust Alliance's Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. The Applicant shall also provide the "qualified easement holder" with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities.

- At a minimum, the compensation lands selected for acquisition shall meet the following criteria:
  - Be deposits of Aeolian or fine windblown sands typically associated with dunes, washes, hillsides, and margins of dry lakes, with potential to contribute to Mojave

fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;

- To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard;
- To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed;
- Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
- Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;
- Not be subject to property constraints (i.e. mineral leases, cultural resources); and
- Be on land for which long-term management is feasible (BLM 2019).

- **Documentation:** The Applicant shall prepare a Fringe-Toed Lizard Linear ROW Protection Plan, as detailed by BMP BIO-49 and referenced in MM BIO-CEQA-1. This plan shall be in accordance with Federal and State regulatory agencies policies, guidance, and protocols. In addition, this plan shall be approved by the appropriate regulatory agencies prior to Project commencement, and implemented, as necessary, during all Project phases. The Fringe-Toed Lizard Linear ROW Protection Plan, shall at a minimum, discuss potential for Mojave fringe-toed lizard to occur in the Project area (e.g., known occurrences, locations for potential suitable habitat, etc.); provide an overview related to the potential for indirect and/or direct permanent impacts; outline methods and measures for avoidance, minimization, translocation, compensation, and mitigation.

MM WIL-CEQA-9 Implementation

Responsible Party: Supervision, guidance, and verification of mitigation as outlined in this measure shall be achieved the Applicant.

Timing: Field surveys shall be conducted prior to construction. All potential indirect and direct impacts shall be evaluated, and avoidance, minimization, compensation, and mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project commencement.

Mitigation Monitoring and Reporting Program: The Applicant shall prepare a Fringe-Toed Lizard Linear ROW Protection Plan.

Standards for Success: Compensation implemented for Mojave fringe-toed lizard that results in a no net loss of suitable habitat.

MM WIL-CEQA-10: Compensation for Impacts to Mojave Desert Tortoise.

To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM WIL-CEQA-10: APM BIO-2; BMP BIO-02; APM BIO-3; BMP BIO-03; APM BIO-4; APM BIO-17; APM BIO-23; BMP BIO-23; BMP BIO-35; BMP BIO-36; BMP BIO-44; BMP BIO-55; CMA DFA-BIO-IFS-1; CMA DFA-VPL-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-; CMA LUPA-BIO-IFS-3BIO-7; CMA LUPA-BIO-12; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-IFS-5; CMA LUPA-BIO-IFS-6; CMA LUPA-BIO-IFS-7; CMA LUPA-BIO-IFS-8; and CMA LUPA-BIO-IFS-9.

Specifically, the following shall be implemented by the Applicant to protect and compensate for impacts to Mojave Desert tortoise:

- **Compensation for Impacts:** To fully mitigate for habitat loss and potential take of Mojave Desert tortoise, the Applicant shall provide compensatory mitigation at a minimum ratio of 3:1. For the purposes of this measure, the Project site (i.e., footprint) means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long- term habitat for the Mojave Desert tortoise. To satisfy this measure, the Applicant shall acquire, protect and transfer two acres of Mojave Desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below (BLM 2018). The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities.

- The Applicant has another option for satisfying some or all of the requirements in this measure, in lieu of acquiring lands itself. The Applicant may satisfy the requirements of this measure by depositing funds into an account established with the NFWF.

- Applicant shall acquire the land, in fee or in easement, within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

- If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

    - Be within the appropriate Habitat Unit or, if sufficient land is unavailable, in other locations within approved by the appropriate Federal and State regulatory agencies;

- Provide habitat for Mojave Desert tortoise with capacity to regenerate naturally when disturbances are removed;
- Be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Be connected to lands with Mojave Desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover;
- Not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
- Have water and mineral rights included as part of the acquisition, unless consultation with the appropriate Federal and State agencies occurs and there is an agreement in writing to the acceptability of land.

- **Documentation:** The Applicant shall prepare a Mojave Desert Tortoise Protection and Compensation Plan. This plan shall be in accordance with Federal and State regulatory agencies policies, guidance, and protocols. In addition, this plan shall be approved by the appropriate regulatory agencies prior to Project commencement, and implemented, as necessary, during all Project phases. The Plan, shall at a minimum, discuss the potential for Mojave Desert tortoise to occur in the Project area (e.g., known occurrences, locations for potential suitable habitat, locations of burrows, fencing locations, etc.); provide an overview related to the potential for indirect and/or direct permanent impacts; outline methods and measures for avoidance, minimization, translocation, compensation, mitigation, and requirements for maintenance and monitoring.

- In addition, the Applicant shall also prepare a Mojave Desert Tortoise Quarterly Compliance Report. The first Mojave Desert Tortoise Quarterly Compliance Report shall be complete prior to Project commencement and include a narrative describing species-specific pre-construction compliance measures completed. After the initial Mojave Desert Tortoise Quarterly Compliance Report is submitted prior to construction, subsequent reports shall be prepared and submitted quarterly until the completion of Project activities. If during construction, Mojave Desert tortoise are encountered, and/or relocated, then the following details shall be included in the Mojave Desert Tortoise Quarterly Compliance Report, as necessary.

- The locations (i.e., maps) and dates of observation;
- The location moved from and location moved to (i.e., exact coordinates);
- Ambient temperature when handled and released;
- Digital photograph(s) of each handled Mojave Desert tortoise;
- General condition and health, including injuries, state of healing and whether Mojave Desert tortoise voided their bladders; and
- Gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes).

MM WIL-CEQA-10 Implementation

Responsible Party: Supervision, guidance, and verification of mitigation as outlined in this measure shall be achieved the Applicant.

Timing: Prior to construction, field surveys shall be conducted by the Applicant (refer to MM WIL-CEQA-11 below) designated qualified biologist to assess for Mojave Desert tortoise habitat. Additionally, the Applicant designated qualified biologist shall conduct pre-construction clearance surveys for Mojave Desert tortoise in the Project area during the period when they are most active (i.e., March through May, or September through mid-November).

Mitigation Monitoring and Reporting Program: The Applicant shall prepare a Mojave Desert Tortoise Protection and Compensation Plan. In addition, the Applicant shall also prepare a Mojave Desert Tortoise Quarterly Compliance Report.

Standards for Success: Compensation implemented for desert tortoise that results in a no net loss of suitable habitat.

MM WIL-CEQA-11: Conduct Pre-construction Surveys for Listed and Special-Status Terrestrial Herpetofauna and Compensation for Impacts.

The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-11: APM BIO-2; BMP BIO-02; APM BIO-3; BMP BIO-03; APM BIO-4; APM BIO-9; APM BIO-10; APM BIO-17; APM BIO-23; BMP BIO-23; BMP BIO-25; BMP BIO-35; BMP BIO-36; BMP BIO-44; BMP BIO-49; BMP BIO-53; BMP BIO-54; BMP BIO-55; CMA DFA-BIO-IFS-1; CMA DFA-VP; CMA LUPA-BIO-11L-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3 CMA LUPA-BIO-4; CMA LUPA-BIO-IFS-7; CMA LUPA-BIO-12; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-15; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-2; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-4; and CMA LUPA-BIO-DUNE-5; CMA LUPA-BIO-IFS-3; CMA LUPA-BIO-IFS-5; CMA LUPA-BIO-IFS-6; CMA LUPA-BIO-IFS-7; CMA LUPA-BIO-IFS-8; and CMA LUPA-BIO-IFS-9.

Conduct Pre-Construction Surveys for Listed and Special Status Terrestrial Herpetofauna and Compensate Impacts Prior to ground disturbance or vegetation clearing within the Project site, the Applicant shall retain an approved/qualified biologist to conduct surveys for special-status

terrestrial herpetofauna (i.e., lizards, snakes, tortoise, etc.) where suitable habitat is present and directly impacted by construction vehicle access, or maintenance. Focused surveys shall consist of a minimum of three daytime surveys and one nighttime survey within one week of vegetation clearing. The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports special-status terrestrial herpetofauna. Clearance surveys for special-status terrestrial herpetofauna shall be conducted by the qualified biologist prior to the initiation of construction each day in suitable habitat. Special-status terrestrial herpetofauna found within the area of disturbance or potentially affected by the Project shall be relocated to the nearest suitable habitat that shall not be affected by the Project.

Desert Tortoise Specific Surveys

- **Field Surveys:** Prior to construction, field surveys shall be conducted by the Applicant designated qualified biologist to assess for Mojave Desert tortoise habitat (e.g., desert scrub vegetation communities dominated, cover sites- soil burrows, pallets, caliche caves, etc.).

- Additionally, the Applicant designated qualified biologist, approved by the CPUC, BLM, and CDFW, shall conduct pre-construction clearance surveys for Mojave Desert tortoise in the Project area during the period when they are most active (i.e., March through May, or September through mid-November). During pre-construction clearance survey, the qualified biologist shall inspect construction pipes, culverts or similar structures with (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within Mojave Desert tortoise habitat, before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection.

- Pre-construction habitat surveys and clearance surveys for Mojave Desert tortoise shall be conducted using techniques outlined in the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009).

- **Avoidance and Minimization:** If Mojave Desert tortoise habitat is present within the Project site and/or adjacent areas, at a minimum, the following avoidance and minimization measures shall be employed to reduce potential species impacts:

    - Mojave Desert tortoise habitat and burrows, if present, shall be mapped using the BLM NOC habitat mapping standards;

    - If potential habitat is identified in or adjacent to the Project site, then a qualified biological monitor shall be on-site during all Project activities, as necessary. The qualified biological monitor shall directly monitor site clearing and shall be onsite during grading activities to find and move Mojave Desert tortoises missed during the initial pre-construction tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Mojave Desert Tortoise Protection and Compensation Plan;

- Environmentally sensitive area signage and exclusion fencing shall be installed at the appropriate buffer distance (i.e., resource setback), if suitable habitat is within or encroaches into the Project site (see further details under “fencing” below);

- During Project activities, including on specific linear features (e.g., fencing, transmission lines, and access roads, etc.) and during operation and maintenance (O&M), all live Mojave Desert tortoises and active burrows shall be avoided to the extent possible. The Applicant shall ensure that the qualified biologist and biological monitor monitors any Project activities in unfenced areas for presence of Mojave Desert tortoises. If an active burrow cannot be avoided by construction activities, the burrow shall be excavated using protocols in *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). If a tortoise wanders into an unfenced, active Project work area, does not leave the area on its own accord (i.e., within 15 minutes), and cannot be avoided by Project activities, the Applicant shall ensure that that the qualified biologist captures the Mojave Desert tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced Project work areas, and monitor the individual via telemetry, in accordance with the aforementioned Protocol. The qualified biologist and biological monitor shall have a copy of all measures, Federal and State permits, when monitoring Project activities. The qualified biologist and biologist monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave Desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm’s way by the qualified biologist. A Mojave Desert Tortoise Quarterly Compliance Report will be submitted quarterly to the appropriate Federal and State regulatory agencies (BLM 2018); and

- Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted.

- **Fencing:** The Applicant shall ensure that temporary and/or permanent tortoise exclusionary fencing is installed around active portions of the Project area following the pre-construction tortoise survey. The exclusionary fencing, whether temporary or permanent in nature, and shall be installed according to specifications in the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). Specifications requires fencing to be buried 12 inches below the ground surface and extend to 22 to 24 inches above the ground surface. If a phased approach is implemented during the construction phase, the exclusionary fencing may be installed in phases, with pre-construction surveys conducted prior-to and clearance surveys conducted immediately after installation of the exclusionary fence. The Applicant shall also ensure that tortoise exclusionary fencing is maintained during the decommissioning phase to keep tortoises from accessing active work areas. Throughout the construction and decommissioning phases, the tortoise exclusionary fence shall be checked regularly to ensure its integrity (BLM 2018).

- Security Gates- For security fencing, the Applicant shall ensure that the Project's perimeter security fence includes exclusionary fencing that prevents Mojave Desert tortoises, and other burrowing animals, from accessing the Project site. The exclusionary fencing shall be installed at the base of the security in accordance with the protocols listed above, and cattle guards shall be installed at entrances to the Project. Specifically, security gates shall be designed with minimal ground clearance to deter ingress by tortoises. Tortoise guards shall be installed at gate locations. (BLM 2018)

- Fence Flagging- All fencing installation corridors shall be flagged to assist the qualified biologist in studying the fence route and surveying within 24 hours prior to the initiation of fence construction. Prior to the surveys the Applicant shall provide all appropriate Federal and State regulatory agencies map figures clearly depicting the limits of construction disturbance for the proposed fence installation (BLM 2018).

- Fence Installation- The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the qualified biologist and monitored to ensure the safety of any tortoise present (BLM 2018).

- Fence Inspections- Following installation of the Mojave Desert tortoise exclusion fencing, the fencing shall be regularly inspected during construction, operations, and decommissioning. If Mojave Desert tortoise were moved out of harm's way during fence construction, fencing shall be inspected daily for the first 7 days to ensure a recently moved Mojave Desert tortoise has not been trapped within the fence. Thereafter, fencing shall be inspected quarterly and during and within 24 hours following major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep Mojave Desert tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of site fencing shall occur for the life of the Project.

- Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted Mojave Desert tortoise entry while damaged, the qualified biologist shall inspect the area for Mojave Desert tortoise (BLM 2018).

- Tortoise Encounters- If a tortoise is encountered along the inside or outside of the fence, the qualified biologist shall capture and relocate in accordance with the protocols listed above (i.e., USFWS 2009, Chapter 7), perform a health assessment, attach a radio transmitter to the tortoise in accordance, and release the Mojave Desert tortoise in a previously identified Project-adjacent relocation areas supporting Mojave Desert tortoise habitat in accordance with USFWS and all other appropriate Federal and State regulatory agencies (BLM 2018).

- Fence Removal- Temporary exclusionary fencing shall be removed following completion of the construction and decommissioning phases.

With the exception of desert tortoise, compensation for temporary impacts to special-status terrestrial herpetofauna (including Couch's spadefoot toad and Mojave fringe-toed lizard) potential/modeled habitat shall include on-site habitat restoration at a minimum 1.5:1 ratio. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Compensation for permanent impacts to desert tortoise and special-status wildlife on-site surveyed habitat shall include a) off-site creation, enhancement, and/or preservation, and/or b) participation in an established mitigation bank program at a minimum 3:1 ratio. Compensation for temporary and permanent impacts for all other special-status wildlife habitat shall include a combination of a) on-site habitat creation or enhancement with similar species compositions to those present prior to construction, b) off-site creation, enhancement, and/or preservation, and/or c) participation in an established mitigation bank program at a 2:1 minimum ratio. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities.

Compensation for impacts to desert tortoise are detailed above in MM WIL-CEQA-10. Impacts and mitigation for the Mojave Desert tortoise shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the FESA with the USFWS, and either the Section 2081 or Section 2080.1 process under the CESA with the CDFW. Mitigation for impacts to all listed and special-status species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

MM WIL-CEQA-11 Implementation
Responsible Party: Supervision, guidance, and verification of mitigation as outlined in this measure shall be achieved the Applicant.

Timing: General surveys shall be conducted year-round with desert tortoise surveys focused on the periods of expected activity. Prior to construction, field surveys shall be conducted by an Applicant designated qualified biologist to assess for Mojave Desert tortoise habitat. Additionally, the Applicant designated qualified biologist shall conduct pre-construction clearance surveys for Mojave Desert tortoise in the Project area during the period when they are most active (i.e., March through May, or September through mid-November).

Mitigation Monitoring and Reporting Program: The Applicant shall prepare a technical report detailing the results of all terrestrial herpetofauna and desert tortoise surveys.

Standards for Success: Compensation implemented for all listed/special-status terrestrial herpetofauna, including desert tortoise, that results in a no net loss of suitable habitat.

2.5 CULTURAL RESOURCES

This section describes the impacts to cultural resources associated with the construction, operation, and maintenance of the proposed transmission line, substations, and ancillary facilities

in terms of CEQA significance thresholds disclosed below in Section 2.5.4. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS. Tribal concerns are addressed in Section 2.6 (Tribal Cultural Resources) of this appendix.

As disclosed in Section 4.6.3.1 of the TES (BLM 2019), the analysis area for the Project consists of areas where direct effects to cultural resources may occur. Direct effects are defined by areas where ground disturbance would occur for Project construction, such as tower locations, access roads, lay down areas, and spur roads, among others. In addition to direct impacts, indirect impacts to cultural resources as a result of the Project may occur. Indirect impacts to cultural resources include visual, atmospheric, and auditory effects.

As concluded in Section 4.6.7 of the TES, potential adverse effects to historic properties would be mitigated in accordance with the provisions of the Programmatic Agreement (PA). Through the PA under the National Historic Preservation Act (NHPA), Section 106 enforceable obligations are imposed on a project to avoid, minimize, and mitigate adverse effects on historic properties such that the execution and implementation of the PA will reduce impacts to cultural resources to less than significant levels for purposes of CEQA. Per CEQA, potential impacts to historical resources and to archaeological resources would also be mitigated in accordance with the provisions of the PA. The CEQA terms “historical resources” and “unique archaeological resources” will be used throughout this CEQA appendix.

Avoidance of cultural resources by final design and construction would be the preferred form of mitigation. See Chapter 3.6 of the TES (BLM 2019) for further discussion.

2.5.1 Thresholds and Methodology

Existing conditions described in Section 3.6 of the TES (BLM 2019) have been evaluated with regard to their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The potential impacts associated with the Project are evaluated on a qualitative and quantitative basis through a comparison of the anticipated Project effects on cultural resources. Resources can experience impacts, these impacts can be considered significant under CEQA, or constitute an effect under Section 106. Under Section 15064.5 of CEQA, an important archaeological or historical resource is an object, artifact, structure, site, or district that is listed on, or eligible for listing on, the California Register of Historical Resources (CRHR). Eligibility and Significance can be assumed for properties that are already listed on the National Register of Historic Places (NRHP), if evidence supporting the decision is verified and applied. The evaluation of Project impacts is based on the significance criteria established by Appendix G of the CEQA Guidelines (refer to section 2.5.4 below for additional information), and additional criteria including:

- Damage to or loss of a site of a cultural resource that is listed, or eligible for listing, on the NRHP, or CRHR;
- An activity would directly or indirectly alter the characteristics of the cultural resource that qualify it for inclusion in the NRHP, or CRHR (design, setting, materials, workmanship, or feeling);

- The Project results in visual changes to a viewshed of recognized cultural significance under the NRHP, or CRHR, or identified as a Traditional Cultural Property (TCP)/Tribal Cultural Resource (TCR);
- Loss or degradation would also include cases in which access to the cultural resource is restricted for future use (i.e. a sacred site);
- Exposure of cultural resources to vandalism or unauthorized collecting;
- A substantial increase in the potential for erosion or other natural processes that could affect cultural resources;
- Neglect of a cultural resource that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe;
- Disturbance of any human remains, including those interred outside of formal cemeteries; and,
- An activity that would affect a cultural resource for which setting is an important aspect of its NRHP, or CRHR eligibility (causing a high degree of visual impacts, as determined through the visual resource analysis).

2.5.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impacts to Cultural Resources under CEQA.

- **APM CULT-01: Cultural Resources Inventory.** A cultural inventory would be conducted that would document cultural resources within the area of potential effects for the Project. Based on results of this inventory, a Historic Properties Treatment Plan (HPTP) would be developed to specifically address direct and indirect impacts that may result from Project construction.
- **APM CULT-02: Monitoring and Discovery Plan.** DCRT's contractor would prepare a Monitoring and Discovery Plan (MDP) that would describe procedures to be followed in the event of the discovery of cultural resources or human remains during implementation of the Project. The Draft MDP would be reviewed by BLM and consulting state and Federal agencies, the California and Arizona State Historic Preservation Offices (SHPOs), and local tribes. Upon approval of the MDP, DCRT would follow the procedures set forth in that plan during implementation of the Project.

- **BMP CULT-03: Cultural Resources Avoidance and Stipulations.** DCRT would follow the avoidance procedures and other stipulations outlined in the PA and in the appropriate State HPTP for each historic property identified in the HPTP.

- **BMP CULT-04: Worker Cultural Resources Awareness Program.** Before starting any work, including mowing, staging, sediment and erosion control installation, tree removal, construction, and restoration, all employees and contractors performing activities and construction would receive training on the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act and the consequences of noncompliance with these acts. Training would also include cultural sensitivity to Native American concerns, since tribal monitors would be present during construction.

- **BMP CULT-05: Compensatory Mitigation Fee.** DCRT would pay a compensatory mitigation fee for cumulative and indirect effects to historic properties as a result of construction. The fee structure of the compensatory mitigation fee would be calculated in a manner that is commensurate to the size and regional impacts of the Project and would include a management fee. This fee structure would be determined by BLM and contained in the Project-specific PA.

- **BMP CULT-06: Sensitivity Model.** BLM would develop a sensitivity model for cultural resources using the DRECP geodatabase for the purpose of selecting Project footprints to minimize impacts to recorded historic properties and areas that are culturally sensitive to Tribes.

- **BMP CULT-07: Sample Survey.** BLM will ensure that a statistically significant cultural resources sample survey is conducted for consideration in Project planning in locations within the CDCA boundary.

- **BMP CULT-08: Project Planning.** DCRT would consider the results of the BLM's cultural resources sensitivity model in Project planning and provide justification if it is not considered to be feasible.

- **APM PALEO-01: Paleontological Resources Treatment Plan.** DCRT would prepare a Paleontological Resources Treatment Plan that would describe procedures to be followed in the event of the discovery of paleontological resources during implementation of the Project. Upon approval of the draft plan, DCRT would follow the procedures set forth in that Plan during implementation of the Project.

- **BMP PALEO-02: Paleontological Resources Monitor.** A qualified paleontologist would provide monitoring for paleontological resources during construction in areas of high or unknown fossil potential.

2.5.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project

and related to Cultural Resources and Tribal Interests are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-CUL-4: Cultural Resources and Tribal Interests**. Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes.

- **CMA LUPA-TRANS-CUL-1: Cultural Resources and Tribal Interests**. For transmission (and renewable energy) activities, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:

  - All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.

  - All appropriate costs associated with preliminary sensitivity analysis.

  - All appropriate costs associated with the Section 106 and CEQA processes including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.

  - All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.

- **CMA LUPA-TRANS-CUL-2.** Consistent and in compliance with the NHPA PA, signed February 5, 2016, or the most up to date signed version – for transmission (and renewable energy) activities, a compensatory mitigation fee will be required within the LUPA DA to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the NHPA PA for details regarding the mitigation fee.

- **CMA LUPA-TRANS-CUL-3.** For transmission (and renewable energy) activities, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.

- **CMA LUPA-TRANS-CUL-4.** For transmission (and renewable energy) activities, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.

- **CMA LUPA-TRANS-CUL-5.** For transmission (and renewable energy) activities, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.

- **CMA LUPA-TRANS-CUL-6.** For transmission (and renewable energy) activities, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.

- **CMA DFA-VPL-CUL-1.** For renewable energy activities and transmission, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:

  - All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.

  - All appropriate costs associated with preliminary sensitivity analysis.

  - All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.

  - All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.

- **CMA DFA-VPL-CUL-2.** Consistent and in compliance with the NHPA PA, signed February 5, 2016, or the most up to date signed version -for renewable energy activities and transmission, a compensatory mitigation fee will be required within the LUPA DA to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the PA for details regarding the mitigation fee.

- **CMA DFA-VPL-CUL-3.** For renewable energy activities and transmission, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.

- **CMA DFA-VPL-CUL-4.** For renewable energy activities and transmission, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.

- **CMA DFA-VPL-CUL-5.** For renewable energy activities and transmission, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.

- **CMA DFA-VPL-CUL-6.** For renewable energy activities and transmission, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.

- **CMA DFA-VPL-CUL-7.** For renewable energy activities and transmission, complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar PA.

2.5.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant cultural resource impacts if it would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d. Disturb any human remains, including those interred outside of formal cemeteries?

2.5.5 Cultural Resources Impact Analysis

Impact CUL 1 - Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

Less than Significant with Mitigation

Cultural resources are non-renewable resources and any disturbance, damage, or loss to a resource that is or may be eligible for the NRHP or CRHR would constitute an irreversible and irretrievable and significant impact to that resource, as outlined in Section 4.20.3 of the TES (BLM 2019). As detailed in Section 4.6 of the TES (BLM 2019), impacts on cultural resources would result if ground-disturbing activities cause damage, destruction, or alteration of historic properties or resources. Ground-disturbing activities include Project-related excavation, grading, trenching, vegetation clearing, operation of heavy equipment, and other surface and subsurface disturbance that could damage or destroy surficial or buried archaeological resources including prehistoric and historic resources or human burials. Though most impacts to historic properties would be expected to occur in association with construction, some Project-related activities could affect historic properties during operations and maintenance.

The selected route would be inventoried for cultural resources through archival review and pedestrian survey prior to any ground-disturbing activities, all cultural resources that may be directly or indirectly affected or impacted would be evaluated for eligibility to the CRHR as historical resources and to the NRHP as historic properties, and a HPTP and MDP developed to address potential direct and indirect effects or impacts to all historic properties/historical resources. This would be implemented through MM CUL-CEQA-1 and MM CUL-CEQA-2 which include implementation of cultural resources APMs, BMPs, and CMAs as well as s

cultural resources inventory required for the Project, respectively. The PA will implement actions identified as measures to resolve adverse effects. The Project would adhere to MM CUL-CEQA-1, which includes the implementation of BMP CULT-03 (which provides compliance with CMA LUPA-CUL-4) during Project activities that would require avoidance procedures and appropriate treatment of each historic property identified in the HPTP (APM CULT-01). These requirements would be further implemented through MM CUL-CEQA-3 which incorporates avoidance of cultural resources. Additionally, with the implementation of MM CUL-CEQA-1, which includes APM CULT-02 and BMP CULT-04, if prehistoric or historic-period materials are encountered during ground disturbing work at any of the Project work sites, all work in the immediate vicinity of the discovery would be halted until a qualified archaeologist can evaluate the significance of the find. If the find is determined to be significant, a qualified archaeologist and the lead agency would determine the appropriate avoidance measures or other suitable mitigation in consultation with the appropriate SHPO. Significant cultural materials would be curated according to current professional standards.

As discussed in Section 4.6.5 of the TES (BLM 2019), indirect effects to historic properties or significant historical resources could occur in areas where the construction of new roads into the Project area would provide improved access into previously inaccessible areas. Improved access could lead to site damage by off-highway vehicles (OHVs) and recreational use of these areas. Such damage could consist of vehicular damage to surface archaeological sites, and vandalism to sensitive areas where rock art is present. Measures to mitigate potential adverse effects to historic properties as a result of improved access would be included in the Project-specific PA (PA; Appendix 2D of the EIS).

Additionally, the following CMAs (implemented through MM CUL-CEQA-1) identified below would be applicable and would be addressed by the noted Project APMs and BMPs and would be required in order to reduce potential impacts related to cultural resources to a less than significant level:

CMA LUPA-CUL-4 is specific to the Project design to minimize impacts on cultural resources, including those places of elevated cultural or spiritual significance to federally recognized tribes. Compliance with CMA LUPA-CUL-4 would be satisfied with BMP-CULT-03, which states that the Proponent would follow avoidance and stipulations outlined in the PA (Appendix 2D of the EIS) and appropriate HPTPs, and APM-CULT-01 and APM-CULT-02, in which the Proponent commits to following those stipulations.

LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 are specific to the responsibility of the Project Proponent to pay for costs associated with the Project’s cultural resources compliance. Compliance with CMA LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 would be satisfied by APM-CULT-01 and APM-CULT-02, in which the Proponent commits to conducting a cultural resources inventory of the direct and indirect analysis area, preparing HPTPs, and conducting cultural resource monitoring during Project construction, operations, and maintenance (as appropriate) to meet stipulations outlined in the PA (Appendix 2D of the EIS).

LUPA-TRANS-CUL-2 and DFA-VPL-CUL-2 are specific to the Proponent’s payment of compensatory mitigation fees for cumulative and indirect effects to historic properties as a result of Project construction, operations, and maintenance. Compliance with CMA LUPA-TRANS-CULT-2 and DFA-VPL-CUL-2 would be satisfied by BMP-CULT-05, which outlines the fee

structure of the compensatory mitigation fee. The compensatory mitigation fee structure is also outlined in the stipulations contained within the PA (Appendix 2D of the EIS).

LUPA-TRANS-CUL-3 and DFA-VPL-CUL-3 are specific to the Proponent's payment of management fees as part of the compensatory mitigation fee contained in CMA LUPA-TRANS-CUL-2 and DFA-VPL-CUL-2, respectively. Compliance with LUPA-TRANS-CUL-3 and DFA-VPL-CUL-3 would be satisfied by BMP-CULT-05, which outlines the fee structure of the management fee as part of the compensatory mitigation fee. The management fee and compensatory mitigation fee structure is also outlined in the stipulations contained within the PA (Appendix 2D of the EIS).

LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 are specific to the development of a cultural resources sensitivity model based on existing cultural resources data in the CDCA for consideration in Project planning and alternative selection. Compliance with CMA LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 would be satisfied with BMP-CUL-06. The BLM has prepared a sensitivity model (Kline 2017).

LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 are specific to the provision of a statistically significant cultural resources sample survey to be used in Project planning. Compliance with CMA LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 would be satisfied by BMP-CULT-07, which requires a sensitivity analysis and cultural resources Class III survey of segments p-17 and p-18 to be conducted during the NEPA and CEQA analyses to meet the conditions of CMA LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5. The Class III survey of the segments in the CDCA that require inventory, identified as Segments p-17 and p-18 has been conducted.

The Class I cultural resources data available for the California portion of the Project has been compiled into a Sensitivity Analysis (Kline 2018). The results of the Sensitivity Analysis are discussed in association to relevant segments, alternatives, and sub-alternatives located in the Colorado River and California Zone (Section 3.6.3.2 and Sections 4.6.1 and 4.6.5.5 of the TES [BLM 2019]). The Sensitivity Analysis is a specific Project requirement for compliance with LUPA-TRANS-CUL-5. The results of the Sensitivity Analysis are discussed within the contexts of the relevant Project segments located in the Colorado River and California Zone.

LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 is specific to the Proponent's justification to move areas identified as sensitive to cultural resources forward through NEPA and CEQA analyses. Compliance with CMA LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 would be satisfied by BMP-CULT-08, which requires such justification from the Project proponent.

With the implementation MM CUL-CEQA-1, MM CULT-CEQA-2, and MM CUL-CEQA-3 the Project would result in a less than significant impact to historical resources as defined in Section 15064.5.

Impact CUL 2 - Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less than Significant with Mitigation

As discussed under Impact CUL 1 above, the selected route would be inventoried for cultural resources, including archaeological resources, prior to any ground-disturbing activities. All

archaeological resources would be required to be evaluated for eligibility to the NRHP and CRHR, and a HPTP developed to address potential direct and indirect affects/impacts to historic properties under Section 106 and historical resources under CEQA. This would be implemented through MM CUL-CEQA-2 which would require a cultural resource inventory, and development of a HPTP and MDP for the Project in order to ensure that impacts related to archaeological resources are reduced to a less than significant level.

The Project would also implement MM CUL-CEQA-3, which would require avoidance of any archaeological resources identified within the Project area as well as appropriate treatment measures for each archaeological resource identified in the HPTP. Through implementation of this MM, as well as MM CUL-CEQA-1, which requires implementation of BMP CULT-03/CMA LUPA-CUL-4, impacts related to archaeological resources would be less than significant.

Further, with the implementation of MM CUL-CEQA-1, which requires implementation of APM CULT-02 (provides compliance with CMA LUPA-TRANS-CUL-1), if prehistoric or historic-period materials are encountered during ground disturbing work at any of the Project work sites, all work in the immediate vicinity of the discovery would be halted until a qualified archaeologist can evaluate the significance of the find. If the find is determined to be significant, or qualify as a unique archaeological resource under CEQA, a qualified archaeologist and the lead agency would determine the appropriate avoidance measures or other suitable mitigation in consultation with the appropriate SHPO. Significant cultural materials would be curated according to current professional standards. Therefore, direct Project impacts to archaeological resources would be less than significant with mitigation incorporated.

As discussed in Section 4.6.2 of the TES (BLM 2019), indirect effects to archaeological resources under Section 106 and archaeological resources under CEQA could occur in areas where the construction of new roads into the Project Area would provide improved access into previously inaccessible areas. Improved access could lead to site damage by off-road vehicles and recreational use of these areas. Such damage could consist of vehicular damage to surface archaeological sites, and vandalism to sensitive areas where rock art is present. Measures to mitigate potential adverse effects to historic properties under Section 106 and historical resources under CEQA as a result of improved access would be included in the Project-specific PA (Appendix 2D of the EIS).

Because cultural resources are non-renewable resources, any disturbance, damage, or loss to a resource that is or may be eligible for the NRHP or CRHR would constitute an irreversible and irretrievable impact to that resource, as outlined in Section 4.20.3 of the TES. However, avoidance and mitigation would reduce impacts to less than significant.

The same CMAs, implemented through MM CUL-CEQA-1, would be applicable and would be addressed by the noted Project APMs and BMPs as described under Impact CUL-1.

With the implementation MM CUL-CEQA-1, MM CUL-CEQA-2, and MM CUL-CEQA-3 the Project would result in a less than significant impact to archaeological resources as defined in Section 15064.5.

Impact CUL 3 - Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation

As indicated in Section 4.4.7.1 of the TES, a portion of the Project would cross an area (Segment p-16) with high potential to encounter fossils. Further, the majority of the route would cross land with unknown fossil potential. Direct loss of scientifically important fossils and indirect loss of access to scientifically important fossils could occur if fossils are present. Construction within the ROW would include clearing and grading and the excavation for the structure foundations, which could result in a significant impact prior to mitigation. However, MM CUL-CEQA-1 and MM CUL-CEQA-4 would be required and would include adherence to the BLM IM 2009-11 standards for protection of paleontological resources, including monitoring, salvage procedures, and the development of a Paleontological Resources Management Plan for the Project. Specifically, the Paleontological Resources Treatment Plan would describe procedures to be followed if vertebrate or noteworthy occurrences of invertebrate or plant fossils are discovered, which would include that the user/operator will suspend all operations that further disturb such materials and immediately contact the authorized officer. Work in the area will not resume until written authorization to proceed is issued by the authorized officer. Within five working days, the authorized officer will evaluate the discovery and inform the operator of actions that would be necessary to prevent loss of significant scientific values. Upon verification from the authorized officer that the required mitigation has been completed, the operator would be allowed to resume operations. Implementation of this MM, as well as the above mentioned APMs and BMPs, impacts to paleontological resources would be reduced to less than significant.

Therefore, the overall impacts related to paleontological resources would be less than significant with MM CUL-CEQA-1 and MM CUL-CEQA-4 incorporated.

Impact CUL 4 - Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation

As indicated in Section 4.7.7.1 of the TES, Segment p-17 includes a site with exposed human remains and may indicate an increased potential for encountering additional human remains during ground disturbing activities. If human remains are discovered during construction of the Project, this could result in a potential impact prior to mitigation. Specifically, the Colorado River Indian Tribe (CRIT) expressed concern regarding the treatment of human remains and mortuary items. It is their belief that if human remains are encountered, they should not be removed but avoided entirely and left in place. MM CUL-CEQA-1 would be implemented, which requires implementation of BMP CULT-08 (provides compliance with CMA LUPA-TRANS-CUL-6), requiring the proponent to consider such sites in Project planning and BMP CULT-03 which includes avoidance procedures and other stipulations for such sites. Specifically, if human remains are discovered on non-federal land within California, the Project must comply with the standards identified within Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5, and if human remains are discovered on federal lands, the Project must comply with the standards outlined in the Native American Graves Protection and Repatriation Act.

Further, with the implementation of MM CUL-CEQA-1 would also require compliance with APM CULT-02, if construction or other Project personnel discover what may be human remains, funerary objects, or items of cultural patrimony on BLM-administered land, all construction activities would cease within 100 feet of the discovery. The location of the find would not be publicly disclosed, and the remains would be secured and preserved in place. DCRT or its contractors would immediately notify the BLM Authorized Officer and the appropriate sheriff's office of the discovery, followed by written notification. The BLM would then notify the Native American Parties of interest and the SHPO. If the remains were found on private land, the SHPO would be notified immediately after the tribes. How to proceed from there would be determined through consultation with the appropriate agencies. If the remains can be left safely in place, that would be the preferred option. Construction would not resume in the area of the discovery until the BLM Authorized Officer has issued a Notice to Proceed.

In California, if the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of such identification. The most likely descendant would work with the Cultural Resource Specialist to develop a program for re-interment or other disposition of the human remains and any associated artifacts. No additional work would take place in the immediate vicinity of the find until the appropriate actions have been implemented.

In addition, MM CUL-CEQA-1 would also require the implementation of CMAs. Specifically, CMA LUPA-CUL-4 would be implemented during construction through MM CUL-CEQA-1. CMA LUPA-CUL-4 is specific to the Project design to minimize impacts on cultural resources, including those places of elevated cultural or spiritual significance to Federally recognized tribes. Compliance with CMA LUPA-CUL-4 would be satisfied with BMP-CULT-03, which states that the Proponent would follow avoidance and stipulations outlined in the PA and appropriate HPTPs, and APM-CULT-01 and APM-CULT-02, in which the Proponent commits to following those stipulations.

With implementation MM CUL-CEQA-1 the Project would result in a less than significant impact to human remains.

2.5.6 Cultural Resources Mitigation

MMs for cultural resources are outlined in the draft PA (Appendix 2D of the EIS). The draft PA has been developed prior to the issuance of the ROD for public review, and measures contained in the final PA would be implemented prior to and during construction and post-construction during maintenance activities, operations, and decommissioning. CEQA mitigation measures would be implemented in accordance with the PA and the ROD.

MM CUL-CEQA-1: Implement Cultural Resources Applicant Proposed Measures, Best Management Practices, Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.5.2 and 2.5.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to cultural resources. These APMs, BMPs, and CMAs include; APM CULT-01, APM CULT-02, BMP CULT-03, BMP CULT-04, BMP

CULT-05, BMP CULT-06, BMP CULT-07, BMP CULT-08, APM PALEO-01, BMP PALEO-02, CMA LUPA-CUL-4, CMA LUPA-TRANS-CUL-1, CMA LUPA-TRANS-CUL-2, CMA LUPA-TRANS-CUL-3, CMA LUPA-TRANS-CUL-4, CMA LUPA-TRANS-CUL-5, CMA LUPA-TRANS-CUL-6, CMA DFA-VPL-CUL-1, CMA DFA-VPL-CUL-2, CMA DFA-VPL-CUL-3, CMA DFA-VPL-CUL-4, CMA DFA-VPL-CUL-5, CMA DFA-VPL-CUL-6, CMA DFA-VPL-CUL-7. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements:

- **APM CULT-01: Cultural Resources Inventory.** See MM CUL-CEQA-2 below for more details on the cultural resources inventory.
- **APM CUL-02: Monitoring Discovery Plan.** See MM CUL-CEQA-2 below for more details on the Monitoring Discovery Plan.
- **BMP CULT-03: Cultural Resources Avoidance and Stipulations.** See MM CUL-CEQA-3 below for more details on cultural resources avoidance stipulations.
- **BMP CULT-04: Worker Cultural Resources Awareness Program.** See MM CUL-CEQA-2 below for more details on the worker cultural resources awareness program.
- **APM PAELO-01: Paleontological Resources Treatment Plan.** See MM CUL-CEQA-4 below for more details on the Paleontological Resources Treatment Plan required for the Project.

MM CUL-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

MM CUL-CEQA-2: Cultural Resources Inventory.

The Applicant shall preform a cultural resources inventory prior to the start of construction activities. The cultural inventory (which is further required by APM-CULT-01) shall include archival and pedestrian surveys to identify cultural resources, as well as an evaluation of the significance of those resources that cannot be avoided, in order to determine eligibility for listing in the CRHR, or that meet the qualifications to be considered unique archaeological resources under CEQA. A technical memorandum or report shall be completed, documenting the cultural resources within the Project area, and the associated eligibility listing. Avoidance of cultural resources within the Project area (as required through MM CUL-CEQA-2 below) shall be the preferred option when handling cultural resources that may be impacted by construction. If avoidance is not possible, then a HPTP and MDP will be prepared and implemented by the Applicant throughout construction activities to ensure proper treatment of the significant or unique resources, as specified in the PA. This HPTP and MDP will, at a minimum, include the following:

- Training of workers to recognize cultural resources (as specified in BMP CULT-04);
- A brief description of all known cultural resources within the Project area;
- A description of all avoidance measures such as flagging or fencing, and specific timeframes during which these MMs would be required to protect cultural resources;
- Preparation and implementation of an MDP (as specified in APM CULT-02). This MDP shall include the following specifications:
    - The MDP shall map all cultural resources within the Project analysis area;
    - The MDP shall detail how resource are determined eligible or resources that are unevaluated but are avoided by Project design and would be marked and protected as Environmentally Sensitive Areas during construction;
    - Th MDP shall also map additional areas that are considered to be of high sensitivity for discovery of buried significant cultural resources including burials, cremations, or sacred features; and
    - The MDP shall detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native American tribes, and assessing NRHP and CRHR eligibility in the event of unknown archaeological resources are discovered during construction;
- Recording procedures and documentation for all cultural resources identified within the Project area; and
- Policies for any collection, retention, and/or disposal of cultural resources uncovered during construction.

MM CUL-CEQA-2 Implementation

Responsible Party: The Applicant shall be responsible for ensuring the Cultural Resources Inventory and HPTP/MDP is prepared and implemented prior to and during construction activities.

Timing: The Cultural Resources Inventory shall be completed prior to the start of construction activities and the HPTP/MDP shall be implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Known cultural resources shall be documented and mapped prior to the start of construction. Monthly reports shall be prepared by the Applicant and submitted to the CPUC. These monthly reports shall include a summary of compliance measures taken regarding the HPTP/MDP and a list of any cultural resources encountered during construction.

Standards for Success: Known cultural resources will be avoided in accordance with this measure. Impacts to unknown cultural resources will be minimized to a less than significant level and treated appropriately throughout all construction activities.

MM CUL-CEQA-3: Cultural Resources Avoidance and Stipulations.

The Applicant shall first consider avoidance of impacts for all known cultural resources identified in the Project analysis area, through the cultural resources inventory. If the resource cannot be avoided, then the Applicant shall evaluate the resources for significance and eligibility for listing in the CRHR, to determine whether the resource qualifies as a unique archaeological resource under CEQA. As stated in BMP CULT-03, the Applicant would follow the avoidance procedures and other stipulations outlined in the PA and in the appropriate State HPTP. It shall do so for each cultural resource identified in the Project analysis area. If cultural resources cannot be avoided, then the Applicant shall implement MM CUL-CEQA-2 and any resources shall be evaluated for significance and eligibility for listing in the CRHR. Potential impacts on sites that qualify as historical resources or unique archaeological resources shall be mitigated in accordance with the provisions of the HPTP. HPTPs for historic properties shall comply with the requirements of CEQA Guidelines Section 15064.5(a)(3)(C) and (D).

MM CUL-CEQA-3 Implementation

Responsible Party: The Applicant shall be responsible for ensuring that all known cultural resources are avoided in conformance with this mitigation measure.

Timing: Cultural resources avoidance shall be implemented throughout all construction activities or treated with the provisions of the HPTP (MM CUL-CEQA-2) if avoidance is not possible.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC. These monthly reports shall include a summary of compliance measures taken regarding the cultural resources avoidance stipulations and a list of any known or unknown cultural resources encountered during construction.

Standards for Success: Impacts to know or unknown cultural resources will be minimized to a less than significant level throughout all construction activities.

MM CUL-CEQA-4: Protect Paleontological Resources.

The mitigation actions required by APM PALEO-01 and BMP PALEO-02 shall be accomplished by following the guidance within BLM IM 2009-11, which the CPUC has accepted as appropriate for CEQA (DRECP EIS/EIR). The Applicant shall develop a Paleontological Resources Management Plan prior to the start of construction activities, which shall be implemented throughout all construction activities associated with the Project. The Paleontological Resources Management Plan shall include the following steps:

- Project developers shall document in a paleontological resources assessment report whether paleontological resources exist in a Project area on the basis of the following: the geologic context of the region and site and its potential to contain paleontological resources (including the PFYCs on site), a records search of institutions holding paleontological collections from California desert regions, a review of published and unpublished literature for past paleontological finds in the area, and coordination with paleontological researchers working locally in potentially affected geographic areas (or studying similar geologic strata).

- If the potential fossil yield classification (PFYC) of the geologic units to be encountered during Project construction has not been determined, the Project developer shall use the best available data and field surveys, as applicable, to develop a site-specific map of the PFYC ratings. The PFYC map shall be at a scale equal to or more detailed than 1:100,000. Depending on the extent of existing information available and the sensitivity of the site, development of the resource assessment and PFYC map could require the completion of a paleontological survey.

- If paleontological resources are present at the site or if the geologic units to be encountered by the Project (at the surface or the subsurface) have a PFYC Class of 3, 4, or 5, a Paleontological Resources Management Plan shall be developed. The elements of the plan shall be consistent with BLM IM 2009-11 and shall be prepared and implemented by a professional paleontologist as defined under the Society of Vertebrate Paleontology standards. The plan shall include the following:

  - The qualifications of the principal investigator and monitoring personnel

  - Construction crew awareness training content, procedures, and requirements;

  - Any measures to prevent potential looting, vandalism, or erosion impacts;

  - The location, frequency, and schedule for on-site monitoring activities;

  - Criteria for identifying and evaluating potential fossil specimens or localities;

  - A plan for the use of protective barriers and signs, or implementation of other physical or administrative protection measures;

  - Collection and salvage procedures;

- Identification of an institution or museum willing and able to accept any fossils discovered; and
- Compliance monitoring and reporting procedures.

The Paleontological Resources Management Plan shall also identify if all geologic units that would be affected by the Project have been determined to be within an area with a PFYC Class of 1 or 2, the lead agency shall include paleontological resources as an element in construction worker awareness training and shall include measures to be followed in the event of unanticipated discoveries, including suspension of construction activities in the vicinity. The measure shall stipulate that the site be protected from further earth moving or damage until a qualified paleontologist can assess the significance and importance of the find and until the fossil specimen or locality can be recorded and salvaged, if necessary.

The Paleontological Resources Management Plan shall evaluate all of the construction methodologies proposed on a site, including destructive excavation techniques. Where applicable, the principal investigator shall include in the plan an evaluation of the potential for such techniques to disturb or destroy paleontological resources, an evaluation of whether loss of such fossils would represent a significant impact, and discussion of mitigation or compensatory measures (such as recordation/recovery of similar resources elsewhere on the site) that are necessary to avoid or substantially reduce the impact. Successful implementation of this MM will result in a less than significant impact to paleontological resources.

MM CUL-CEQA-4 Implementation

Responsible Party: The Applicant shall be responsible for ensuring the Paleontological Resources Management Plan is prepared and implemented throughout construction activities.

Timing: The Paleontological Resources Management Plan shall be developed prior to the start of construction activities and be implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC. These monthly reports shall include a summary of compliance measures taken regarding the Paleontological Resources Management Plan and a list of any paleontological resources encountered, if any.

Standards for Success: Impacts to known or unknown paleontological resources will be minimized to a less than significant level throughout all construction activities.

2.6 TRIBAL RESOURCES

This section describes the impacts to TCRs associated with the construction, operation, and maintenance of the proposed transmission line, substations, and ancillary facilities in terms of CEQA significance thresholds disclosed below in Section 2.6.4 below. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS. Cultural Resources are addressed in Section 2.5 of this CEQA appendix.

As discussed in Section 4.7.2.2 of the TES (BLM 2019), BLM has determined a Project-specific PA developed in consultation with interested Tribes, land-managing and permitting agencies,

and other stakeholders is required for the Project (Appendix 2D of the EIS). As stated in the PA, there is a procedure for finalizing and/or modifying the analysis area for the inventory of direct and indirect impacts to historic properties and TCPs that may be affected by the Project. The Project's direct analysis area has been defined as a 200-foot-wide corridor where the construction of Project elements such as structures, access and spur roads, and other ancillary elements would occur. In addition, the PA would outline protocols for minimizing impacts to areas of Native American concern, such as options for regulating access, inclusion of tribal members in cultural resources investigations and fieldwork, and the preparation of ethnographic studies to address the Project's cultural landscape, among other provisions, as required. As concluded in Section 4.6.2 of the TES, potential adverse effects to historic properties would be mitigated in accordance with the provisions of the PA. These same provisions provide adequate mitigation under CEQA to reduce significant impacts to historical resources and TCRs to a level less than significant. Avoidance of cultural resources by final design and construction would be the preferred form of mitigation. As the lead Federal agency responsible for ensuring compliance with the provisions of Section 106 of the NHPA, and other regulatory requirements specific to historic properties and tribal concerns, the BLM has initiated consultation with affiliated Native American tribes. Affiliated tribes were identified by BLM Field Offices (Yuma, Palm Springs, Lake Havasu, Hassayampa, and Lower Sonoran), as well as through communication with the Native American Heritage Commission in California.

The BLM's consultation protocols include formal Government-to-Government and Section 106 consultation through letters and outreach, and face-to-face meetings and conference calls. In addition, the BLM has requested tribal input through the NEPA scoping process and workshops.

Efforts to initiate government-to-government consultation with Native American tribes with jurisdiction or interest in the Project have been undertaken. Section 106 consultation has been summarized in Section 5.3 of the EIS.

In California, AB 52 changes sections of the public resources code to add consideration of Native American culture within CEQA. The goal of AB 52 is to promote the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts to resources of importance to their culture. To reach this goal, the bill establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential TCRs in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

A TCR, as defined in section 21074 of the PRC, defined TCRs as either:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the CRHR.
    b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section

5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

a. A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

b. A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

AB 52 establishes a consultation process for CEQA lead agencies with all California Native American Tribes, both Federally and non-Federally recognized tribes. AB 52 requires tribal notification, meaningful consultation, and consideration of Tribal Cultural Values in determination of project impacts and mitigation.

As the CEQA lead agency, the CPUC has initiated the AB 52 process in connection with DCRT's CPNC application. AB 52 consultation is ongoing with each tribe that responded to the invitation to consult. AB 52 consultation will continue until inventories are completed, thus ensuring that consulting tribes continue to be involved given that they're identified as having "unique knowledge" to identify TCRs. When appropriate, CPUC will reach out to the tribes separately regarding conclusion of the AB 52 consultation process.

Table 2.6-1 summarizes the CPUC's tribal consultation and coordination to date. This will be ongoing during the CEQA (and NEPA) process.

Table 2.6-1 AB 52 Tribal Consultation

DATE	TRIBE	DESCRIPTION
11/4/16	Cabazon CRIT Torres Martinez Twenty-Nine Palms	Letter to tribes providing formal notification of the Project.
7/17/17	Twenty-Nine Palms	Letter to tribe providing an update on status consultation and the Project in general.
7/28/17	CRIT	Letter from tribe requesting an in-person meeting.
9/1/17	Twenty-Nine Palms	Letter from tribe expressing their continued interest in the Project.

2.6.1 Thresholds and Methodology

Existing conditions described in Section 3.7 of the TES (BLM 2019) have been evaluated with regard to their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The potential impacts associated with the Project are evaluated on a qualitative and quantitative basis through a comparison of the anticipated Project effects on tribal resources. The evaluation of Project impacts is based on the significance criteria established by

Appendix G of the CEQA Guidelines, listed below. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

The evaluation of Project impacts is based on the significance criteria established by Appendix G of the CEQA Guidelines (refer to section 2.6.4 below for additional information), and additional criteria identified specific to these issues of Native American concerns, as discussed in Section 4.7.2.3 of the TES (BLM 2019):

- Project-related changes that would restrict Native American access into traditional use areas and TCPs, and by direct extension, TCRs under CEQA and CPUC's Tribal consultation.
- Project-related changes that result in new access into areas where access had previously been limited. This would be the result of new access roads that would open up areas to OHV traffic and could result in vandalism of cultural resource sites.
- Project ground disturbance that results in the loss or destruction of cultural resource sites and erases the connection between individual cultural resource sites on the landscape. (Specific information regarding potential effects to cultural resource sites are discussed in Section 4.6 of the TES.)
- Project-related changes that modify visual aspects of TCPs, TCRs, and the cultural landscape, especially specific to the Salt Song Trail.
- Project-related changes resulting in new disturbance in pristine environments that would affect the energy of a natural landscape.
- The following assumptions underlie the Section 106 and CPUC's consultation process:
- Native American tribes may choose not to divulge particularly sensitive information outside of the tribal community
- Community members may have their own beliefs, which may not necessarily be shared by members of the Tribal council
- BLM and CPUC can only address Native American areas of concern that are made known
- Tribes may share new concerns during the Section 106 and NEPA process, and the CEQA process; the BLM and CPUC will attempt to address these in the Project and Resource-specific HPTPs, as identified in the PA.
- Some Tribes may defer to other Tribes in the decision-making process.

2.6.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A.

By giving consulting tribes information on resources that may be identified as CRHR- or NRHP-eligible, and hence meeting the AB 52 definition of a TCR, the following BMPs would apply to the portion of the Project located within California. They have, therefore, been incorporated into the Project for evaluation of significant impacts to concerns of Native American Tribes.

- **APM CULT-01: Cultural Resources Inventory.** A cultural inventory would be conducted that would document cultural resources within the area of potential effects for the Project. Based on results of this inventory, a HPTP would be developed to specifically address direct and indirect impacts that may result from Project construction.

- **APM CULT-02: Monitoring and Discovery Plan.** DCRT's contractor would prepare an MDP that would describe procedures to be followed in the event of the discovery of cultural resources or human remains during implementation of the Project. The Draft MDP would be reviewed by BLM and consulting state and federal agencies, the California and Arizona SHPOs, and local tribes. Upon approval of the MDP, DCRT would follow the procedures set forth in that plan during implementation of the Project.

- **BMP CULT-03: Cultural Resources Avoidance and Stipulations.** DCRT would follow the avoidance procedures and other stipulations outlined in the PA and in the appropriate State HPTP for each historic property identified in the HPTP.

- **BMP CULT-04: Worker Cultural Resources Awareness Program.** Before starting any work, including mowing, staging, sediment and erosion control installation, tree removal, construction, and restoration, all employees and contractors performing activities and construction would receive training on the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act and the consequences of noncompliance with these acts. Training would also include cultural sensitivity to Native American concerns, since tribal monitors would be present during construction.

- **BMP CULT-06: Sensitivity Model.** BLM would develop a sensitivity model for cultural resources using the DRECP geodatabase for the purpose of selecting Project footprints to minimize impacts to recorded historic properties and areas that are culturally sensitive to Tribes.

- **BMP CULT-07: Sample Survey.** The BLM shall ensure that a statistically significant cultural resources sample survey is conducted for consideration in Project planning in locations within the CDCA boundary.

- **BMP CULT-08: Project Planning.** DCRT would consider the results of the BLM's cultural resources sensitivity model in Project planning and provide justification if it is not considered to be feasible.

2.6.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project related to Tribal Interests are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-CUL-4.** Cultural Resources and Tribal Interests. Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to Federally recognized Tribes.

- **CMA LUPA-TRANS-CUL-1: Cultural Resources and Tribal Interests**. For transmission (and renewable energy) activities, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:

  - All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.

  - All appropriate costs associated with preliminary sensitivity analysis.

  - All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.

  - All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.

- **CMA LUPA-TRANS-CUL-4.** For transmission (and renewable energy) activities, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.

- **CMA LUPA-TRANS-CUL-5**. For transmission (and renewable energy) activities, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.

- **CMA LUPA-TRANS-CUL-6.** For transmission (and renewable energy) activities, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.

- **CMA DFA-VPL-CUL-1.** For renewable energy activities and transmission, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:

- All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.
- All appropriate costs associated with preliminary sensitivity analysis.
- All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.
- All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.

- **CMA DFA-VPL-CUL-4**. For renewable energy activities and transmission, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.
- **CMA DFA-VPL-CUL-5**. For renewable energy activities and transmission, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.
- **CMA DFA-VPL-CUL-6**. For renewable energy activities and transmission, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.
- **CMA DFA-VPL-CUL-7**. For renewable energy activities and transmission, complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar PA.

2.6.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant tribal impacts if it would:

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    1. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

2.6.5 Tribal Cultural Resources Impact Analysis

Impact TCR 1 - Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

I. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or

II. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant with Mitigation

Segments p-17 and p-18 are of elevated tribal concern in terms of new and existing access, and areas of elevated spiritual importance. Segment p-17 additionally contains known human remains. These segments have also been identified as areas of high sensitivity for cultural resources and resources of tribal importance according to the Project's cultural resources sensitivity analysis (Kline 2018). The resources along these segments are considered by the tribes to be sensitive to both direct effects and indirect visual effects. MMs identified in the PA would be required in order to assess indirect effects and implement measures to avoid tribal resources where possible, and mitigate impacts if avoidance is not possible. Implementation of the MMs identified within the PA would reduce potential impacts to a less than significant level.

In addition to segments p-17 and p-18, segments cb-10, ca-04, i-08s, p-15e, p-15w, and x-11 cross the Colorado River which is an important tribal resource for local tribes. Specifically, the CRIT, Quechan Tribe of the Fort Yuma Indian Reservation, and Twenty-Nine Palms Band of Mission Indians all expressed concern about the Colorado River, and its influence on their spiritual belief and cultural history. As such, the Colorado River crossing and the indirect and direct effects of its siting on the landscape and potential impact to historic properties are of great concern to the Native American tribes. MMs identified within the PA, as well as continued government-to-government Section 106 consultation would reduce potential impacts through avoidance of tribal resources, where possible, and implementation of measures to address tribal resources where avoidance is not possible. Therefore, impacts related to tribal resource would be less than significant with mitigation incorporated.

Further, as noted in Section 4.7.6 of the TES (BLM 2019), if impacts to Native American concerns cannot be avoided by Project design, MM TCR-CEQA-1 would be required and would implement APMs, BMPs, and CMAs, to reduce potential impacts related to changes to the landscape.

Prior to construction, Class III cultural resource surveys would be conducted to identify sites that need to be avoided or mitigated through data recovery. Monitoring during construction would minimize the potential for inadvertent damage to intact subsurface deposits that could not be identified during Class III surveys.

Visual impacts on cultural sites that are sensitive to visual change would be assessed so that impacts could be minimized through analysis of the viewshed and tower placement. An unavoidable impact would occur to the extent that transmission line infrastructure can be seen from intaglios, petroglyphs, TCPs/TCRs, or other resources of elevated concern to Native Americans., however, MM TCR-CEQA-1 would be required and would implement APMs, BMPs, and CMAs in order to reduce visual impacts to a less than significant level.

Pursuant to Section 4.7.8 of the TES (BLM 2019), the construction of a new transmission line on the landscape, would likely have some residual effect on issues of Native American concern because of the permanence of the infrastructure for the life of the Project. In particular, the visual effects of the transmission line infrastructure would have a residual visual impact on the landscape and continue to contribute to the erasing the ancestral footprint of the Tribes from the landscape. The residual effect would be more pronounced in locations where the transmission line does not parallel existing infrastructure. While visual impacts, to the extent practicable, would be addressed through Project design and mitigation, the changes to the landscape cannot be avoided and thus could result in a potential impact prior to mitigation.

In additional to visual impacts to tribal resources, the access requirements for operations and maintenance leave the residual possibility of increasing recreational access into areas that may currently be visited infrequently. This increases the risk of inadvertent damage or vandalism to features important to Tribes, and thus could result in a potential impact prior to mitigation. Access concerns may be addressed in the PA by including specific protocols to restrict access into sensitive areas by barrier placement or providing regular patrols to prevent damage or vandalism, but the effectiveness of these MMs may not be as efficient as avoiding the introduction of any new access.

Further, MM TCR-CEQA-1 would be required in order to implement APMs, BMPs, and CMAs into the Project to reduce potential impacts to tribal resources to a less than significant level. Specifically, CMAs LUPA-CUL-4, LUPA-TRANS-CUL-1, LUPA-TRANS-CUL-4 through LUPA-TRANS-CUL-6, DFA-VPL-CUL-1, and DFA-VPL-CUL-4 through DFA-VPL-CUL-6 would apply to the Project (Section 2.6.3 of this appendix, as well as Appendix 2C of the EIS). DFA-VPL-CULT-7 would also apply to the Project (Appendix 2C of the EIS) and would be satisfied by information provided in Sections 3.6.1.1 of the TES (BLM 2019), as well as Appendix 2D of the EIS.

LUPA-CUL-4 is specific to the Project design to minimize impacts on cultural resources, including those places of elevated cultural or spiritual significance to federally recognized tribes. Compliance with LUPA-CUL-4 would be satisfied with BMP-CULT-03, which states that the

Proponent would follow avoidance and stipulations outlined in the PA and appropriate HPTPs, and APM-CULT-01 and APM-CULT-02, in which the Proponent commits to following those stipulations.

LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 are specific to the responsibility of the Project Proponent to pay for costs associated with the Project's cultural resources compliance. Compliance with LUPA-TRANS-CUL-1 and DFA-VPL-CUL-1 would be satisfied by APM-CULT-01 and APM-CULT-02, in which the Proponent commits to conducting a cultural resources inventory of the direct and indirect analysis area, preparing HPTPs, and conducting cultural resource monitoring during Project construction, operations, and maintenance (as appropriate) to meet stipulations outlined in the PA (Appendix 2D).

LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 are specific to the development of a cultural resources sensitivity model based on existing cultural resources data in the CDCA for consideration in Project planning and alternative selection. Compliance with LUPA-TRANS-CUL-4 and DFA-VPL-CUL-4 would be satisfied with BMP-CUL-06. The BLM has prepared a sensitivity model (Kline 2017).

LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 are specific to the provision of a statistically significant cultural resources sample survey to be used in Project planning. Compliance with LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5 would be satisfied by BMP-CULT-07, which requires cultural resources Class III survey of Segments p-17 and p-18 to be conducted during the NEPA and CEQA analyses to meet the conditions of LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5. The Class III survey of Segments p-17 and p-18 has been conducted.

LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 is specific to the Proponent's justification to move areas identified as sensitive to cultural resources forward through NEPA and CEQA analyses. Compliance with LUPA-TRANS-CUL-6 and DFA-VPL-CUL-6 would be satisfied by BMP-CULT-08, which requires such justification from the Project proponent.

DFA-VPL-CUL-7 speaks to completion of the Section 106 process. Compliance with DFA-VPL-CUL-7 is satisfied in Sections 3.6.1.1 of the TES (BLM 2019). Section 3.6.1.1 of the TES presents the regulatory requirement of the NHPA that includes Section 106. Section 5.2 of the EIS summarizes the process of drafting the PA. Section 5.3 of the EIS presents the efforts of consultation with Native American tribes. Appendix 2D of the EIS contains the draft PA for the Project.

With the implementation of MM TCR-CEQA-1, as well as MMs required and included within the PA (Appendix 2D of the EIS), impacts would be less than significant with mitigation incorporated.

2.6.6 Tribal Cultural Resources Mitigation

MMs for Native American concerns will be outlined in the PA and/or the ROD. The draft PA (Appendix 2D of the EIS) has been developed prior to the issuance of the Project ROD. Measures contained in the PA would be implemented prior to and during construction and post-construction during maintenance activities and operations. CEQA mitigation measures would be implemented in accordance with the PA and the ROD.

In addition, APMs and BMPs in Appendix 2A of the EIS and stipulations that would be a part of the ROD outline specific protocols for Native American TCPs/TCRs. These APMs, BMPs, and stipulations address, but are not limited to, protocols specific to coordination and communication with Tribes, roads and access, compliance with applicable laws, and confidentiality, among other procedures that may mitigate effects and will be implemented into the Project through the following MM:

MM TCR-CEQA-1: Implement Tribal Cultural Resources Applicant Proposed Measures, Best Management Practices, Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.6.2 and 2.6.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to tribal cultural resources. These APMs, BMPs, and CMAs include: APM CULT-01, APM CULT-02, BMP CULT-03, BMP CULT-04, BMP CULT-06, BMP CULT-07, BMP CULT-08, CMA LUPA-CUL-4, CMA LUPA-TRANS-CUL-1, CMA LUPA-TRANS-CUL-4, CMA LUPA-TRANS-CUL-5, CMA LUPA-TRANS-CUL-6, CMA DFA-VPL-CUL-1, CMA DFA-VPL-CUL-4, CMA DFA-VPL-CUL-5, CMA DFA-VPL-CUL-6, CMA DFA-VPL-CUL-7. If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts.

For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following APMs and BMPs have been modified to meet CEQA requirements:

- **APM CULT-01: Cultural Resources Inventory.** See MM CUL-CEQA-2 (Section 2.5.6) for more details on the cultural resources inventory.
- **APM CULT-02: Monitoring Discovery Plan.** See MM CUL-CEQA-2 (Section 2.5.6) for more details on the Monitoring Discovery Plan.
- **BMP CULT-03: Cultural Resources Avoidance and Stipulations.** See MM CUL-CEQA-3 (Section 2.5.6) for more details on cultural resources avoidance stipulations.
- **BMP CULT-04: Worker Cultural Resources Awareness Program.** See MM CUL-CEQA-2 (Section 2.5.6) for more details on the worker cultural resources awareness program.

MM TCR-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant

shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

2.7 GEOLOGY AND SOILS

This section describes the impacts to geology and soil resources that could potentially occur during construction, operation, and maintenance of the Project. Environmental impacts presented in Section 4.3 of the TES (BLM 2019) are discussed in terms of CEQA significance thresholds disclosed in Section 2.7.4. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.7.1 Thresholds and Methodology

Section 4.3 of the TES (BLM 2019) discloses adverse environmental effects that may result from construction and operation of the Project. This CEQA analysis uses information and data from available published resources, including journals, maps, and government websites. This information was collected and reviewed to bolster the environmental impact analysis found in Section 4.3 of the TES within the context of the impact thresholds found in Appendix G of the CEQA Guidelines.

This analysis assumes that the applicant would comply with the following environmental factors and components of the Project Description (Chapter 2) when evaluating the effects of the Project on geology and soils:

- A geotechnical engineering study would be completed prior to final design and construction of the Project to identify site-specific geological conditions and potential geological hazards. The data collected from the study would be used to guide sound engineering practices, and foundation design would be consistent with geological conditions for each tower site.

- Existing fault lines, land subsidence areas, earth fissures, mining claims, oil/gas reserves, areas of mineral resources of economic value, and other pertinent geological and mineral-related features have been accurately mapped.

- Operation and maintenance of the Project, as it relates to geological and mineral resources, would primarily be the presence of transmission structures and

transmission lines and how they could preclude access to underground resources in the immediate vicinity.

- Transmission lines typically have little impact to mining operations. Span lengths are such that access to minerals can be accomplished between spans. Should open pit mining be planned, structures can be left on 'islands,' or the mining interests can have the transmission line locally re-routed (personal communication, Mark Wieringa, Western, 2013).

2.7.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to geology and soils under CEQA.

- **APM WQ-01: SWPPP Development and Implementation.** Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project area, and the soil types within the Project area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR 112.

The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following:

- defining ingress and egress within the Project site
- implementing a dust control program during construction
- properly containing stockpiled soils

Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins.

Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized.

The Plan would be updated during construction as required by the State Water Resources Control Board (SWRCB) and the Arizona Department of Environmental Quality (ADEQ). The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit:

- stormwater team qualifications and contact information
- identification of operators
- nature of construction activities
- sequence and estimated dates of construction activities
- site description
- site map(s)
- receiving waters
- control measures to be used during construction activity
- summary of potential pollutant sources
- use of treatment chemicals
- pollution prevention procedures, including spill prevention and response and waste management procedures

- **BMP SOIL-01.** During reclamation and revegetation efforts, a BLM soil scientist and/or botanist would assist reclamation crews with determining type and location of any scarification.

- **BMP SOIL-02.** During reclamation and revegetation efforts, the BLM would work with reclamation crews to determine where soil compaction would be appropriate, to avoid potential adverse conditions created by compaction.

- **BMP SOIL-03.** Covers for topsoil stockpiles would be of materials resistant to damage and/or degradation from exposure to ultraviolet light and other elements and would be replaced (as needed) if they deteriorate, become worn, or damaged.

- **BMP SOIL-04.** The disruption of desert pavement shall be minimized to the extent feasible. Grading for new access roads or work areas in areas covered by desert pavement shall be avoided if possible.

- **BMP SOIL-05.** Desert pavement in activity areas in California shall be assessed by biological monitors prior to construction. If disturbance from an activity is likely to exceed 10% of the desert pavement identified within the activity boundary, the BLM

would determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.

- **BMP SOIL-06.** Side-casting of soil during road construction shall be avoided.
- **BMP SOIL-07.** To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.
- **APM BIO-12. Noxious and Invasive Species Control.** A Noxious Weed Control Plan that addresses specific requirements in CMA LUPA-BIO-11 would be developed, approved by the BLM, and implemented prior to initiation of ground disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area, describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and practices for the application of herbicides; and other requirements in applicable BLM Weed Management Plans.

2.7.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to geology and soils are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-SW-8**. As determined necessary on an activity specific basis, prepare a site plan specific to major soil types present (≥5% of footprint or laydown surfaces) in Wind Erodibility Groups 1 and 2 and in Hydrology Soil Class D as defined by the USDA NRCS to minimize water and air erosion from disturbed soils on activity sites.
- **CMA LUPA-BIO-9.** Implement the following general LUPA CMA for water and wetland dependent resources:
  - Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
    - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where

runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.

- Hazardous material leaks, spills, or releases will be immediately cleaned, and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
- Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.

o Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:

- Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
- Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
- Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.
- Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.
- Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.
- Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.

• **CMA LUPA-SW-9.** The extent of desert pavement within the proposed boundary of an activity shall be mapped if it is anticipated that the activity may create erosional or ecologic impacts. Mapping will use the best available data and standards, as determined by BLM. Disturbance of desert pavement within the boundary of an activity shall be limited to the extent possible. If disturbance from an activity is likely to exceed 10% of the desert pavement mapped within the activity boundary, the BLM will determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.

- **CMA LUPA-SW-10.** The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped if it is anticipated that an activity will impact these resources. To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.

- **CMA LUPA-SW-11.** Where possible, side casting shall be avoided where road construction requires cut- and-fill procedures.

2.7.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant geology and soils impacts if it would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving:
    1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
    2. Strong seismic ground shaking?
    3. Seismic-related ground failure, including liquefaction?
    4. Landslides? Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
b. Result in substantial soil erosion or the loss of topsoil?
c. Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?
d. Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial risks to life or property?
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

2.7.5 Geology and Soils Analysis

Impact GEO 1 - Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving:

a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

b. Strong seismic ground shaking?

c. Seismic-related ground failure, including liquefaction?

d. Landslides?

Less Than Significant – No Mitigation Required

This impact evaluates potential exposure of the Project to seismic hazards, including fault rupture, strong ground shaking, ground failure and liquefaction, and landslides.

(i) Fault Rupture

Based on review of the 2015 Alquist-Priolo Earthquake Fault Zoning Map, there are no Alquist-Priolo Earthquake Fault Zones that underlie the Project segments in Riverside County (California Department of Conservation 2015). As discussed in Section 3.3.3.3 of the TES (BLM 2019), the closest Alquist-Priolo Earthquake Fault Zone is about 70 miles west of the Project area. In addition, no Quaternary-age active faults (active faults that have been recognized at the surface and that have evidence of movement in the past 1.6 million years) are mapped within the 20-mile study area for faults (HDR 2017a). Because there are no Alquist-Priolo Earthquake Fault Zones or other known active earthquake faults within the study area, impacts would be less than significant under this criterion.

(ii) Strong Ground Shaking

The seismic hazard is relatively low (“moderate to low” to “low”) for the region that encompasses the Project. Seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake as expressed in terms of g (the acceleration due to gravity), or peak ground acceleration (PGA) [5]. The United States Geologic Survey (USGS) has developed maps for the US that describe the likelihood for shaking of varying degrees to occur in a given area (USGS 2014). The seismic hazard potential in the study area, as determined from the USGS seismic hazard maps, is shown as the PGA for an earthquake with a 2 percent probability of exceedance in 50 years. Values range from a relatively low risk of 6 to 8 percent at the Delaney Substation in Maricopa County, Arizona, to a moderate risk of 16 to 18 percent at the Colorado River Substation in Riverside County, California.

Transmission structures in California are required to be designed in accordance with CPUC General Order (GO) 95, which requires overhead line construction to be capable of withstanding wind, temperature, and wire tension loads. Specifically, section IV of the GO 95 covers mechanical strength requirements for each class of line, either alone or involved in crossings, conflicts, or joint use of poles. The order specifies safety factors for electrical line construction that are the minimum allowable ratios of ultimate strengths of materials to the maximum working stresses. The order also specifies strength requirements for construction materials, and minimum wood pole setting depths for various site conditions. It should be noted that wind-loading design requirements for overhead lines generally result in far greather strength requirements than those necessary to address strong seismic ground shaking. The completion of a geotechnical engineering study prior to final design and construction of the Project is standard practice to identify site-specific geological conditions, so that such information can be used to guide sound engineering practices, and so that foundation design is consistent with geological conditions for each tower site.

[5] The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared.

In addition to the requirements of GO 95, foundations and structures for electrical substation and transmission facilities are constructed in accordance with applicable industry building codes and standards. For example, applicable industry building codes and standards require substations to be designed and equipped according to qualification requirements described in the Institute of Electrical and Electronics Engineers (IEEE) Standard 693-2005, Recommended Practice for Seismic Design of Substations. IEEE Standard 693-2005 exists to ensure that substations do not experience damage or loss of function during and after seismic events. Other applicable IEEE standards include (but are not limited to) IEEE 691-2001 (transmission structure foundation design and testing) and IEEE 977-2010 (guide to installation of foundations for transmission line structures).

Given the seismic risk of the area is low, and the application of standard industry building codes and standards (inlcuding GO 95 and IEEE standards), the risk of seismic damage to the Project would be minimal. Furthermore, in the unlikely event of an extreme earthquake scenario, the consequence of damage to Project structures on public safety and the environmental would be low. None of the Project components would be used for human occupancy and the Project would not appreciably increase public exposure to seismic risks since the right-of-way consists of open space and/or agriculture. If a strong earthquake were to occur in the Project area, the operator would send crews to inspect the lines and repair any damage detected, in accordance with existing practice and procedures. The potential impact from strong ground shaking is to the Project itself and would represent and inspection, repair, and maintenance issue for the Applicant rather than a significant impact to public safety or the surrounding environment. Accordingly, potential impacts associated with ground shaking would less than significant under this criterion.

(iii) Ground Failure and Liquefaction

Liquefaction occurs when saturated soil loses shear strength and deforms as a result of increased pore water pressure induced by strong ground shaking during an earthquake. As the excess pore pressure dissipates, volume changes are produced within the liquefied soil layer that can manifest at the ground surface as settlement of structures, floating of buried structures, and failure of retaining walls.

As discussed in Section 4.3.4.5 of the TES (BLM 2019), the Project segment in California would cross an area mapped as having very high to moderate liquefaction potential (Figure 3.3-5 of the TES [BLM 2019]). Maps depicting liquefaction potential are based solely on the character of underlying soils and the prevailing depth to groundwater, i.e., whether the preconditions necessary for liquefaction to occur exist. Liquefaction potential is different from liquefaction hazard because liquefaction potential maps do not incorporate the likelihood that an earthquake with sufficient magnitude to trigger liquefaction effects would occur. Given the low to moderate seismicity of the Project area, as described above, the hazard from liquefaction is relatively low.

As discussed above under the discussion of strong ground shaking (item ii), the application of standard industry building codes and standards (inlcuding GO 95 and IEEE standards) means the risk of seismic damage to the Project, including earthquake-induced liquefaction, would be minimal. As outlined in Chapter 2 of the TES, the applicant would conduct a Project-specific geotechnical engineering study to identify site-specific geological conditions and potential geological hazards. The completion of a geotechnical engineering study prior to final design and construction of the Project is standard practice to identify site-specific geological conditions, so

that such information can be used to guide sound engineering practices, and so that foundation design is consistent with geological conditions for each tower site. Additionally, the consequences of liquefaction within the study area would be minor, because the Project does not involve structures for human occupancy and because the right-of-way consists of open space and/or agriculture, and is closed off to the public aside from public road crossings. Should liquefaction or seismically induced ground movement (e.g., lateral spreading) cause damage to Project components, it would be an inspection and repair issue for the operator rather than a safety risk to the public or offsite property. For this reason, impacts from liquefaction would be less than significant.

(iv) Landslides

As discussed in Section 3.3.3.3 of the TES, the relative risk for landslides in the analysis area is low, with less than a 1.5 percent incidence. Locally there may be potential for slope movement in areas of steep topography (Table 3.3-2 of the TES) depending on site-specific conditions. The Project would be designed to avoid steep slopes where possible, and the portion within California would pass along the portion of the Palo Verde Valley at the base of the Mule Mountains, avoiding steep topography. Additionally, the Project would not involve road-cutting, ground disturbance, or other activities that would exacerbate the potential for landslides to occur. The Project would be constructed pursuant to preparation of a geotechnical report that may include recommendations for construction near any areas of potential landslide, if present. Given the relatively flat topography, aside from an ascent onto the Palo Verde Mesa, and the flexibility in siting of transmission tower bases, construction would be avoided where it would undercut slopes. In addition, construction would comply with the International Building Code and California Building Code. Given the application of appropriate engineering standards, the flexibility in siting transmission towers away from steep slopes, and the fact that the Project does not involve structures for human occupancy, the Project's impacts on public exposure to landslide risks would be less than significant.

Impact GEO 2 - Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation

Direct impacts to soil resources that may occur as a result of construction activities include the loss of soil productivity due to the removal of soils during new surface disturbance. Clearing of vegetation and topsoil, as well as grading, would be required during the construction phase of the Project, and these activities could result in newly exposed, disturbed soils that could be subject to accelerated erosion by wind and water. Any soil removal during the construction of the transmission structures would be permanent, resulting in a permanent loss of soil productivity. As such, potential impacts related to soils erosion and loss of topsoil could occur prior to mitigation.

One of the primary impacts of concern for construction is disturbance to soil biological crusts. It is expected that soils within the ROW have the ability to support soil biotic crust; therefore, it is expected that disturbance caused by excavation and compaction during construction may directly affect biological soil crusts. Clearing of the SCS site, ancillary facilities, and access roads could also adversely affect any soil biological crusts in the immediate vicinity, thus resulting in a potential impact prior to mitigation. As such, MM GEO-CEQA-1 would be implemented and

includes the incorporation of APMs and BMPs to reduce impacts related to soil biological crusts to a less than significant level. Specifically, BMP SOIL-07 requires that Project activities avoid biologically intact crusts and other soils highly susceptible to wind and water erosion. As described in Chapter 2 of the TES (BLM 2019), large portions of the Project have been routed to parallel existing linear infrastructure, thus reducing impacts to previously undisturbed soils. Additionally, during construction the use of roads already found within the ROW is expected to reduce impacts to soil resources within the ROW. Therefore, impacts related to soil biological crusts would be less than significant with mitigation incorporated.

Old roads which are not maintained are more susceptible to erosion by wind and water; therefore, any improvements to these roads would be a benefit to the soil resources. However, the potential for wind induced soil erosion is rated as moderate to high west of Colorado River in Riverside County, California (Riverside County 2015a) and could result in a potential impact prior to mitigation. Potential for erosion would be increased on disturbed areas after soil salvage operations due to removal of the vegetative cover and the loss of surface soil structure. Erosion of growth medium after redistribution on re-graded sites would also have a greater potential until the soil is stabilized by successful revegetation. Soil characteristics identified in Table 3.3-6 in the TES suggest that disturbed areas would experience low to high erosion potential either by wind or water. Windblown dust would result from the disturbance of fine-textured soils during construction and reclamation activities through the completion of the Project. As such, MM GEO-CEQA-2 would be required and includes the development and implementation of an Erosion Control Plan for the Project (part of the Erosion, Dust Control, and Air Quality Plan). This Erosion Control Plan would include measures to reduce potential impacts related to soil erosion and loss of topsoil during construction activities to a less than significant level.

Further, as discussed in Section 4.3.4.1 in the TES, most impacts to soil resources would be temporary, although the actual footprints of the structures and new access roads would result in permanent impacts to the soil resource, for those disturbances left unreclaimed. Cutting of trees and removal of vegetation may occur; however, where practicable, downed vegetation and undisturbed low vegetation would be left in place within the disturbance areas to serve as soil protection and erosion control. Vegetation would only be cleared to the extent necessary, minimizing impacts to soil resources.

Indirect impacts associated with soil removal may include invasive plant colonization, soil erosion, and reduction of soil water retention. Construction activities may also cause disturbance to fragile biological crusts, which could increase wind and water erosion and delay reestablishment of plant communities post construction. Other indirect effects are associated with the sediment redistribution of the soil resource as a result of wind and water erosion, which could cause damages to WOUS, Prime Farmlands, and air quality.

As discussed above, implementation of MM GEO-CEQA-1 would reduce these impacts to a less than significant level through the implementation of APMs, BMPs, and CMAs. Specifically, APM BIO-12 would require development of a Noxious Weed Control Plan, which would address potential invasive plant colonization. Implementation of APM WQ-01 would minimize soil erosion by requiring the applicant to obtain a NPDES Construction General Permit. As part of obtaining a National Pollution Discharge Elimination System (NPDES) Construction General Permit. The applicant would be required to design and implement a SWPPP, as outlined in APM WQ-01. The SWPPP would incorporate management practices for erosion and sedimentation

controls that are designed to prevent soil particles from detaching and being transported off-site. Examples of erosion control measures include use installation of temporary silt fences and other containment features (including gravel bags and fiber rolls) surrounding work areas to prevent the loss of soil during rain events and other disturbances. Sedimentation controls are structural measures intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas. Examples of sediment control measures include utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains.

Additionally, the BLM would require implementation of the following BMPs through MM GEO-CEQA-1, during construction, operation and maintenance, and during decommissioning of the Project: BMP SOIL-01, BMP SOIL-02, BMP SOIL-03, BMP SOIL-04, BMP SOIL-05, BMP SOIL-06, and BMP SOIL-07. Implementation of these BMPs would result in BLM working with the construction crews, reclamation crews, and soils scientists to determine where soil compaction would be appropriate in order to reduce the potential for adverse effects to biological crusts, water holding capacity, and permeability and porosity of the Project area. These BMPs would also include requirements for covering topsoil stockpiles, minimization of desert pavement, biological monitoring prior to construction, avoidance of side-casting of soil during road construction, and the avoidance of disturbance to desert biologically intact soil crusts. Implementation of MM GEO-CEQA-1 would reduce the potential for erosion or loss of topsoil and would effectively minimize construction, operation, maintenance, and decommissioning soil erosion impacts to a less than significant level.

The Project, through implementation of MM GEO-CEQA-1, would also require and be in compliance with CDCA CMAs LUPA-SW-8, LUPA-SW-9, LUPA-SW-10, LUPA-SW-11, LUPA-BIO-9 with the implementation of the above APMs and BMPs. The LUPA CMAs applicable to desert pavement and biological soil crusts overlap in many respects with the BMPs but tend to be more specific and stringent. For example, CMA LUPA-SW-8 and CMA LUPA-SW-10 address the same issue as BMP SOIL-07, i.e., biological soil crusts, but provide additional details on when protective measures should be implemented. Similarly, CMA LUPA-SW-9, BMP SOIL-04, and BMP SOIL-05 all address desert pavement in the same manner by indicating how biological monitors would identify sensitive soils and consult with BLM is such soils exceed 10% of the disturbance area for each phase of construction.

The implementation of MM GEO-CEQA-1 and MM GEO-CEQA-2 along with measures identified in the APMs, BMPs, and compliance with the applicable CMAs during all ground-disturbing activities during from construction and/or operation of the Project would minimize or avoid substantial losses of topsoil and substantial losses of soils, including biological crusts through wind and water erosion to a less than significant level.

Impact GEO 3 -Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant – No Mitigation Required

As discussed in Section 4.3.4.5 of the TES (BLM 2019), most cases of land subsidence in Riverside County are caused by excessive groundwater pumping and lower water tables. This

type of subsidence occurs very slowly over decades and affects broad areas; as such, structures sink uniformly with the ground and are not damaged. Because he severity of subsidence increases from the edges to the center like a bowl, certain infrastructure like canals and sewers, which rely on slope, can be damaged or rendered inoperable (AZGS 1993). Transmission lines, however, are not slope-dependent and would not be affected in such a way. In addition, a geotechnical engineering study would be completed prior to final design and construction of the Project to identify site-specific geological conditions and potential geological hazards including subsidence. Since the Project would not contribute to the over-pumping of groundwater basins that underlie the Project and would be designed to avoid areas where localized subsidence is occurring, impacts due to unstable soils would be less than significant.

Soil collapse typically occurs in recent (less than 10,000 years old) soils that were deposited in an arid or semi-arid environment. Collapsible soils are commonly associated with human-made fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. They predominantly occur at the base of mountains or in wind deposits. These soils typically contain minute pores and voids and may be partially supported by clay or silt, or chemically cemented with carbonates. When saturated, collapsible soils undergo a rearrangement of their grains, and the water removes the cohesive (or cementing) material, causing rapid settlement (Riverside County 2015a). Expansive, corrosive, or collapsible soil characteristics are identified locally through site-specific geotechnical testing. Associated hazards would be addressed through soil correction during construction or engineering design; therefore, this impact would be less than significant.

Impact GEO 4 - Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?

Less Than Significant – No Mitigation Required

Expansive soils are those soils with a significant amount of clay particles that have the ability to take on water (swell) or give up water (shrink). When these soils swell, the change in volume exerts significant pressures on loads (such as buildings) that are placed on them. As discussed in Section 4.3.4.5 of the TES (BLM 2019), the shrink swell potential in the Project area varies from low to high. As discussed above under the discussion of strong ground shaking (item ii), the application of standard industry building codes and standards (inlcuding GO 95 and IEEE standards) means that structures would be designed in a manner that addresses expansive soils by either removing them and replacing them with clean fill, or designing foundations and pole depths to accommodate expansive soils without issue. As outlined in Chapter 2 of the TES, the applicant would conduct a Project-specific geotechnical engineering study to identify site-specific geological conditions and potential geological hazards. The completion of a geotechnical engineering study prior to final design and construction of the Project is standard practice to identify site-specific geological conditions, so that such information can be used to guide sound engineering practices, and so that foundation design is consistent with geological conditions for each tower site. Therefore, impacts resulting from construction on expansive soils would be less than significant.

Impact GEO 5 - Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No impact

The Project would not require the use of septic tanks or other permanent wastewater disposal facilities, therefore, there would be no impact.

2.7.6 Geology and Soils Mitigation

MM GEO-CEQA-1: Implement Geology and Soils Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.7.2 and 2.7.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to geology and soils. These APMs, BMPs, and CMAs include; APM WQ-01, BMP SOIL-01, BMP SOIL-02, BMP SOIL-03, BMP SOIL-04, BMP SOIL-05, BMP SOIL-06, BMP SOIL-07, APM BIO-12, CMA LUPA-SW-8, CMA LUPA-BIO-9, CMA LUPA-SW-9, CMA LUPA-SW-10, CMA LUPA-SW-11. If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMP has been modified to meet CEQA requirements:

- **BMP SOIL-07.** As discussed in this BMP, desert biologically intact soil crusts would be avoided to the extent feasible. Where it is infeasible to avoid these areas, the Applicant would work with the BLM to identify further measures to reduce wind and water erosion in these areas and shall implement MM GEO-CEQA-2 in these areas to prevent long-term erosion.

MM GEO-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

MM GEO-CEQA-2: Implement an Erosion Control Plan and Demonstrate Compliance with Water Quality Permits.

The Applicant shall develop and submit an Erosion Control Plan to the CPUC and BLM at least 60-days prior to the start of construction activities. The Erosion Control Plan shall be developed in conjunction with the SWPPP (See APM WQ-01) and shall be kept onsite and readily available upon request. Successful implementation of the Erosion Control Plan will result in a less than significant impact related to erosion during all construction activities.

Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include:

- The location of all soil-disturbing activities, including, but not limited to new and/or improved access and spur roads;
- The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as crossings or public storm drains by the right-of-way and access roads);
- BMPs to protect drainage structures, such a public storm drains, downstream of soil disturbance activities as well as to prevent loss of topsoils and erosion during construction (See BMP SOIL-01 through -07);
- Design features to be implemented to minimize erosion during construction;
- If soil cement is proposed, the specific locations must be defined in this Plan, and evidence of approval by the appropriate jurisdiction shall be submitted to the CPUC and BLM prior to use;
- If design features include the use of retaining structures and/or walls, the design of the features shall be consistent with MM VIS-06 (under Section 2.1.6 above) to use structure type to match the existing structures in the area and reduce form contrast;
- The location and type of BMPs that would be installed to prevent off-site sedimentation;
- Specification for the implementation and maintenance of erosion control measures and description of the erosion control practices, including appropriate design and installation details;

- Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC.

The locations requiring erosion control/SWPPP corrective actions/repairs shall be tracked by the Applicant, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the Federal California Construction General Permits. The inspection reports shall be maintained and kept in their respective SWPPP, kept on site as required by the Federal and State Construction General Permits, and made available to the RWQCB, CPUC, BLM, counties, local municipalities, and tribal governments, on request. Additionally, an Annual Report shall be filed for each reporting period in compliance with the Federal and California Construction General Permit reporting requirements.

The Applicant shall submit to the CPUC and the BLM any grading plans that define the locations of the specific features listed.

The Applicant shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in any soil-disturbance or construction activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Stormwater Discharges Associated with Construction Activities (General Permit) from the applicable RWQCBs, and the Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land.

Prior to ground disturbance in stream channels or other waters jurisdictional to the State of California or the Federal Government, the Applicant shall obtain a Streambed Alteration Agreement from the CDFW, a Section 404 permit from the ACOE, and a CWA Section 401 certification from the SWRCB.

MM GEO-CEQA-2 Implementation

Responsible Party: The Applicant shall develop the Erosion Control Plan and ensure that it is implemented throughout construction activities. The Applicant shall also be responsible for obtaining all necessary permits related to erosion and water quality control.

Timing: The Erosion Control Plan shall be developed at least 60-days prior to construction and shall be implemented throughout all construction activities. Any permits required for the Project shall be obtained prior to the start of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop the Erosion Control Plan in conjunction with the SWPPP required for the Project. The Applicant shall keep on file any corrective actions related to erosion control and the SWPPP and submit these records to the RWQCB, CPUC, BLM, and any applicable counties, local municipalities, or tribal governments upon request. The Annual Report shall be developed and filed by the Applicant for each reporting period. Any permits required shall be developed by the Applicant and submitted to the applicable agency for approval. The Applicant shall maintain a record of all permits and associated approvals to be kept on file.

Standards for Success: The Project will comply with Federal and California Construction General Permit reporting requirements and any stipulations of applicable permits related to erosion control or the SWPPP.

2.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential impacts to human health and the environment from preexisting hazardous materials, hazardous materials used or generated during construction and decommissioning, and hazardous materials generated during operation and maintenance of the Project. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

As disclosed in Section 4.13 of the TES (BLM 2019), the primary impact from hazards and hazardous materials would be the use of hazardous materials during construction, resulting from leaks and spills and potential effects to workers and the public, as well as potential contamination of surrounding soils, the atmosphere, surface waters, and groundwater.

2.8.1 Thresholds and Methodology

Existing conditions described in Section 3.13 of the TES (BLM 2019) have been evaluated with regard to their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The evaluation of Project impacts is based on Section 4.13 of the TES and the significance criteria established by Appendix G of the CEQA Guidelines.

2.8.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to hazards and hazardous materials under CEQA.

- **APM HAZ-01: Hazardous Substance Control and Emergency Response.** DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable.

- Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.
- All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:
- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.
  - Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

DCRT would complete its Emergency Action Plan Form as part of Project tailgate meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailgate information.

APM TT-01: Traffic Coordination. Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project. This plan would also include measures/protocols for aviation, including helicopter use, coordination with local air traffic control, and a Congested Area Plan, pursuant to FAA regulations.

APM WQ-01: SWPPP Development and Implementation. Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent

contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR 112.

The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following:

- defining ingress and egress within the Project site
- implementing a dust control program during construction
- properly containing stockpiled soils

Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins.

Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized.

The Plan would be updated during construction as required by the SWRCB and ADEQ. The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit:

- stormwater team qualifications and contact information
- identification of operators
- nature of construction activities
- sequence and estimated dates of construction activities
- site description
- site map(s)
- receiving waters
- control measures to be used during construction activity
- summary of potential pollutant sources
- use of treatment chemicals pollution prevention procedures, including spill prevention and response and waste management procedures
- **APM HAZ-02: Fire Avoidance and Suppression.** Per the FPP for the Project: DCRT would select a welding site that is void of native combustible material and/or would clear such material for 10 feet around the area where the work is to be performed. DCRT would follow its standard practice for clearing in wildland areas. Project personnel would be directed to drive on areas that have been cleared of vegetation,

park away from dry vegetation, and carry water, shovels, and fire extinguishers in times of high fire hazard. DCRT would also prohibit trash burning. Additionally, fire-suppression materials and equipment would be kept adjacent to all areas of work and in staging areas and would be clearly marked.

- **BMP PH&S-02.** An FPP would be developed for the Project.

- **APM WQ-02: Worker Environmental Awareness Program Development and Implementation.** The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs and Hazardous Substance Control and Containment and Emergency Response Plan.

- **BMP HAZ-03: Equipment & Material Inventory.** DCRT would provide the BLM with an inventory of equipment and materials to cover each hazardous material used at any time during the life of the Project, updating as additions to equipment and materials are made. Appropriate equipment and materials would follow specific recommendations for individual Haz Mat types in BLM Handbooks, EPA guidelines, and from the California Department of Toxic Substance Control (DTSC).

- **APM WQ-03: Vehicles and Equipment Fueling and Maintenance.** Vehicle and equipment fueling and maintenance operations would be conducted in designated areas only; these areas would be equipped with appropriate spill control materials and containment.

- **BMP HAZ-04.** DCRT would provide the BLM with a Pesticide/Herbicide Use Proposal, outlining the pesticides and herbicides that would be proposed for use on the Project, demonstrating conformance with BLM requirements, and seeking preapproval before use. Only BLM-approved products from the approved California herbicide list would be used in California.

2.8.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to hazards and hazardous materials are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-SW-6.** In addition to the applicable required governmental safeguards, third party activities will implement up-to-date standard industry construction practices to prevent toxic substances from leaching into the soil.

- **CMA LUPA-SW-7.** Prepare an emergency response plan, approved by the BLM contaminant remediation specialist, that ensures rapid response in the event of spills of toxic substances over soils.

- **CMA LUPA-BIO-9.** Implement the following general LUPA CMA for water and wetland dependent resources:

  - Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:

    - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.

    - Hazardous material leaks, spills, or releases will be immediately cleaned, and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.

    - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.

  - Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:

    - Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.

    - Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.

    - Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.

    - Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.

    - Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.

- Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.

- **CMA DFA-VPL-BIO-FIRE-1.** Implement the following standard practice for fire prevention/protection:
  - Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site

2.8.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant hazards and hazardous materials impacts if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

2.8.5 Hazards and Hazardous Materials Analysis

Impact HAZ 1 - Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant with Mitigation

During both construction and operation of the Project components, hazardous materials including oils, lubricants, fuels, and other substances would be transported, used, and disposed as waste. Accidental releases or spills could result in exposure of the public to hazards, thus resulting in a potential impact prior to mitigation. Larger quantities of hazardous materials would exist as fuel stored at staging yards. Fuels and other hazardous materials would be stored in designated areas at staging yards, away from drainage areas and ignition hazards, such as electrical outlets or overhead hazards, to the extent feasible. Fuels would be stored in 55-gallon drums or aboveground storage tanks with capacity up to 10,000 gallons. Fuel would also be stored and transported on mobile refuelers that would travel to individual work sites and staging yards to refuel equipment. Secondary containment would be provided for storage tanks containing 55-gallons or more, such as spill trays, lined basins, double-walled tanks, or other containment devices.

If a release were to occur, it would most likely result from an accidental spill or other unauthorized release during work site grading, pole installation, or during conductor pulling, splicing, and tensioning. A hazardous materials release could also occur during equipment and vehicle servicing and refueling. Although accidental spills would be unlikely, spilled or leaking hazardous materials would create a significant hazard to the public or the environment and could result in a significant impact. As such, as discussed in Sections 4.13.4 and 4.13.5 of the TES (BLM 2019), during both construction and operation activities, hazardous materials and wastes would be handled, stored, recycled, and disposed of according to applicable manufacturer specifications as well as local, state, and federal regulations, and in accordance with the BMPs listed in the SWPPP, Spill Prevention, Control, and Countermeasures Plan (SPCC Plan), and hazardous materials management programs. Therefore, with implementation of standard manufacturer specifications and local, state, and federal regulations impacts from accidental spill release would be less than significant.

As part of Project permitting and in accordance with APM WQ-01 and CMA LUPA-BIO-9, the applicant would be required to prepare and submit for approval a Project-specific SWPPP to the Colorado River Basin RWQCB under the NPDES permits for stormwater. The SWPPP would include provisions to conduct worker training related to storage, use, and handling of hazardous materials, including fueling and maintenance for vehicles, equipment, and helicopters (although helicopter use is not anticipated in California). The Project-specific SPCC Plan would be submitted to the Hazardous Materials Management Division of the Riverside County Department of Environmental Health. The approved SWPPP and SPCC Plans would be submitted to CPUC and BLM prior to the start of construction. However, because there is a still a potential of hazardous materials release into the environment during construction, MM HAZ-CEQA-1 would be required in order to reduce potential impacts related to hazardous materials release. MM HAZ-CEQA-1 requires the implementation of APMs, BMPs, and CMAs in order to reduce the potential for accidental spill releases and provides measures in case an accidental spill were to occur during construction activities. MM HAZ-CEQA-1 includes the implementation of APMs

HAZ-01, Hazardous Substance Control and Emergency Response; WQ-02, Worker Environmental Awareness Program Development and Implementation; and WQ-03, Vehicles and Equipment Fueling and Maintenance to address potential impacts from handling and emergency release of hazardous materials. Collectively, APMs HAZ-01, WQ-02, and WQ-03 which are included in MM HAZ-CEQA-1 ensure that employees understand what to do in the event of an accidental spill or discovery of previously undiscovered contamination, and that the appropriate agencies are consulted and the applicable laws and regulations for protection of worker safety and the environment are complied with, and therefore, impacts would be reduced to a less than significant level.

Additionally, MM HAZ-CEQA-1 requires implementation of BMPs identified by the BLM in order to reduce potential impacts related to accidental spill release to a less than significant level, which would be implemented including HAZ-03, Equipment & Material Inventory and HAZ-04 which includes the development of Pesticide/Herbicide Use Proposal. This Pesticide/Herbicide Use Proposal would demonstrate DCRT's conformance with BLM requirements regarding pesticide and herbicide use for the Project. This Proposal would allow only BLM approved products to be used during construction, including the use of approved herbicides from the California herbicide list. BMP HAZ-03 would require that DCRT provide the BLM with an inventory of equipment and materials to cover each hazardous material used at any time during the lifetime of the Project. The equipment used for the Project would be in conformance with individual hazardous materials types in the BLM Handbooks, U.S. Environmental Protection Agency (USEPA) guidelines, and from the California DTSC. Additionally, through MM HAZ-CEQA-1 the Project would also be in compliance with CDCA CMAs LUPA-SW-6, LUPA-SW-7, and LUPA-BIO-9 with the implementation of the above APMs and BMPs.

Therefore, impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant with mitigation incorporated.

Impact HAZ 2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant with Mitigation

As described in greater detail above, potential impacts related to hazards and hazardous materials may result from construction, operation, maintenance, and decommissioning of the Project. The Project could include the accidental release of hazardous materials such as fuels, oils, lubricants, and solvents if not managed appropriately. However, as required by the NPDES General Construction Permit, construction activities would be required to adhere to a SWPPP which would include BMPs for the safe handling and storage of hazardous materials during construction. Additionally, as discussed previously in Impact HAZ-1, because there would still be a potential for hazardous materials release during construction, MM HAZ-CEQA-1 would be required in order to reduce potential impacts to a less than significant level. MM HAZ-CEQA-1 includes the implementation of APMs, BMPs, and CMAs during operation and adhere to City, State, and federal regulations which would avoid or minimize the release of hazardous materials into the environment. Specifically, implementation of APM HAZ-01 would avoid or minimize the upset of hazardous materials through the excavation of impacted materials. MM HAZ-CEQA-1 through the implementation of the required APMs, BMPs, and compliance with the

associated CMAs would address potential impacts from release of hazardous materials into the environment and would reduce these potential impacts from the hazardous materials to a less than significant level.

Additionally, there are numerous natural gas pipelines that cross segments in California. Pipeline damage or rupture could occur during construction of the Project by ground-disturbing activities (e.g., grading, trenching, auguring foundation holes, or blasting) which could result in the uncontrolled release of natural gas from a pipeline and/or cause a fire or explosion, thus resulting in a potential impact prior to mitigation. Prior to trenching in city streets, the applicant would coordinate with local jurisdictions to secure excavation and encroachment permits, as required and common industry construction procedures would reduce the likelihood of damaging subsurface utilities, and include notifying other utilities along the proposed alignment via Underground Service Alert prior to ground disturbing activities in the vicinity of a buried utility.

Further, MM HAZ-CEQA-2 would be required which would include requirements for the Project Applicant to uncover or "pothole" existing utility pipelines within 10 feet of Project excavations, including tower structure foundations and underground duct bank or vaults, to ensure that excavation work does not damage the existing utility pipeline. This MM would effectively reduce potential impacts related to hazards that could be encountered during Project construction from existing utility lines in the area. Therefore, implementation of MM HAZ-CEQA-1 and MM HAZ-CEQA-2 would reduce impacts associated with damage or rupture to buried utilities to a less than significant level.

Impact HAZ 3 - Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact

Project construction equipment emissions would include diesel particulate matter (PM2.5), a TAC. Construction could also involve the use of coatings that contain volatile organic compounds (VOCs), another TAC. The emission of VOCs or PM2.5 at concentrations that exceed air quality standards would be a significant impact with respect to this issue if such exceedances occurred within one-quarter mile of a school. The closest existing or proposed school to the Project route within California is Felix J Appleby Elementary School, which is located more than four miles north of the Project route (segment p-15w). Project construction is not expected to involve handling of acutely hazardous materials but may transport and/or store small quantities of hazardous materials necessary in the course of construction activities (e.g., vehicle and/or generator fuels). However, similar to TACs and VOCs, this activity would not occur within one-quarter mile of an existing school. For this reason, the Project would have no impact with respect to exposure of schools to hazardous emissions or hazardous materials.

Impact HAZ 4 - Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less Than Significant – No Mitigation Required

As discussed in Section 3.13.2 of the TES (BLM 2019), an Environmental Data Resources Inc. (EDR) was conducted for the Project area that included over 50 databases including the USEPA

Hazardous Materials Incident Report System, the California "Cortese" Hazardous Waste and Substances Sites List, and the federal listing of Unexploded Ordnance Sites, among numerous others. As discussed in Section 3.13.3.2 (Colorado River and California Zone) and shown in Table 3.13-7 of the TES, no sites that meet the definition of Government Code Section 65962.5 were identified in the government database research within a one-mile wide study area for Segments p15w through p-18 in California. Therefore, impacts would be less than significant.

Operation and maintenance activities would not involve excavation activities near or on an open hazardous site; therefore, it would be very unlikely that a significant hazard to the public or the environment would occur as a result of operation and maintenance activities. Impacts would be less than significant.

Impact HAZ 5 - For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact

In California, the Project's segment p-16 is located approximately 6 miles south of Blythe Airport, a public airport. No impacts related to safety hazard for people residing or working in the Project area would occur.

While the Project is not located within an existing airport land use plan, some segment alternatives fall within the Blythe Municipal Airport influence areas D and E and is subject to the Riverside County Airport Land Use Compatibility Plan (ALUCP). The ALUCP addresses four types of land use compatibility concerns: noise, safety, airspace protection, and overflight.

For safety planning purposes, the ALUCP uses the safety zones (i.e., zones within which potential hazards may occur) defined in the Air Installations Compatible Use Zones prepared by the U.S. Department of Defense for Blythe Municipal Airport. The Project is not located within any of these zones; therefore, there would be no safety hazard for people residing or working in the Project corridor as a result. There would be no impact.

For airspace protection, the ALUCP requires evaluation of compatibility with airspace protection surfaces. Policies of the ALUCP "relies upon regulations enacted by the Federal Aviation Administration and the State of California. The ALUC policies are intended to help implement the federal and state regulations". The Project is located within an area subject to Federal Aviation Regulation Part 77. To be compatible with the ALUCP and to comply with Part 77, the Project would require notification to the FAA through filing of a Form 7460-1: Notice of Proposed Construction or Alteration. The FAA completes an aeronautical study and issues a determination regarding the impact to air navigation. As identified in the required approvals and permits listed in Appendix 1 in the EIS, the applicant will consult with the FAA and incorporate all FAA recommendations to the Project, particularly regarding the use of helicopters (although not anticipated in the California portions of the Project) and the placement of marker balls and tower lights. There would be no safety hazard for people residing or working in the Project corridor because the applicant would comply with ALUCP and FAA airspace projection requirements.

Impact HAZ 6 - For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Less than Significant with Mitigation

In California, the Project's segment p-15w is located approximately 4 miles south of CYR Aviation, a private airstrip. Although not anticipated in the California portions of this Project, helicopter use and transport could be utilized during Project construction. The use of helicopters near these helipads and private airports could potentially create a hazard, resulting in a significant impact prior to mitigation.

MM TRANS-CEQA-2 would be implemented in order to ensure hazards resulting from potential helicopter use in Segment p-15w is reduced to a less than significant level. MM TRANS CEQA-2 includes the development and implementation of a Traffic, Transportation, and Access Management Plan which includes usage restrictions imposed by the FAA and Caltrans. In addition, MM TRANS-CEQA-2 requires the Project Applicant and/or the construction contractor to coordinate with local air traffic control and comply with applicable FAA regulations regarding helicopter use to prevent conflict with air traffic generated by local airports. As required, a Congested Area Plan will be prepared under the Traffic, Transportation, and Access Management Plan, based upon actual helicopter usage, pursuant to FAA regulations. Therefore, with the implementation of MM TRANS-CEQA-2, impacts related to safety hazard for people residing or working in the Project area would be less than significant.

Impact HAZ 7 - Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant with Mitigation

Temporary road or lane closures may be necessary during Project construction to ensure safety of the public and workers. Temporary road or lane closures could impair implementation of an emergency response plan or evacuation plan or disrupt emergency vehicle traffic and access. Closure of these facilities for conductor stringing or installation of guard structures would cause a temporary interruption of traffic flow on the local highways. These temporary closures would potentially cause a significant impact on the routes available for emergency vehicles and emergency evacuation routes prior to mitigation

MM TRANS-CEQA-2 would be required in order to ensure that impacts related to emergency access and emergency evacuation routes are maintained at a less than significant level throughout Project construction. MM TRANS-CEQA-2 requires the development and implementation of a Traffic, Transportation, and Access Management Plan which includes specific measures for maintaining access for emergency personnel and vehicles throughout Project construction and includes continued coordination with the appropriate emergency agencies for Project related detours and/or road closures. This measure would ensure that emergency response times are not unintentionally inhibited by Project construction activities. Therefore, with the implementation of MM TRANS-CEQA-2, impacts would be less than significant.

Impact HAZ 8 - Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant with Mitigation

As discussed in Section 3.14.3 of the TES (BLM 2019), the risk of wildfire in the Project area is related to weather, fuels, ignition potential, and fire history (fire environment). In California, the Project is located within “moderate” and “un-zoned” fire hazard severity zones, as classified by CAL FIRE. Section 4.14.4 of the TES indicates that the Project Area has been subject to historical fires, largely caused by humans, and primarily located along the I-10 corridor and around Blythe. As discussed in Section 4.14.4.1 of the TES, Project-related increases in fire risk during construction activities are associated with potential ignitions resulting from certain construction activities (e.g., blasting, welding, refueling, and sparks from construction equipment). As discussed in Section 4.14.5 of the TES, Project-related increases in fire risk during operations are associated with potential equipment failures, operations and maintenance activities that could ignite flammable material (e.g., refueling, welding, blasting), electrical arcing, bird-strikes, or vandalism. Transmission line relays and circuit breakers that rapidly detect faults and cut off power to avoid shock and fire hazards help reduce fire risk during the operations phase. Section 4.14.5 of the TES also identifies increases in fire risk associated with the presence of transmission lines, which can hinder firefighting operations, and notes that fire risk increases during decommissioning activities would be similar to those during Project construction. Finally, Section 4.14.11.1 of the TES states that the Project presents an increased source of potential ignitions for the life of the Project.

Without implementation of fire prevention actions, Project-related impacts associated with wildland fires during construction, operations, and decommissioning would be considered significant. Therefore, MM HAZ-CEQA-1 would be required and would include the development and implementation of a Project FPP (which is further required through APM HAZ-02, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1). This FPP would be developed in consultation with and approved by local fire agencies and would include measures and procedures to prevent fires throughout all construction activities for the Project. APM HAZ-02 specifically, identifies that the Applicant would minimize ignitions through vegetation clearing, prohibition of trash burning, and carrying of fire suppression tools during high fire hazard periods. Therefore, with implementation of MM HAZ-CEQA-1, impacts related to wildland fire hazards due to Project construction, operations, and decommissioning activities would be less than significant.

2.8.6 Hazards and Hazardous Materials Mitigation

See **MM TRANS-CEQA-2** under Section 2.17.6 (Traffic and Transportation).

MM HAZ-CEQA-1: Implement Hazards and Hazardous Materials Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.8.2 and 2.8.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance, including construction,

operations, maintenance, and decommissioning-related activities to avoid or minimize Project related impacts to hazards and hazardous materials. These APMs, BMPs, and CMAs include; APM HAZ-01, APM TT-01, APM WQ-01, APM HAZ-02, BMP PH&S-02, APM WQ-02, BMP HAZ-03, APM WQ-03, BMP HAZ-04, CMA LUPA-SW-6, CMA LUPA-SW-7, CMA LUPA-BIO-9, CMA DFA-VPL-BIO-FIRE-1.

If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts.

For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following AMPs and BMPs have been modified to meet CEQA requirements:

- **APM T&T-01: Traffic Coordination.** As discussed in this APM, a Traffic, Transportation, and Access Management Plan would be developed for the Project. The details of this Traffic, Transportation, and Access Management Plan, as well as the correlation with a Congested Area Plan, are further discussed under MM TRANS-CEQA-2.

- **APM HAZ-02: Fire Avoidance and Suppression, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1.** As discussed in APM HAZ-02, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1, an FPP shall be developed and implemented for the Project throughout construction, and operation and maintenance. The Applicant shall develop a Project FPP in consultation with the appropriate local fire agencies at least 30-days prior to the start of construction activities. The Plan shall cover the construction and operations/maintenance phases of the Project. The Applicant shall monitor Project-related activities to ensure implementation and effectiveness of the Plan. The final Plan would be approved by the consulted fire agencies prior to the initiation of construction activities and shall be implemented during all Project-related activities by the Applicant. Information contained in the Plan and location of fire-suppression materials and equipment shall be included as part of the Worker Environmental Awareness Program discussed in APM BIO-01. Successful implementation of this Plan shall result in a less than significant impact to the potential for construction-related fires. At minimum, the Plan shall include the following:

    - Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, hot work restrictions, and timing of vegetation treatment or maintenance. Where necessary, vegetation management or clearing necessary to mitigate fire risk shall supersede other measures for vegetation protection and avoidance. Applicable

permitting, compensation, and mitigation resulting from such activity shall be the responsibility of the Applicant.

- Proper use of construction, maintenance, and decommissioning equipment.
- Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days.
- Fire coordinator and fire patrol roles and responsibilities.
- Worker training for fire prevention, initial attack firefighting, and fire reporting.
- Emergency fire suppression equipment/tools inventory and maintenance.
- Emergency communication, response, and reporting procedures.
- Coordination with local fire agencies to facilitate emergency access through the Project site.
- Emergency contact information.
- Compliance with applicable wildland fire management plans and policies established by state and local agencies.
- Other information as required by responsible and consulted agencies.

Responsible Party: The Applicant shall develop the FPP and ensure that it is implemented throughout construction activities.

Timing: The Applicant shall develop the FPP at least 30-days prior to the start of construction activities. The FPP shall be implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall ensure that the information in the FPP is included in the Worker Environmental Awareness Program. Documentation of any Red Flag Warnings or High to Extreme Fire Danger days shall be kept on file and submitted to the applicable local fire agencies as well as the BLM and CPUC.

Standards for Success: Construction impacts related to fires is reduced to a less than significant level and no fires are started as a result of construction activities.

- **BMP HAZ-04.** The Pesticide Use Proposal would be developed in accordance with MM VEG-CEQA-1 (See Section 2.4.6).

MM HAZ-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction, operations, maintenance, and decommissioning of the Project.

MM HAZ-CEQA-2: Identify and Pothole Existing Utility Pipelines.

The Applicant shall be responsible for the implementation and enforcement of this MM by identifying any existing utility pipelines along the Project alignment through database searches, coordination with public utility agencies, and/or reviewing historic documents during the design phase of the Project. If existing utility pipelines are identified during this search, the Applicant shall then uncover or "pothole" any existing utility pipelines within 10 feet of Project excavations, including tower structure foundations and underground duct bank or vaults, prior to the start of any earth moving activities in a particular area to ensure that excavation work does not damage the existing utility pipeline. The Applicant shall monitor Project construction activities to ensure public utilities remain intact and are not disturbed by construction of the Project. If undiscovered or undocumented utilities are encountered during construction, all Project work shall stop in that location and the Applicant shall notify the appropriate utility agency within 24-hours of discovery. Project work may resume once the area is cleared by the Applicant and the public utility agency.

MM HAZ-CEQA-2 Implementation

Responsible Party: The Applicant shall be responsible for identifying any existing utility pipelines along the Project alignment and uncover any of these existing facilities within 10 feet of Project excavations. The Applicant shall be responsible that any existing utility pipelines are not disturbed during construction activities.

Timing: Database searches, coordination with public utility agencies, and review of historic documents in order to identify existing utilities within the Project area shall be completed prior to the start of construction activities. Monitoring of public utilities within the Project area shall occur throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall document any public utilities discovered during database searches, consultation, and review of historic documentation. The Applicant shall also keep records of all monitoring activities for the utility pipelines, including any necessary actions taken to avoid these utilities or document any previously unknown utilities discovered during construction. If undiscovered or undocumented utilities are encountered during construction, the Applicant shall notify the appropriate utility agency within 24-hours of discovery.

Standards for Success: Any Project work that will occur within the vicinity of a utility pipeline shall remain undisturbed from construction activities.

2.9 ELECTROMAGNETIC FIELDS

This section describes the potential impacts to human health and the environment from electromagnetic fields (EMF) during Project operations. EMF is a term used to describe electric and magnetic fields that are created by electric voltage (electric field) and electric current (magnetic field). Power frequency EMF are a natural consequence of electrical circuits and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information.

CPUC Decision 06-01-042 (January 27, 2006), affirmed the Commission's November 1993 CPUC Decision 93-11-013 that concluded that the potential health effects associated with EMF exposure are too speculative to allow the evaluation of impacts or the preparation of MMs.

Given the uncertainty of EMF effects and the inability of scientific investigations to identify any unsafe level or component of EMF exposure, potential EMF impacts are appropriately addressed as speculative in accordance with the California Environmental Quality Act Guidelines, Section 15145:

> "If after thorough investigation a particular impact is found to be too speculative for evaluation, the conclusion shall be noted, and the discussion terminated."

While CPUC did not identify a significant scientifically verifiable relationship between EMF exposure and negative health consequences, CPUC Decision 06-01-042 directs the CPUC's Energy Division to pursue and review all available studies regarding EMF and to review scientific information and report on new findings. Should such studies indicate negative EMF health impacts, the Commission will reconsider its EMF policies, and open a new rulemaking if necessary.

Pursuant to the PUC's November 1993 decision, affirmed on January 27, 2006, requires the project applicant to implement the following measure:

1) No-cost and low-cost steps to reduce EMF levels: When regulated utilities design new projects or upgrade existing facilities, approximately four percent of the project's budget may be used for reducing EMFs. The PUC did not set specific reduction levels for EMFs. It was inappropriate to set a specific numerical standard until a scientific basis for doing so exists.

To ensure Project compliance with CPUC Decision 93-11-013, DCRT will incorporate “no cost” and “low cost” magnetic field reduction steps in the proposed transmission and substation facilities plans and designs to ensure that approximately four percent of the Project's budget may be used for reducing EMFs.

The following measures may be available to reduce the magnetic field strength levels from the regulated transmission lines and substations of the Project:

- Increase distance from conductors and equipment;
- Reduce conductor spacing;
- Minimize current, and;
- Optimize phase configuration.

In order to be in conformance with the above-mentioned CPUC decision regarding EMF's MM EMF-CEQA-1 would be implemented and would require the preparation of a Field Management Plan (FMP) to show no-cost/low-cost measures and identify any appropriate EMF reduction measures to be implemented into the Project. This MM would reduce any potential impacts related to EMF to a less than significant level.

2.9.1 Electromagnetic Fields Mitigation Measures

MM EMF-CEQA-1: Field Management Plan.

The Applicant will prepare an FMP at least 30-days prior to the start of construction activities to show implementation of the no-cost/low-cost measures. The FMP shall be submitted to the CPUC for review and to be kept on file and shall be implemented throughout all construction phases of the Project.

The FMP will include the following Project information:

- A description of the Project (cost, design, length, location, etc.), and enhanced by updated Project designs and plans;
- A description of the surrounding land uses using EMF reduction priority criteria classifications;
- No-cost options to be implemented;
- Priority areas where low-cost measures are to be applied, and;
- Measures considered for magnetic field reduction, percent reduction and cost.

This FMP will define EMF reduction priority criteria classifications for the Project's alignment and which EMF reduction options were identified. Project EMF reduction design criteria will be presented, including a description of how the Project alignment is proposed to be treated equivalently or why low-cost measures cannot be applied to this Project due to cost, percent reduction, equivalence, secondary environmental impacts, or other reasons. The ultimate cost of the EMF reduction elements incorporated into the Project will be qualified and compared to the CPUC's stated goal of approximately 4 percent of the Project's budget.

MM EMF-CEQA-1 Implementation

Responsible Party: The Applicant shall be responsible for the development and implementation of the FMP.

Timing: The FMP shall be prepared at least 30-days prior to the start of construction. The FMP shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop and submit the FMP to the CPUC and implement any magnetic field reduction measures relative to the CPUC's stated goal of approximately 4 percent of the Projects cost.

Standards for Success: EMF impacts are reduced to a less than significant level.

2.10 HYDROLOGY AND WATER QUALITY

This section describes the impacts to hydrology and water quality associated with the construction, operation, and maintenance of the proposed transmission line, substations, and ancillary facilities in terms of CEQA significance thresholds disclosed below in Section 2.10.4 below. As disclosed in Section 4.19 of the TES (BLM 2019), impacts to water quality have the potential to occur from a release of contaminants to surface waters and/or shallow groundwater during construction. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.10.1 Thresholds and Methodology

Existing conditions described in Section 3.19 TES (BLM 2019) have been evaluated with regard to their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The evaluation of Project impacts is based on Section 4.19 of the TES and the significance criteria established by Appendix G of the CEQA Guidelines.

Impacts to water resources would occur if the following were to occur, as discussed in Section 4.19.2.3 of the TES:

- Predicted violation of federal and/or state water quality standards due to contamination of surface water or groundwater due to erosion, storm water runoff, or spill.
- Predicted impacts to water rights or water usage by humans, aquatic wildlife, or plants, designated or otherwise.
- Physical alterations to channels, existing drainage patterns, floodplains, water conveyances, or wells, or indirect alterations to adjacent properties due to erosion or siltation.
- Impacts that would violate Section 404 of the Clean Water Act or Section 10 of Rivers and Harbors Act.
- Flooding or floodplain impacts from construction activities or structure placement.

2.10.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following

would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to hydrology and water quality under CEQA.

- **APM WQ-01: SWPPP Development and Implementation.** Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following:

    - defining ingress and egress within the Project site
    - implementing a dust control program during construction
    - properly containing stockpiled soils

  Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the SWRCB and ADEQ. The Plan would include the following components, in accordance with SWRCB and ADEQ requirements for coverage under the General Permit:

    - stormwater team qualifications and contact information
    - identification of operators
    - nature of construction activities
    - sequence and estimated dates of construction activities
    - site description

- site map(s)
- receiving waters
- control measures to be used during construction activity
- summary of potential pollutant sources
- use of treatment chemicals
- pollution prevention procedures, including spill prevention and response and waste management procedures

- **APM WQ-02: Worker Environmental Awareness Program Development and Implementation.** The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs and Hazardous Substance Control and Containment and Emergency Response Plan.

- **APM WQ-03: Vehicles and Equipment Fueling and Maintenance.** Vehicle and equipment fueling and maintenance operations would be conducted in designated areas only; these areas would be equipped with appropriate spill control materials and containment.

- **BMP WQ-04: Non-petroleum Dust Palliatives**. Palliatives used for dust control would be non-petroleum products in addition to non-toxic, as specified in AQ-01.

- **BMP WQ-05: Water Use**. Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the Project shall be solely for the beneficial use of the Project or its associated mitigation and remediation measures, as specified in approved plans and permits.

- **BMP WQ-06: Avoidance of Hydrologic Alterations**. Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they would dissipate by percolation into the landscape. All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the Project area, or specific MMs shall be implemented that would minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate.

- **BMP WQ-07: Structures in Floodplains.** No permanent structures would be placed in floodplains that are narrower at the ROW crossing than the typical span width of 1,200 feet (i.e., it is assumed that such floodplains could be spanned and avoided).

2.10.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to hydrology and water quality are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-SW-1.** Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity specific NEPA analysis.

- **CMA LUPA-SW-5**. Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings "Soil Resources," "Surface Water," and "Groundwater Resources," may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates:

  - The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.

- **CMA LUPA-SW-15.** Surface water diversion for beneficial use will not occur absent a state water right.

- **CMA LUPA-SW-18.** Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.

- **CMA LUPA-SW-20.** After application of applicable avoidance and minimization measures, all remaining unavoidable residual impacts to surface waters from the proposed activity shall be mitigated to ensure no net loss of function and value, as determined by the BLM.

- **CMA LUPA-SW-21**. Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.

2.10.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant hydrology and water quality impacts if it would:

a. Violate any water quality standards or waste discharge requirements?

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f. Otherwise substantially degrade water quality?

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j. Inundation by seiche, tsunami, or mudflow?

2.10.5 Hydrology and Water Quality Analysis

Impacts to hydrology and water resources would be considered significant if the Project fulfills the CEQA impact statements listed below. Incorporating the APMs described above in Section 2.10.2 of this appendix would ensure compliance with existing water quality regulations, as well as implementation of standard operating procedures that prevent impacts. Potential hydrology impacts are summarized below.

Impact WQ 1 - Violate any water quality standards or waste discharge requirements?

Less than Significant with Mitigation[6]

As discussed in Section 4.19.4.1 of the TES (BLM 2019), the water quality standards applicable to the Project consist of the water quality objectives contained in the Water Quality Control Plan for the Colorado River Basin (Basin Plan), as well as those contained in NPDES permits and waste discharge requirements pertinent to construction activities and stormwater runoff. Impacts related to water quality standards would include construction-related pollutants of concern such as sediment, trash/debris, and fuels/fluids used to maintain and refuel vehicles and equipment. These impacts have the potential to be significant prior to mitigation.

As such, MM WQ-CEQA-1 would be required and would include implementation of APMs, BMPs, and CMAs related to water quality. Specifically, APM WQ-01 would be required under MM WQ-CEQA-1 and would reduce the potential for these pollutants to be present in stormwater runoff by requiring the applicant to obtain a NPDES Construction General Permit. As part of obtaining a NPDES Construction General Permit, the applicant would be required to design and implement a SWPPP, as outlined in APM WQ-01. Additionally, MM GEO-CEQA-2 (included under Section 2.7.6 above), would be required and would include the development and implementation of an Erosion Control Plan in conjunction with the development of the SWPPP required for the Project. The SWPPP and the Erosion Control Plan would incorporate management practices for erosion and sedimentation controls that are designed to prevent soil particles from detaching and being transported off-site. Examples of erosion control measures include use installation of temporary silt fences and other containment features (including gravel bags and fiber rolls) surrounding work areas to prevent the loss of soil during rain events and other disturbances. Sedimentation controls are structural measures intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas. Examples of sediment control measures include utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains. The SWPPP would also include pollution prevention procedures, including spill prevention and response and waste management procedures.

In addition, APMs HAZ-01 (See Section 2.8.2 under Hazards and Hazardous Materials above), WQ-02, and WQ-03 would collectively ensure that employees understand what to do in the event of an accidental spill or discovery of previously undiscovered contamination, and that the appropriate agencies are consulted and the applicable laws and regulations for protection of worker safety and the environment are complied with.

The existing CWA Section 303(d) impairment designation of the Colorado River (for toxicity) would not be affected by any of the Project activities because the impairment listing is for toxicity from an unknown source or sources, and because the APMs and BMPs to be implemented as part of the Project through MM WQ-CEQA-1. For these reasons, impacts related

[6] The DEIS evaluated the whole of the action but erroneously stated no impact. The impact determination has been revised to reflect the correct impact determination commensurate with the impacts discussion and consistent with the analysis in the DEIS.

to discharge of toxic substances including construction-related fuels, would be reduced to a less than significant level.

Therefore, the overall impact to water quality standards would be less than significant with MM WQ-CEQA-1 and MM GEO-CEQA-2 incorporated.

Impact WQ 2 - Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant – No Mitigation Required

Project impacts related to groundwater supplies could occur if construction or operation of the Project would require substantial amounts of water, which the local groundwater source could not adequately supply. As evaluated under Impact PUSVC 2 below (See Section 2.15.4 under Public Services and Utilities below), water may be obtained from municipal sources, trucked in by a water supply vendor, or derived from local wells. Even under the conservative assumption that the totality of construction water demand of 56,766,542.6 gallons, equivalent to about 174 acre-feet, would be sourced from groundwater wells in the local area, construction activities would not substantially deplete groundwater supplies or interfere with groundwater recharge. This is because these demands would be distributed across the length of the alignment, and over the 2-year period of construction. Furthermore, the applicant has committed to BMP WQ-04 which would employ non-petroleum-based dust palliatives. Palliatives used for dust control would be non-petroleum products in addition to non-toxic, as well as BMP WQ-05, which would prevent the wasteful use of water. These measures would further ensure that water use for construction remains minimal.

When distributed spatially and temporally, the amount of water required from any one source would be minimal and temporary. Compared to the volume of water stored within the groundwater basins, 174 acre-feet over a two-year period is negligible. The Palo Verde Valley Groundwater Basin (Department of Water Resources [DWR] Basin No. 7-38) and the Palo Verde Mesa Groundwater Basin (DWR Basin No. 7-39) are estimated to have an existing storage capacity of 4,960,000 acre-feet and 6,840,000 acre-feet, respectively. Furthermore, they are both classified by the DWR as having a “low” priority with respect to sustainable groundwater management, based on the low population density, low or negative growth projections, and/or low numbers of private and public supply wells (DWR 2014). In other words, existing demands on groundwater underlying these basins are not causing significant and long-term groundwater overdraft. Any pumping depression caused by withdrawal of groundwater to support construction would be minor, temporary, and recover once pumping ceases and construction begins on the next segment.

Finally, the Project’s impacts on groundwater recharge would be negligible. Impervious surfaces constructed for tower bases and/or substation equipment would be isolated from other impervious surfaces, disconnected from other impervious Project components, and would not prevent the ability for stormwater runoff to percolate into the soils immediately adjacent to structures. CMA LUPA-SW-21 further ensures that impervious structures are designed in a

manner that directs stormwater to areas that allow percolation into the underlying groundwater aquifer.

For these reasons, the impact of the Project on groundwater resources would be less than significant.

Impact WQ 3 - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than Significant with Mitigation

Section 4.19.7 of the TES (BLM 2019) discusses the variations in the number of canal/ditch and ephemeral drainage crossings, and variations in the lengths of non-wetland WOUS and high-risk floodplains among alternative routes (Table 4.19-5 of the TES). Impacts from Project-related alterations to these drainages could result in increased erosion on- or off-site prior to mitigation. As such, MM WQ-CEQA-1 would be required in order to reduce potential impacts to these drainages. MM WQ-CEQA-1 would include implementation of APMs, BMPs, and CMAs, and specifically, BMP WQ-06, BMP WQ-07, and CMA LUPA-SW-1, in order to avoid or substantially reduce the hydrologic alterations necessary for construction and operation of the Project. Where it is feasible to do so, floodplain would be avoided, and in nearly all circumstances, alterations to the course or stream of a river or wash would not occur. The only location where a floodplain would be affected is the Colorado River floodplain. However, the presence of transmission structures with the floodplain of the Colorado River does not affect the probability, depth or extent of flooding. This is because the nature of flooding is shallow and slow-moving (i.e., overbank), and because the transmission structures would occupy an insufficient portion of the cross-sectional area of the floodplain to affect flow (i.e., flood water would go around the towers and/or poles). With regard to ephemeral washes, the typical span width of 1,200 feet is wide enough that permanent impacts to all of the small-scale washes could be avoided.

The ephemeral nature of almost all the streams study area would reduce the likelihood that an inadvertent impact would be sustained or conveyed downstream (i.e., reduced likelihood that flow would be present at the time of any release) and is therefore less than significant.

Therefore, the overall Project impact to alterations to existing drainage patterns of the site or areas that could result in substantial erosion or siltation on- or off-site would be less than significant with MM WQ-CEQA-1 incorporated.

Impact WQ 4 - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant – No Mitigation Required

Construction activities should not substantially alter the existing drainage pattern of the site or area, the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-site or off-site. Levees, dikes, and upstream dams

control floods in developed areas of the Project and along the Colorado River Valley. While undeveloped desert environments are subject to seasonal flooding or ponding over extensive areas, the degree of development associated with transmission line structures and associated access roads would not alter the course of a stream or river. Impervious surfaces at the bases of transmission line structures would incrementally increase runoff, as could the compacted soils in the access roads. Neither of these alterations to ground cover would occur in a concentrated enough pattern to substantially alter the existing drainage pattern of the site or area. The impact is therefore less than significant.

Impact WQ 5 - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant with Mitigation[7]

Construction-related ground disturbance and the resultant potential for increased erosion and sedimentation via stormwater runoff could impact nearby surface waters, as discussed in Section 4.19.4.1 of the TES (BLM 2019), and thus could result in a potential impact prior to mitigation. As such, MM WQ-CEQA-1 would be required in order to reduce these potential impacts to a less than significant level. MM WQ-CEQA-1 include the implementation of control measures, APMs, and BMPs (Appendix 2A) to minimize the risk of polluted runoff from Project construction. It is assumed that the (SWPPP (APM WQ-01) would appropriately specify locations for these measures and verify proper implementation such that they would stabilize disturbed ground, control erosion from disturbed areas, and prevent sediment from entering surface waters. Additionally, MM GEO-CEQA-2 would also be required and would include the development and implementation of an Erosion Control Plan for the Project that would effectively reduce the risks associated with erosion and movement of sediment in stormwater to a less than significant level. As such, there are no predictions that any violation of federal and/or state water quality standards, or any hindrance to any water users, would occur due to erosion or sedimentation.

Furthermore, the Project does not appreciably increase the volume of runoff and is primarily located in open space and agricultural areas that lack existing or planned stormwater drainage systems, which consist of engineered conveyances such as canals, storm drainpipes, culverts, etc.). Where the Project crosses agricultural areas, which have informal (non-engineered) drains and ditches, such features would be spanned, and pole//tower footings would not be located so as to affect their capacity.

Therefore, the overall impact related to the Project's contribution to runoff water which could exceed stormwater capacity or provide substantial additional sources of polluted runoff would be less than significant with MM WQ-CEQA-1 and MM GEO-CEQA-2 incorporated.

[7] The original analysis acknowledged required APMs and BMPs, which are now implemented through CEQA MMs; thus, the original impact conclusions were not appropriately stated as "no impact". Although the significance conclusion has changed to Less than Significant with Mitigation, the stated impacts are not more severe.

Impact WQ 6 - Otherwise substantially degrade water quality?

Less than Significant with Mitigation[7]

As discussed in Impact WQ-1 above, MM WQ-CEQA-1 would be required to reduce potential impacts related to water quality to a less than significant level. MM WQ-CEQA-1 includes the implementation of water quality APMs, BMPs, and CMAs which includes the development of the SWPPP(s) (APM WQ-01) required for the Project. This MM would ensure that APMs, BMPs, and CMAs are properly implemented such that they would stabilize disturbed ground, control erosion from disturbed areas and prevent sediment from entering surface waters. Implementation of MM WQ-CEQA-1 would effectively minimize risks associated with degradation of water quality, therefore impacts would be less than significant with mitigation incorporated. Aside from the water quality issues addressed under Impact WQ-1, there are no other water quality issues pertinent to the Project.

Impact WQ 7 - Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact

Housing is not a component of the Project, and therefore, no impacts would occur.

Impact WQ 8 - Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less Than Significant – No Mitigation Required

During construction, equipment would operate in a FEMA designated 100-year flood hazard Area, but it is unlikely that construction activities would impede or redirect flood flows during a major storm event. The average span between transmission line poles would be 1,200 feet. Per APM WQ-07, floodplains would be avoided, and in nearly all circumstances, the impedance or redirection of flood flows due to Project components would not occur. The only location where a FEMA designated 100-year flood hazard area would be affected is the Colorado River floodplain. However, the presence of transmission structures with the floodplain of the Colorado River does not affect the probability, depth or extent of flooding. This is because the nature of flooding is shallow and slow-moving (i.e., overbank), and because the transmission structures would occupy an insufficient portion of the cross-sectional area of the floodplain to affect flow (i.e., flood water would go around the towers and/or poles).

FEMA has not mapped floodplains on the Palo Verde Mesa, and where washes cross the alignment. Nevertheless, with regard to ephemeral washes, the typical span width of 1,200 feet is wide enough that permanent impacts to all of the small-scale washes could be avoided. Construction disturbance and permanent access roads would also likely cross floodplains which could redirect flood flows; however, these roads would not be hard-surfaced and appropriate controls on sediment and stormwater would be implemented during construction. It is assumed that any of these floodplain disturbances would be located in sheetwash areas where any potential flooding would be shallow and water velocities low. As such, Project facilities would not impede flows, collect debris, or cause an increase in flooding area.

For these reasons, the impacts of the Project on the probability, depth or extent of floodplains would be less than significant.

Impact WQ 9 - Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less Than Significant – No Mitigation Required

During construction, workers could be subjected to potential risks associated with flash flooding in the desert during infrequent major storms. However, due to the very low probability of occurrence, and standard precautions taken to avoid flash floods (i.e. stopping work during heavy rainfall) this potential impact is considered less than significant.

Additionally, operational impacts related to flooding could occur through exposure of transmission line structures to flooding hazards. However, transmission line structures and foundations would be designed to withstand localized inundation. It is unlikely that transmission line structures would be damaged, and therefore, this impact would be less than significant.

Impact WQ 10 - Inundation by seiche, tsunami, or mudflow?

Less Than Significant – No Mitigation Required

The Project area is located along the California-Arizona border, several hundred miles from the Pacific Ocean. Thus, no tsunami hazard is present and there would be no impact associated with inundation from a tsunami. Additionally, the Project area does not contain lakes which could be subject to seiche, and therefore there would be no impact associated with inundation by a seiche. Finally, the proposed alignment within California is not located in steep mountains that could be subject to mudflow. Even in the unlikely scenario of a mudflow originating from off-site, the presence of Project components would not exacerbate the consequences to public safety or the environment that such a mudflow would present. Project facilities are unmanned and located in undeveloped open space, presenting minimal risks of public safety regardless of the presence of pre-existing natural hazards such as mudflow. For these reasons, the impacts would be less than significant.

2.10.6 Hydrology and Water Quality Mitigation

See **MM GEO-CEQA-2** under Section 2.7.6 (Geology and Soils).

MM WQ-CEQA-1: Implement Hydrology and Water Quality Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.10.2 and 2.10.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to hydrology and water quality. These APMs, BMPs, and CMAs include; APM WQ-01, APM WQ-02, BMP WQ-04, BMP WQ-05, BMP WQ-06, BMP WQ-7, CMA LUPA-SW-1, CMA LUPA-SW-5, CMA LUPA-SW-15, CMA LUPA-SW-18, CMA LUPA-SW-20, and CMA LUPA-SW-21. If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where

feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements:

- **CMA LUPA-SW-20.** This CMA shall also include a determination based upon the California Rapid Assessment Method (California Wetlands Monitoring Workgroup [CWMW] 2015).

MM WQ-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

2.11 LAND USE AND PLANNING

This section describes the impacts to land uses that could potentially occur during construction, operation, maintenance, and decommissioning of the Project in terms of CEQA significance thresholds disclosed below in Section 2.11.4 below. As disclosed in Section 4.8 of the TES (BLM 2019), impacts from construction and operation of the Project would result in incompatible uses or conflict with a land use plan or policy. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.11.1 Thresholds and Methodology

The Project's effects are compared to CEQA thresholds of significance to determine whether the Project would be consistent with the designated and allowable uses. The analysis is based on Section 4.8 of the TES (BLM 2019).

Local general plans and community plans, and zoning were reviewed for consistency with designated land uses. Geographic information system (GIS) data was used to determine land uses along the Project alignment. Land uses analyzed in this CEQA analysis are focused on those within 1,000 feet of the Project or its alternatives; those within one mile of the Project or its alternatives and are nationally, regionally, or locally important; and those that would be affected by the Project or its alternatives. Sensitive land uses addressed in this section include:

- Residences
- Educational institutions
- Day care centers
- Religious facilities
- Health care facilities

Sensitive receptors within 2,000 feet of the centerline of the Project segments are listed in Table 4.12-2 and illustrated on Figure 3.12-1a-w of the TES. As identified in Table 4.12-2 of the TES, there are eight sensitive receptors along Segment p-15w consisting of rural residences near Ripley. Ripley is a rural community and sparsely populated.

Within the State of California, the approximately 17-mile segment of the proposed transmission line alignment traverses a variety of land uses. While the majority of lands traversed consist of agricultural fields and open space/desert lands, the proposed alignment also spans or borders levees, roads (paved and dirt), rural residential and commercial/industrial development, and a commercial solar generating operation. The proposed alignment generally follows existing transmission lines from the Colorado River west to the Colorado River Substation, traversing both City of Blythe and Riverside County jurisdiction lands.

2.11.2 Applicant Proposed Measures and BLM Best Management Practices

There are no APMs or BMPs applicable to Land Use and Planning.

2.11.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to Land Use and Planning are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-LANDS-4.** Nonfederal lands within the boundaries of BLM LUPA land use allocations are not affected by the LUPA.
- **CMA LUPA-LANDS-5.** The MUCs used to determine land tenure in the CDCA Plan, as amended, will be replaced by areas listed in the CMAs below.

- **CMA LUPA-LANDS-8.** The CDCA Plan, as amended, requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment.

2.11.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant impacts on land use and planning if it would:

a. Physically divide an established community.

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

c. Conflict with any applicable habitat conservation plan or natural community conservation plan.

2.11.5 Land Use Impact Analysis

Impact LU 1 - Physically divide an established community?

No Impact

The construction and operation of the Project would not divide an established community because it would be located within existing utility corridors adjacent to existing transmission lines. The ROW would not be expanded, and there would be no development outside of the ROW. Operation and maintenance activities would be performed concurrently with operation and maintenance activities currently being performed on existing utility infrastructure in the area. There would be no impacts from the construction and operation of the transmission line. As discussed in the Section 4.8.4.1 of the TES (BLM 2019), ROW acquisition on BLM lands and other private lands would be negotiated with the landowner. The temporary impacts would be short term and would cease once construction activities are completed at a segment. No new access roads would be developed in the residential areas of the municipalities that occur within the Project area. In addition, as described in Section 3.8.3.3 of the TES, none of the proposed route segments in the Colorado River and California Zone cross a proposed or approved, but not yet constructed, residential subdivision.

In Riverside County, California, the Project would span across farmlands and BLM lands. The transmission lines will be overhead but the associated transmission structures would require a permanent footprint. As mentioned in Chapter 2, Description of the Proposed Action and Alternatives, DCRT would attempt to match these structure locations adjacent to existing transmission line structures to the extent practicable. If unavoidable, the transmission structure

may be located on agricultural lands. However, this would not sever any linkages or access roads between farmlands as the footprint of these structures would be small and placed to ensure that the farmland is not rendered unproductive.

As discussed in Section 4.8.4.5 of the TES, Project segments may cross the existing NextEra Energy Blythe Solar Energy Center and McCoy Solar Energy facility and the approved but not yet constructed Blythe Mesa Solar Project. In addition to the approved projects, First Solar Energy Desert Quartzite Solar Project and the Recurrent Energy Crimson Solar Project are pending applications within the land use study area. For segments that would cross a solar facility, the Project structures would be sited to avoid all solar energy facility components. However, the Project would have the potential to affect the performance of the solar array, due to shading from the Project structures. Micrositing of the poles, as well as pole type selection, would reduce the potential for this effect. Therefore, the Project would not conflict with solar facilities or divide any established communities both in California and Arizona.

Substation work would be performed entirely within existing SCE property and no expansion of facilities would occur. Temporary use areas would be required for material staging, laydown yards, and batch plants during construction. These areas would be temporary disturbance and selected based upon the final alignment chosen for this Project; however, the work areas would not divide an established community because the proposed work areas would be located in an existing utility corridor adjacent to existing transmission lines. The SCE ROW would not be expanded, and there would be no development outside of the ROW. Operation and maintenance activities would be performed concurrently with operation and maintenance activities currently being performed on existing SCE infrastructure in the area. No impacts would occur from the construction and operation of these Project components.

Staging yards are temporary workspaces that would be used only for construction and would not divide existing communities. There would be no potential to divide an established community from the use of the staging yards because they would be located in areas not being used for residential. Staging yards would be restored to their approximate pre-construction condition following Project completion. No impacts would occur.

Therefore, overall, the Project would have no impact related to dividing an established community.

Impact LU 2 - Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant – No Mitigation Required

As discussed in Section 4.8.7 of the TES (BLM 2019), none of the Proposed or Alternative Segments in California would be in compliance with CMA LUPA-BIO-PLANT-2, the intent of which is to protect the ecological process of special status plant species in order to sustain viable, healthy populations. This CMA would apply to Harwood's eriastrum which occurs in the biology study area. This CMA would be further amended in the CDCA Plan to authorize construction of the Ten West Link Project within 0.25-mile of occurrences of Harwood's eriastrum, provided

that a Rare Plant Linear ROW Protection Plan for Harwood's eriastrum is developed and approved by the BLM California State Director. The effects of the amendment on Harwood's eriastrum populations is provided in Section 4.5.7 of the TES.

The amendment to the CDCA Plan to bring the Project into compliance with CMA LUPA-BIO-PLANT-2 would not result in any effects on current land uses in the study area. This amendment would not conflict with any other management direction in the CDCA Plan, as amended.

No local land use plans, policies, or regulations requiring discretionary approval would apply to the Project because, pursuant to GO No. 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities. Consequently, the Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project area. There would be no impact. The CPUC has consulted with local agencies regarding land use matters potentially affected by the Project.

The Project is located within several federal, state, and local planning areas. Approximately 72 percent of the Project on BLM land would be within designated utility corridors and thus be complying. As discussed in Section 4.8.4 of the TES, the Project would comply with BLM leases for ROW grants for locations outside the utility corridor. For non-BLM lands, ROWs would be obtained as easements or leases, as appropriate. For Project alignments located within utility corridors, no impacts would occur.

As discussed in Section 4.8.5.3 of the TES, where the proposed segments would intersect private lands outside of existing ROWs, easements would be negotiated with the landowners. The issuance of a CPCN would allow DCRT to site the Project within residential areas, consistent with other transmission lines in the region (Devers-Palo Verde 500 kV No. 1 [DPV1] and No.2 [DPV2]). Therefore, the Project would be compatible with the surrounding residential uses.

As discussed in Section 4.8.4.5 of the TES (BLM 2019), the land use analysis area in the Colorado River and California Zone would include the Colorado River special policy area designated under the Palo Verde Valley Area Plan. The land use concept for this plan intends to preserve the agricultural character of the analysis area. Because the Project would be located within existing utility corridors adjacent to existing transmission lines, the Project and more specifically, new poles and conductors, would not result in a significant change in the character of the analysis area. In addition, in Riverside County, the Project would be located on lands zoned as Agriculture and Rural Residential. Both these zoning districts allow for the installation of transmission facilities. As such, impacts would be less than significant.

Table 4.8-2 in the TES outlines the plans that are applicable within the Project area, land use goals and objectives therein, and the consistency with the Project. Within the State of California, the following plans contain relevant objectives and policies related to land use however, as previously stated above, regional and local agencies do not have jurisdiction over the Project:

- Riverside County General Plan (Riverside County 2015a)
- Riverside County Palo Verde Area Plan (Riverside County 2015b)
- City of Blythe General Plan 2025 (City of Blythe 2007)

Table 2.11-1, below, list the relevant objectives and policies of the Riverside County General Plan, Riverside County Palo Verde Area Plan, and City of Blythe General Plan 2025 and demonstrates the Project's consistency with listed objectives and policies:

Table 2.11-1 Land Use Compliance with Relevant Land Use Plans

GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
Riverside County General Plan	
Policy LU 4.1: Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area.	As proposed, the Project would be located within existing utility corridors adjacent to existing transmission lines. New poles and conductors be constructed and would operate where existing poles and towers supporting high voltage transmission lines are currently installed and contribute to the baseline land use setting. By locating the Project within existing utility corridors and adjacent to existing transmission lines, the character of the Project area would not be substantially degraded. Therefore, the Project would be consistent with this policy.
Policy LU 7.1: Require land uses to develop in accordance with the General Plan and area plans to ensure compatibility and minimize impacts.	Please refer to the Policy LU 4.1 Compliance Determination above. Due to its location within existing utility corridors and proximity to existing transmission lines, land use impacts would be minimized, and the Project would be compatible with surrounding land uses. Therefore, the Project would be consistent with this policy.
Policy LU 7.2: Notwithstanding the Public Facilities designation, public facilities shall also be allowed in any other land use designation except for the Open Space-Conservation and Open Space- Conservation Habitat land use designations. For purposes of this policy, a public facility shall include all facilities operated by the federal government, the State of California, the County of Riverside, any special district governed by or operating within the County of Riverside or any city, and all facilities operated by any combination of these agencies.	Within Riverside County, the proposed alignment traverses several land use designations including open space, residential and agricultural (please refer to Figure 3.8-4 of the TES [BLM 2019]). Please refer to the Policy LU 4.1 Compliance Determination above. Because the Project is proposed within existing utility corridors and adjacent to existing transmission lines, the Project is consistent with this policy.
Policy LU 7.4: Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.	Please refer to the Policy LU 4.1 Compliance Determination above. The Project would be consistent with this policy.

GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
Policy LU 14.1: Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.	Please refer to the Policy LU 4.1 Compliance Determination above. There are no officially designated scenic vistas or overlook in the Project Area (please refer to Section 2.1.5, Aesthetics Analysis, above). In addition, BMPs including BMP AES-08 would be implemented to minimize impacts to aesthetic resources such as scenic vistas. BMP AES-08 entails the avoidance of "skylining" transmission/communication towers such that these features would not be placed on ridgelines, summits, or other location where they would be silhouetted against the sky. With implementation of BMPs including BMP AES-08, aesthetic resources would be maintained to the extent practicable and the Project would be consistent with this policy.
Policy LU 20.2: Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.	Please refer to the Policy LU 4.1 Compliance Determination above. The Project would be consistent with this policy.
Policy LU 23.2: Require that structures be designed to maintain the environmental character in which they are located.	Please refer to the Policy LU 4.1 Compliance Determination above. The Project would be consistent with this policy.
Policy LU 31.6: Ensure that development and conservation land uses do not infringe upon existing essential public facilities and public utility corridors, which include Riverside County regional landfills, fee owned rights-of-way and permanent easements, whose true land use is that of Public Facilities. This policy will ensure that the public facilities designation governs over what otherwise may be inferred by the large-scale General Plan maps.	Please refer to the Policy LU 4.1 Compliance Determination above. The Project would be compatible with adjacent transmission lines and underlying land uses would not infringe upon the proposed transmission line (the Project would be located within existing transmission corridors). The Project would be consistent with this policy.
Riverside County General Plan Palo Verde Area Plan	
Policy PVVAP 4.1: Protect farmland and agricultural resources in Palo Verde Valley through adherence to the Agriculture sections of the General Plan Multipurpose Open Space and Land Use Elements.	Please refer to the Policy LU 4.1 Compliance Determination above. The Project would be consistent with this policy.
PVVAP 16.1: Protect ridgelines and slopes that provide a significant visual resource for the Palo Verde Valley area through adherence to the Hillside	Please refer to the Policy LU 4.1 and Policy LU 14.1 Compliance Determination above. The Project would be consistent with this policy.

GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
Development and Slope section of the General Plan Land Use Element	
City of Blythe General Plan 2025	
Policy 1: Preserve the scale and character of established neighborhoods.	Please refer to the Policy LU 4.1 Compliance Determination above. The Project would be consistent with this policy.

As demonstrated in Table 2.10-1 above, the Project would be consistent with identified policies of the Riverside County General Plan, Riverside County Palo Verde Area Plan and City of Blythe General Plan 2025.

Since the Project would be consistent with applicable land use plans in California, impacts concerning inconsistencies with applicable land use plans, policies, or regulations would be less than significant.

Impact LU 3 - Conflict with any applicable habitat conservation plan or natural communities' conservation plan?

Less Than Significant – No Mitigation Required

Project transmission line temporary staging yards and the Substation work areas would be located either on Southern California Edison (SCE) property, within SCE ROW or within roadway ROW (franchise agreement) within the applicable municipality, or on new sources of ROW. It is acknowledged that the DRECP supersedes any other MCSPs or HCPs for work conducted by the Project and as documented in Section 4.5 of the TES (BLM 2019), a plan amendment to the HCP would be required. Potential conflicts with applicable HCPs or natural community conservation plans are addressed in Section 4.5 of the TES. The proposed route and alternative segments in California do not cross any areas designated under the DRECP (BLM 2016a) or other applicable BLM management plans (BLM 1980, 2002a) as Areas of Critical Environmental Concern or as other areas designated for the conservation or focused management of biological resources or their habitat. All areas on BLM-managed lands in California that are crossed by the proposed route and alternative segments are classified in the DRECP as DFA. The DRECP allows the development of new transmission line infrastructure outside of utility corridors within DFAs. As stated above, the Project does not conflict with any applicable habitat conservation plan or natural communities' conservation plan. Therefore, there would be a less than significant impact to applicable HCPs and natural community conservation plans.

2.11.6 Land Use Mitigation

No MMs are required.

2.12 MINERAL RESOURCES

This section describes the impacts to mineral resources that could potentially occur during construction, operation, and maintenance of the Project. Environmental impacts presented in section 4.3 of the TES (BLM 2019) are discussed in terms of CEQA significance thresholds disclosed in Section 2.12.4. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.12.1 Thresholds and Methodology

The Project's effects are compared to CEQA thresholds of significance to determine whether the Project would result in a significant change to mineral resources. The analysis is based on Sections 3.3 and 4.3 of the TES (BLM 2019).

Section 4.3 of the TES discloses adverse environmental effects that may result from construction and operation of the Project. This CEQA analysis uses information and data from available published resources, including journals, maps, and government websites, were collected and reviewed to bolster the environmental impact analysis found in Section 4.3 of the TES within the context of the impact thresholds found in Appendix G of the CEQA Guidelines.

This analysis assumes that the applicant would comply with the following environmental factors and components of the Project Description (Chapter 2 of the TES) when evaluating the effects of the Project on geology and mineral resources:

- A geotechnical engineering study would be completed prior to final design and construction of the Project to identify site-specific geological conditions and potential geological hazards. The data collected from the study would be used to guide sound engineering practices, and foundation design would be consistent with geological conditions for each tower site.

- Existing fault lines, land subsidence areas, earth fissures, mining claims, oil/gas reserves, areas of mineral resources of economic value, and other pertinent geological and mineral-related features have been accurately mapped.

- Operation and maintenance of the Project, as it relates to geological and mineral resources, would primarily be the presence of transmission structures and transmission lines and how they could preclude access to underground resources in the immediate vicinity.

- Transmission lines typically have little impact to mining operations. Span lengths are such that access to minerals can be accomplished between spans. Should open pit mining be planned, structures can be left on 'islands,' or the mining interests can have the transmission line locally re-routed (personal communication, Mark Wieringa, Western, 2013).

2.12.2 Applicant Proposed Measures and BLM Best Management Practices

There are no APMs or BMPs applicable to Mineral Resources.

2.12.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). There are no CMAs applicable to Mineral Resources.

2.12.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant minerals impacts if it would:

a. Result in the loss of availability of a known mineral resource classified Mineral Resource Zone (MRZ) MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

2.12.5 Mineral Resources Analysis

Impact MRZ 1 - Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?

Less Than Significant – No Mitigation Required

The Project area west of Colorado River, in California, is within Mineral Resource Zone 4 (MRZ-4; California Department of Conservation 1994), which is defined as area where there is not enough information available to determine the presence or absence of mineral deposits. Regardless of indeterminate information regarding the MRZ within the Project area, the Project is a transmission line that would not involve the loss of availability of any mineral resources within the area. Project construction could temporarily disturb areas near the MRZ-4 area identified above, however, upon Project completion, the area would remain available for mineral extraction in the future. Therefore, given the lack of determinate information for this area, as well as the availability of this area to remain a viable MRZ-4 area, impacts under this criterion would be less than significant.

Impact MRZ 2 - Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Less Than Significant – No Mitigation Required

As discussed in Section 4.3 of the TES (BLM 2019), there are mining operations in the Project area. The Project would not affect these mines, prospects, or occurrences unless the presence of the line prevented access to develop the material, since none of the mines, prospects, or occurrences of mineral resources are being actively mined. The Project has the potential to indirectly impact mineral resources by encumbering the resource during the operational phase of

the Project. As concluded in Section 4.3 of the TES, transmission lines typically have little impact to mining operations, as the spacing between transmission structures is large enough to accommodate access to mineral resource deposits. Should open pit mining be planned, though no such development is currently planned within the Project's ROW, structures can be left on 'islands,' or the mining interests can have the transmission line locally re-routed. Therefore, operational impacts related to the interference with locally important mineral recovery sites would be less than significant.

The Project could temporarily disrupt access to mineral resources during the construction phase of the Project, thus potentially causing loss of availability of a locally important mineral resource. However, since no active mining operations, claims, prospects, or occurrences of mineral resources are located within the Project ROW, it is unlikely that the Project would result in the loss of availability of important mineral resources. Therefore, impacts under this criterion would be less than significant.

2.12.6 Mineral Resources Mitigation

No MMs are required.

2.13 NOISE

This section describes the noise and vibration impacts to sensitive receptor associated with the construction, operation, and maintenance of the proposed transmission line, SCS, and ancillary facilities in terms of CEQA significance thresholds disclosed below in Section 2.13.4 below. As disclosed in Section 4.12 of the TES (BLM 2019), construction activities may temporarily result in increased noise levels to visitors. Additionally, this section responds to issues raised during the public scoping process, which are presented in Section Appendix 1 of the EIS. However, impacts have been determined to be less than significant with APMs, BMPs and CMAs.

2.13.1 Thresholds and Methodology

Existing conditions described in Section 3.12 of the TES (BLM 2019) have been evaluated with regard to their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The potential impacts associated with the Project are evaluated on a qualitative basis by comparing Project effects on sensitive receptors reported in Section 4.12 of the TES with the significance criteria established by Appendix G of the CEQA Guidelines.

Construction of the Project would require a variety of equipment. During construction, noise levels generated by Project construction activities would vary depending on the particular type, number, and duration of use of various pieces of construction equipment. Typical noise levels at 50 feet from the source for some of the heavy pieces of construction equipment that would be required to construct the Project are listed in Table 2.13-1.

Table 2.13-1 Typical Noise Levels from Construction Equipment

CONSTRUCTION EQUIPMENT	NOISE LEVEL (DBA, LEQ AT 50 FEET)
Front Loader	85
Backhoes, excavators	80
Tractors, dozers	85
Graders, scrapers	85
Trucks	88
Concrete pumps, mixers	82
Cranes (mobile)	83
Cranes (derrick)	88
Pumps	76
Generators	81
Compressors	81
Pneumatic tools	85
Jack hammers, rock drills	88 – 98
Pavers	89
Compactors	82

Source: U.S. Department of Transportation (DOT), 2006

As shown in Table 2.13-1, intermittent and continuous use of construction equipment would generate noise levels in excess of 85 dBA at 50 feet. However, noise levels associated with these types of construction equipment typically attenuate, or reduce, over relatively short distances. The noise analysis included in the Final EIR/EIS for the nearby DPV2 assumed aggregated peak noise levels of up to 100 dBA within 50 feet from construction activity (CPUC and BLM 2006):

> *At 100 feet, the distance would attenuate these peak levels to about 94 dBA, and at 200 feet, 88 dBA. These short peaks would attenuate further to about 76 dBA for locations at 800 feet with an unobstructed line of sight. Over a typical day, average noise levels from construction would be lower than the intermittent peaks because most equipment would not be operated steadily or continuously at peak levels. At 50 feet, continuously steady construction noise levels would average approximately 77 dBA. At 100 feet, these average levels would attenuate to 71 dBA, and to 65 dBA at 200 feet. These noise levels would diminish over additional distance and would be reduced further by any intervening structures. At distances over one-quarter mile, steady construction noise would be under 50 dBA, which would begin to fade into quiet backgrounds.*

Table 4.12-1 in the TES (BLM 2019) identifies noise guidelines and requirements applicable to the Project. Those relevant to Riverside County are replicated here in Table 2.13-2.

Table 2.13-2 Project Noise Guidelines and Requirements in Riverside County

LEVEL	SOURCE	CRITERIA	NOTES
Local	Riverside County General Plan (2015a)	Noise attenuation measures required for land use exposed to levels greater than 65 CNEL	Requirement
Local	Riverside County General Plan (2015a)	Stationary source facility-related limits received by sensitive land uses: 45 dBA, 10minute -Leq between 10 p.m. and 7 a.m.	Requirement
Local	Riverside County General Plan (2015a)	Stationary source facility-related limits received by sensitive land uses: 65 dBA, 10minute -Leq between 7 a.m. and 10 p.m.	Requirement
Local	Riverside County General Plan (2015a)	Construction not to occur between 6 p.m.to 6 a.m.	Required June–September
Local	Riverside County General Plan (2015a)	Construction not to occur between 6 p.m. to7 a.m.	Required October–May

Notes: dB = decibels, L_{dn} = day-night sound level, dBA = A-weighted decibel, CNEL = Community Noise Equivalent Level, L_{eq} = equivalent sound level

The Riverside County Noise Ordinance (Riverside County 2007) specifies that exemptions from noise standards include private construction projects located within 0.25 of a mile from an inhabited dwelling, provided that construction does not occur between the hours of 6 p.m. and 6 a.m. during the months of June through September, and construction does not occur between the hours of 6 p.m. and 7 a.m. during the months of October through May.

2.13.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to noise under CEQA.

- **APM NO-01: Noise Minimization with Portable Barriers.** Compressors and other small stationary equipment used during construction would be shielded with portable barriers if located within 200 feet of a residence.

- **APM NO-02: Noise Minimization with Quiet Equipment.** Quiet equipment (for example, equipment that incorporates noise control elements into the design; quiet model air-compressors or generators can be specified) would be used during construction whenever possible.

- **APM NO-03: Noise Minimization through Direction of Exhaust.** Stationary equipment exhaust stacks and vents (i.e., on equipment like generators and lights) would be directed away from buildings where feasible.

- **APM NO-04: Blasting Mitigation.** If blasting is required, the timeframe that blasting activity would occur would be limited, in addition to limiting the number of blasts that occur per hour or per day.

- **BMP NO-05: County, State, and Federal Noise Regulations.** Project would be located far enough from residences or include engineering and/or operational methods such that county, state, and/or federal regulations for noise are not exceeded.

- **BMP NO-06: Hours of Daily Activity**. The hours of daily activities would be limited, and noise barriers would be constructed if needed and practicable. Coordination with nearby residents is recommended.

- **BMP NO-07: Sensitive Wildlife Protection.** To the extent feasible, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.

2.13.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to noise are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA LUPA-BIO-12.** For activities that may impact focus or BLM special status species, implement the following LUPA CMA for noise:

  - To the extent feasible and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.

  - Implement engineering controls on stationary equipment, buildings, and work areas including sound insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.

  - Use noise controls on standard construction equipment including mufflers to reduce noise

2.13.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant impacts to noise if it would:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project?

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project expose people reside or working in the project area to excessive noise levels?

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

2.13.5 Noise Analysis

Impact NOI 1 - Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant with Mitigation

Noise-sensitive receptors (NSR) identified within 2,000 feet of the centerline of the Project segments in California are listed in Table 4.12-2 and illustrated on Figure 3.12-1j-m of the TES (BLM 2019). Noise-sensitive receptors include residences, schools and day care facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas. As identified in Table 4.12-2 of the TES (BLM 2019), there are eight sensitive receptors along Segment p-15w consisting of rural residences near Ripley. Ripley is a rural community and sparsely populated. The general land use character is predominantly rural residential areas and farmland.

2.13.5.1 Construction

As discussed in Section 4.12.5 of the TES, and shown in TES Table 3.12-8**,** the existing ambient noise levels in Ripley are 50 dBA. Construction noise levels are expected to generally be below 65 dBA within a few hundred feet of the limits of construction. As discussed in the DPV2 EIS/EIR, construction noise within 200 feet would not attenuate to less than 65 dBA (CPUC and BLM 2006). NSRs within 2,000 feet of the centerline of the Project and construction noise may exceed 65 dBA at NSR properties.

As discussed in the EIS, construction impacts would be of limited duration (short-term) and exemptions from noise standards as included in the Riverside County General Plan (EIS Table 2.13-2), include private construction projects located within 0.25 of a mile from an inhabited dwelling, provided that construction does not occur between the hours of 6 p.m. and 6 a.m. during the months of June through September, and construction does not occur between the hours of 6 p.m. and 7 a.m. during the months of October through May. As such MM NO-CEQA-1 would be implemented and would ensure that Project activities occur within these specified hours, thus reducing potential impacts related to exposure of persons to noise levels in excess of the standards identified within the Riverside County General Plan to a less than significant level. Additionally, MM NO-CEQA-1 also requires the implementation of APMs, BMPs, and CMAs identified for noise reduction for Project activities. Specifically, APM NO-01 through APM NO-03 would be required through MM NO-CEQA-1 to reduce construction-related noise through the use of portable noise barriers, quiet equipment, proper exhaust orientation. BMPs NO-4 through NO-07 would also be required through MM NO-CEQA-1 and would limit blasting and the use of implosive sleeves, if required, seek to locate the Project away from NSRs, limit the hours of daily activity, and consider wildlife protections.

Implementation of MM NO-CEQA-2 would further reduce construction related noise by ensuring equipment is equipped with noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer; construction traffic is routed away from residences and schools, where feasible; unnecessary construction vehicle use and idling time is minimized; and construction staging and material laydown areas are located away from NSRs.

Therefore, after implementation of MM NO-CEQA-1 and MM NO-CEQA-2 impacts related to construction noise would be consistent with the County’s thresholds and would result in a less than significant impact.

2.13.5.2 Operation, Maintenance, Decommissioning

As with the Project segments in Arizona, the proposed segments in California would continue to follow existing utility corridors and would be co-located with the existing DPV1 line. Therefore, expected noise levels near NSR are expected to be similar to existing levels of noise.

As noted in the Section 4.12.5 of the TES (BLM 2019), the Project could result in corona effect (i.e., localized change of electric charge causing a humming noise), that could result in noticeable noise particularly in unfavorable weather conditions. As shown in Table 4.12-4 of the TES, the Project operations were predicted to have audible noise levels below US EPA guideline of 55 dBA during foul weather conditions. These predicted Project noise levels are in line with existing levels of ambient noise at the NSRs, which range from <45 to 65 dBA. During dry periods, the corona noise levels would be lower than during wet conditions, which were the conditions assessed with the modeling exercise. In the Project area, the wettest months are typically July through September in Arizona (the monsoon season), and December through January in California (U.S. Climate Data 2017, Arizona State Climate Office 2017). Therefore, because the noise levels associated with the corona effect caused by operation of the transmission lines would be consistent with ambient noise levels in the area, impacts would be less than significant.

Section 4.12.5 of the TES concludes that maintenance activities associated with substations and transmission lines would generate noise levels similar to construction-related activities, but would be anticipated to occur less frequently, include fewer individual noise point sources such as pieces of heavy equipment and/or OHVs and pickup trucks used along the ROW, and would be of shorter duration. Indeed, these activities are predicted to result in maximum noise levels in the 55 to 58 dBA range at a distance of 0.25 mile from the centerline of the ROW. Thus, the expected maximum noise levels are in the range of ambient levels (i.e., <35 dBA to 65 dBA). This is consistent with conclusions made in the DPV2 EIR/EIS related to potential impacts from construction noise. Therefore, impacts related to the noise caused by maintenance activities associated with substations would be less than significant.

It is expected that noise impacts resulting from the decommissioning process would be similar to the impacts discussed above (Section 2.13.5.1) during construction of the Project. As discussed above, MM NO-CEQA-1 and MM NO-CEQA-2 would be implemented and would reduce potential impacts related to noise to a less than significant level. As such, because the decommissioning process would result in similar impacts as discussed above, the same MMs would apply, and potential impacts related to noise would therefore be less than significant with mitigation incorporated.

Impact NOI 2 - Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Less than Significant with Mitigation[7]

As noted in Section 4.12.4.1 of the TES (BLM 2019), ground-borne vibration impacts near sensitive receptors would only be expected to occur during pile-driving activities, however, at this time, no pile driving is associated with the construction of the Project. MM NO-CEQA-1 would be required and would implement APM NO-04, which includes requirements for limiting blasting where feasible, and proper notification to sensitive receptors within 100 feet of such blasting. With mitigation incorporated, there would be a less than significant impact to exposure of people to excessive ground-borne vibrations.

Impact NOI 3 - A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant – No Mitigation Required

As discussed in Section 4.12.5 of the TES, corona noise associated with the Project would result in a 0.1 decibel increase above the existing noise levels in the Project Area. This increase would be inaudible to the human ear and less than significant. As such, the permanent increase in noise levels along the Project would be less than significant.

Impact NOI 4 - A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant with Mitigation

As discussed in Section 4.12.5 of the TES and Impact NOI 1 above, the existing ambient noise level at the Ripley NSRs is 50 dBA as shown in Table 3.12-8. Construction noise levels are

expected to generally be below 65 dBA within a few hundred feet of the limits of construction. Construction impacts would be of limited duration (short-term) at any one single location as the transmission line placement would move along the Project alignment. In addition, expected noise levels near NSR are expected to be similar to existing levels of noise; and construction of the transmission line would primarily be limited to daytime hours so it is unlikely that construction equipment noise levels would cause sleep disruption for residents at the determined NSR. There may be some instances during construction where noise levels may exceed ambient noise levels in the Project vicinity at NSRs, and as such could result in a potential impact prior to mitigation. Therefore, MM NO-CEQA-1 and MM NO-CEQA-2 would be required in order to reduce potential impacts to a less than significant level. MM NO-CEQA-1 would require the implementation of APMs, BMPs, and CMAs related to noise minimization, specifically APMs NO-01 through -04, BMPs NO-05 through -07, and CMA LUPA-BIO-12. MM NO-CEQA-2 would require the implementation of noise reduction measures during construction and proper notification to sensitive receptors within 100 feet of Project construction activities. Therefore, impacts related to substantial temporary or periodic increases in ambient noise levels would be less than significant with mitigation incorporated.

Impact NOI 5 - For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact

In California, the Project's Segment p-16 is located approximately six miles south of Blythe Airport, the only public airport along the California portion of the Project. No impacts would occur.

Impact NOI 6 - For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact

In California, the Project's Segment p-15w is located approximately four miles south of CYR Aviation, a private airstrip, the only private airstrip within the California portion of the Project. No impacts would occur.

2.13.6 Noise Mitigation

MM NO-CEQA-1: Implement Noise Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.13.2 and 2.13.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to noise. These APMs, BMPs, and CMAs include; APM NO-01, APM NO-02, APM NO-03, APM NO-04, BMP NO-05, BMP NO-06, BMP NO-07, and CMA LUPA-BIO-12.

If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following APMs and BMPs have been modified to meet CEQA requirements:

- **APM NO-03: Noise Minimization through Direction of Exhaust.** Consistent with APM NO-03, stationary equipment exhaust stacks and vents shall be directed away from buildings, where feasible. If infeasible to do so, the Applicant shall work with the affected residents and the County to achieve the necessary reduction in noise through placement of noise barriers or time of day that such construction work will take place.

- **APM NO-04: Blasting Mitigation.** Consistent with APM NO-04, if any blasting activities will occur during construction, the number of blasts that occur per hour or per day would be limited. In addition, the Applicant shall notify any sensitive receptors, consistent with MM NO-CEQA-2 below), who are within 100 feet of such activity. The same shall be applied to any use of implosive sleeves during wire stringing.

- **BMP NO-05: County, State, and Federal Noise Regulations.** As specified in BMP NO-05, the Project, including staging areas would be located far enough from residences to comply with the Riverside County Noise Ordinance, wherever possible. As discussed under Impact NOI 1 above, the Riverside County Noise Ordinance specifies that exemptions from noise standards include private construction projects located within 0.25 of a mile from an inhabited dwelling, provided that construction does not occur between the hours of 6 p.m. and 6 a.m. during the months of June through September, and construction does not occur between the hours of 6 p.m. and 7 a.m. during the months of October through May. Construction work shall comply with these restrictions and will be in compliance with the Riverside County Noise Ordinance.

- **BMP NO-06. Hours of Daily Activity.** Consistent with BMP NO-06, the hours of daily construction activities would be limited. Specifically, these limitations would coincide with the hour specified within the Riverside County Noise Ordinance (See BMP NO-05 above).

- **BMP NO-07: Sensitive Wildlife Protection.** Consistent with BMP NO-07 and CMA LUPA-BIO-12, stationary noise sources would be limited to the extent feasible near wildlife species and their suitable habitat. Where infeasible to do so, the Applicant shall work with the BLM and CDFW to identify the affected species and/or habitat and achieve the appropriate noise reduction necessary or otherwise mitigate the effect to result in a less than significant noise impact to sensitive species and their habitat.

MM NO-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

MM NO-CEQA-2: Noise Reduction Measures.

The Applicant shall ensure that noise reduction measures are implemented throughout construction activities in order to avoid or reduce noise impacts on sensitive receptors. The Applicant shall submit a monthly report to the BLM and the County reporting the effectiveness of the following measures using compliance with the Riverside County Noise Ordinance as a level of measurement for such effectiveness. The Applicant shall also notify all residents within one mile of the Project site at least 15 days prior to any ground-disturbing through mail, or by other effective means. The Applicant shall establish a phone number for use by the public to accompany the notification that will allow the public to report any undesirable noise conditions associated with the construction of the Project. If the telephone number provided is not staffed 24 hours a day, the Applicant shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This phone number shall be posted at the Project sites during construction where it is visible to passerby. If a complaint is filed regarding Project-related noise, the Applicant shall document, investigate, evaluate, and attempt to resolve all Project-related noise complaints. All complaints related to Project-noise shall be included in the monthly noise report. If the BLM and/or the County determines that noise limits are not sufficiently managed then the Applicant shall work with the BLM, County, and affected residents to achieve the necessary reduction or otherwise mitigate the effect beyond the measures that are included below.

The measures below include noise reduction features, limits to construction traffic as it relates to noise, measure to reduce construction vehicle use, and measures to limit construction staging and material laydown areas.

- **Effectiveness of Noise Reduction Features**. Consistent with APM NO-2, the Applicant shall ensure that the chosen construction contractor use equipment that includes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. Additionally, the Applicant shall ensure that the chosen contractor maintains all construction equipment in good working order to avoid unnecessary rattling of loose parts. These

noise reduction features shall be utilized throughout construction activities and will reduce unnecessary noise impacts from construction equipment.

- **Construction Traffic**. The Applicant shall ensure that the chosen contractor routes construction traffic away from residences and schools by taking alternate routes. If residences and schools cannot be avoided during construction the Applicant shall inform the residents and/or schools affected no less than five days prior to construction and work with residents and local schools to minimize timing and duration of construction noise. Possible measures for reducing noise from construction traffic near residences and/or schools may include timing of construction routes or adding noise barriers around areas that may be sensitive to construction traffic.

- **Construction Vehicle Use.** The Applicant shall ensure that the chosen contractor limits unnecessary construction vehicle use and idling times throughout construction activities. This shall include turning off vehicles that are not in use, or idling, consistent with APM AQ-02 and limit the number of vehicles in use to the minimum amount required in order for completion of construction activities.

- **Construction Staging and Material Laydown Areas.** The Applicant shall ensure that the construction staging and material laydown areas be located away from noise sensitive receptors to avoid concentrated and prolonged exposure to noise form construction activities. Where construction staging and laydown areas cannot avoid sensitive receptors, the Applicant shall inform the sensitive receptor(s) no less than one week prior to the start of construction activities and work with the sensitive receptor(s) to provide noise reducing methods such as noise barriers.

MM NO-CEQA-2 Implementation

Responsible Party: The Applicant shall be responsible for ensuring that the noise reduction measures are implemented throughout construction activities.

Timing: The noise reduction measures shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall prepare a monthly noise report that will include any actions taken in order to be in compliance with the Riverside County Noise Ordinance. Additionally, the noise report shall include any noise complaints received and actions taken to resolve the complaint. The noise report shall be kept on file by the applicant and submitted monthly to the CPUC and BLM.

Standards for Success: Construction noise is maintained at a less than significant level throughout construction activities and noise complaints are minimized and addressed accordingly throughout construction activities.

2.14 POPULATION AND HOUSING

This section presents the environmental setting and impact analysis for population and housing resulting from the Project and its alternatives. This section addresses existing population and

housing information for the Project area, applicable regulations, environmental impacts, and MMs to reduce or avoid significant effects. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.14.1 Thresholds and Methodology

The following analysis uses baseline conditions established in Section 3.15 of the TES (BLM 2019) and evaluates the potential for impacts associated with the Project. CEQA Guidelines Section 15131(a) states, economic or social effects of a project will not be treated as significant effects on the environment. CEQA analysis may trace a chain of cause and effect from the proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis, therefore, will be on the physical changes triggered by impacts to socioeconomic resources that would be introduced by the Project.

Population estimates and projections were determined using data from the United States Census Bureau and Western Riverside Council of Governments Housing estimates and projections were determined using data from Western Riverside Council of Governments.

This impact analysis considers whether implementation of the Project would result in significant impacts to population and housing. The analysis focuses on reasonably foreseeable effects of the Project as compared with baseline conditions. The analysis uses significance criteria based on the CEQA Appendix G Guidelines. The potential direct and indirect effects of the Project and alternatives are addressed. Effects that would result from operation and maintenance of the Project and alternatives are also addressed. The applicant did not identify any APMs or BMPs to avoid or reduce significant impacts to population and housing.

2.14.2 Applicant Proposed Measures and BLM Best Management Practices

There are no APMs or BMPs applicable to Population and Housing.

2.14.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). There are no CMAs applicable to Population and Housing.

2.14.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant impacts on population and housing if it would:

a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

2.14.5 Population and Housing Analysis

Impact POP 1 - Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant – No Mitigation Required

Construction of the Project is anticipated to take approximately 2 years and as shown in Table 2.14-1, construction is projected to support approximately 160 direct short-term construction jobs.

Table 2.14-1 Impacts to Jobs and Employment

JOBS	DIRECT	INDIRECT	INDUCED	TOTAL
Transmission Line	120	54.1	85.5	259.6
Substation	40	9.0	14.3	43.3
Total	160	63.1	99.8	302.9

Source: BLM 2019

Construction of the Project is not anticipated to induce substantial population growth or result in impacts on population and housing. Even with the assumption that half of the construction-related positions would be filled by workers moving into the area, 158 housing units would be required. Based on the vacancy rates are shown in Table 2.14-2, the Project's impact on available housing would be low. It is anticipated that the Project would primarily employ workers who are living within the Project area because the Project is located within a rural urban area with easy access from nearby communities. As such, the workforce would be drawn from the regional metropolitan area and the population in the area would not be affected. Therefore, no impact to the population due to construction workers would occur and no mitigation is required.

Table 2.14-2 Project Impacts on Existing Housing Units

AREA	2014 HOUSING UNITS (TABLE 3.15-1)	SCENARIO ONE		SCENARIO TWO	
		HOUSING UNITS INCREASE	HOUSING UNITS INCREASE (%)	HOUSING UNITS INCREASE	HOUSING UNITS INCREASE (%)
La Paz County	16,113	77	0.478%	158	0.981%
Maricopa County	1,657,753	77	0.005%	158	0.010%
Riverside County	810,426	77	0.010%	158	0.019%
Three-County Study Area	2,484,292	77	0.003%	158	0.006%
Block Group Study Area	13,750	77	0.560%	158	1.149%

Source: BLM 2019

Operations and maintenance activities of the Project would be similar to the existing conditions for the existing transmission line facilities. Existing utility companies currently operate and maintain similar transmission facilities along all of the Project transmission alignment except for areas where new ROW is needed for the transmission line. The frequency and intensity of operations and maintenance would only increase by the additional work needed for maintenance of the alignment, which includes maintenance of the new transmission line and supporting facilities. This additional work would occur daily across the entire Project, therefore, be minimal. The Project would result in an increase in operations or maintenance staff; however, as discussed in Section 4.15.4 of the TES (BLM 2019), they would be hired from the regional talent pool and therefore, there would be no impact to population growth from Project operation and maintenance.

A project would indirectly accommodate growth if it would remove an obstacle to additional growth and development. This could occur through removing a constraint or adding an additional public service. The Project is considered growth accommodating not growth inducing since it would remove a barrier to growth through the construction and operation of transmission and electrical services. The Project would not induce growth beyond the levels of growth identified in applicable local general plans and policies and therefore impacts to population growth would be less than significant.

Impact POP 2 & 3 - Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere?

No Impact

The Project includes both new and replacement and relocation of existing electric transmission and power line facilities. All proposed and relocated facilities would primarily be located within existing ROW. As demonstrated above in Table 2.14-2, the Project's would have no impact on

available housing during construction and the Project does not include any features that would displace existing housing. Service interruptions to communities served by the transmission lines would be temporary (only during construction) and minimal. The Project would not displace people or housing. Therefore, there would be no impact.

2.14.6 Population and Housing Mitigation

No MMs are required.

2.15 PUBLIC SERVICES AND UTILITIES

This section describes the public services and utilities impacts associated with the construction, operation, and maintenance of the Project in terms of CEQA significance thresholds disclosed below in Section 2.15.4 below. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS. Impacts have been determined to be less than significant with APMs, BMPs and CMAs.

2.15.1 Thresholds and Methodology

Baseline conditions for the impact analysis were established in Section 3.14 of the TES (BLM 2019). The baseline conditions were evaluated based on their potential to be affected by construction, operation, or maintenance of the Project. No quantitative thresholds apply to the analysis of potential impacts on public services and utilities under CEQA. Qualitative impact criteria set forth in Appendix G of the CEQA Guidelines are used for the analysis presented in this section.

2.15.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to noise under CEQA.

- **APM HAZ-01: Hazardous Substance Control and Emergency Response.** DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable.

- Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.
- All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:
- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.
- Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

DCRT would complete its Emergency Action Plan Form as part of Project tailgate meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailgate information.

- **BMP PH&S-01.** Portable toilets would be provided at work sites to assure that adequate facilities are available for the duration of the Project and potential exposure to human waste is avoided.
- **APM TT-01: Traffic Coordination.** Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project.
- **BMP PH&S-02.** An FPP would be developed for the Project.
- **BMP MISC-02**. All cleared and graded material to be removed from the Project area would be disposed of in compliance with local ordinances.

2.15.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to public services and utilities under CEQA.

- **CMA DFA-VPL-BIO-FIRE-1**. Implement the following standard practice for fire prevention/protection:
    - Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum, these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.

2.15.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant public services and utilities impacts if it would:

a. The Project would have a significant impact if it would cause substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or cause a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of these public services:
    1. fire protection,
    2. police protection,
    3. schools,
    4. parks, or
    5. other public facilities

b. Project would temporarily increase water use, and project operation would contribute to increased long-term water consumption and require new entitlements?

c. Project construction and operations would result in increase in wastewater or wastewater treatment?

d. Project construction and operations would result in new storm drainage facilities or expansion of existing facilities?

e. Project construction and operations would result in solid waste generated during construction of the project that exceeds landfill requirements?

2.15.5 Public Services and Utilities Analysis

Impact PUSVC 1 - The Project would have a significant impact if it would cause substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or cause a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of these public services:

1. **fire protection,**
2. **police protection,**
3. **schools,**
4. **parks, or**
5. **other public facilities**

Less Than Significant with Mitigation

2.15.5.1 Fire Protection

As discussed under Section 3.14.3.1 in the TES (BLM 2019), in California, the City of Blythe Fire Department and the Riverside County Fire Department (RCFD)/California Department of Forestry provide local fire protection and in Arizona, the Project area is within the Southwest Coordination Center (SWCC) that coordinates and mobilizes resources for wildland fires, prescribed fires, and other incidents.

Section 4.14.4.1 of the TES discusses potential impacts associated with construction and operation of the Project and documents the Project-specific fire risks from temperature, humidity, wind, and lightning as well as Project conditions that could trigger fire hazards which could result in a potential impact prior to mitigation. As such, MM PUB-CEQA-1 would be required which would include the implementation of APMs, BMPs, and CMAs related to fire reduction, thus reducing the potential impacts that could result from fires associated with the Project to a less than significant level. As such, substantial adverse physical impacts associated with providing fire protection would be less than significant with mitigation incorporated since the Project would not result in increased service ratios, decreased response times, or impact to other performance objectives of fire protection services.

Additionally, construction, operation, and maintenance of the Project could increase demand for emergency services in the Project area, and thus result in a potential impact prior to mitigation. To limit potential impacts on emergency response services, the applicant would implement MM PUB-CEQA-1 which include the implementation of APMs HAZ-01, TT-01, and BMP PH&S-02 which would reduce the risk of potential hazards and continue to provide access to emergency responders. In addition, an as discussed in detail in Section 2.8, Hazards and Hazardous Materials, of this appendix, MM HAZ-CEQA-1 would be implemented and consists of the development of an FPP in consultation with appropriate local fire agencies. Further discussion of the MM HAZ-CEQA-1 is provided in Section 2.8 of this appendix. Implementation of MM PUB-CEQA-1 and MM HAZ-CEQA-1 would ensure that impacts related to fire protection would be less than significant.

Further, MM TRANS-CEQA-2 would be required and would include the development and implementation of a Traffic, Transportation, and Access Management Plan for the Project which would ensure that fire, police and other first responders are notified of the timing, location, and duration of construction activities. Further discussion of MM TRANS-CEQA-2 and potential impacts on emergency response services is provided in Section 2.17, Traffic and Transportation, of this appendix. The Project would be designed in accordance with various reliability standards promulgated through implementation of NERC policies and procedures. Additionally, DCRT is governed by Western Electricity Coordinating Council (WECC) standards that may be in addition to or more stringent than those put forth by NERC. Therefore, the Project would not result in the need for new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives.

Therefore, the overall impacts to fire protection resources would be less than significant with MM PUB-CEQA-1, MM HAZ-CEQA-1, and MM TRANS-CEQA-2 incorporated.

2.15.5.2 Police Protection

In California, the Project area is within the jurisdiction of the Riverside County Sheriff's Department, Colorado River Station located at 260 North Spring Street in Blythe (Riverside County 2016). The sheriff's office nearest to the proposed SCE Colorado River Substation site is in Blythe, approximately 13 miles east of the substation. In Arizona, the Project area is within the jurisdiction of the La Paz County Sheriff's Department. Stations are located at 8500 Riverside Drive in Parker, Arizona and 305 N. Plymouth Avenue in Quartzsite, Arizona.

The Project construction is not anticipated to permanently increase the local population and no new or expanded law enforcement facilities or increased staff levels within the Project regional or local study area would be required. Up to 140 construction personnel would be required however, these additional workers within the area would be temporary in nature and would not significantly alter the existing service levels when considered in the context of the entire population served. The additional volume of traffic associated with workers commuting to the Project sites during construction would be temporary and the California Highway Patrol (CHP) and local police departments would be sufficient to respond to incidents in the Project area. As discussed in Section 2.2.7.2 of the TES (BLM 2019), seven-foot tall security fencing would be installed around the entire perimeter of the SCS to protect equipment and prevent accidental contact with energized electrical equipment by authorized or unauthorized personnel. The incorporation of security measures and the temporary and minimal increase of construction workers supports the determination the Project would not result in the need for new or physically altered police or sheriff protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives. Therefore, impacts would be less than significant, and no mitigation would be required.

2.15.5.3 Schools

The Project area is located within the Palo Verde Unified School District. Palo Verde Unified serves the Project site, Blythe and other remote areas of Riverside County and consists of three elementary schools, two middle schools, one high school, and a continuation high school. In Arizona, there are no school districts within one mile of the Project and the Project is primarily located on BLM lands.

The Project would not increase the demand for housing or induce population growth during construction, operation, or maintenance. As noted in Section 2.2.7.4 of the TES, 112 workers are anticipated during construction of the Project. Demolition activities would require a similar number of workers as the construction phase. Permanent employees needed for operational activities such as vegetation and infrastructure maintenance would be available locally and not result in new population growth. Construction workers would be expected to commute to the area or reside in the area temporarily. Since construction would be limited to approximately two years, it is unlikely that the workers would relocate their families in the Project area. Therefore, the Project would not increase demand for school services or facilities, and there would be a less than significant impact.

2.15.5.4 Parks and Recreation

Park and other recreational facilities are discussed in Sections 3.10 and 4.10 of the TES. Most of the Project resides in BLM land thus, the Project area is a popular area for recreational activities. Recreation activities in the Project area include camping, nature viewing, amateur geology (i.e., rockhounding), team sports, water sports, OHV use, hiking and backpacking, rock climbing, and hunting. OHV use in Johnson Canyon would need to be closed for the duration of Project construction and dispersed recreation activities would be temporarily affected. Appendix 2A of the EIS describes the APMs for temporary signs directing vehicles to alternative park access and parking. Since construction is anticipated to last approximately two years, and the Project area is relatively large, the impacts to recreation would be less than significant.

Overall, impacts to police protection, schools, parks, and recreation during Project construction and operation would be less than significant, while impacts to fire protection services would be less than significant with mitigation incorporated.

Impact PUSVC 2 - Project would temporarily increases water use, and project operation would contribute to increased long-term water consumption and require new entitlements?

Less Than Significant – No Mitigation Required

The proposed Project would not generate permanent change in water demand that could result in a need for new or expanded water entitlements. As further detailed in Section 2.13, Population and Housing above, construction is projected to support approximately 160 direct short-term construction jobs over an anticipated 2-year period. Further, the Project is located within a rural urban area with easy access from nearby communities. Therefore, the Project would primarily employ construction workers who are already living within local area. The non-local workforce would stay at existing hotels in the vicinity of the Project that are served by existing water service from existing entitlements.

As discussed in Section 2.2.7 of the TES (BLM 2019), “Project Construction,” the applicant has estimated that 2,592,543 gallons of water would be needed for the construction phase of the Project. As stated in the TES section, this water usage during construction would be needed for concrete structure foundation and dust control. The Project would use water that may come from a permitted source associated with an existing water right. The Project would not contribute to depleting the water sources associated with the water right. Water trucks, typically with a capacity of approximately 4,000 gallons, would support construction activities and demand. The

applicant would not require or seek expanded entitlements to water for temporary construction-related purposes. Rather, the applicant would purchase such water from the nearest feasible and available source of suitable quality. Construction water may be obtained from local municipal sources, trucked in by a water supply vendor, or derived from local wells. Considering they would occur over a 2-year period, construction water demand would be minimal and periodic/ episodic in nature and would cease following the completion of construction activities. Therefore, construction related impacts to water use would be less than significant.

Operations and maintenance water usage would be minimal. Any water use needed for long term maintenance and operations would be provided by the private wells and/or municipal supplies, as described above. Substantial water use that would necessitate the need for new entitlements would not be required for operation and maintenance of the Project. Therefore, operational impacts related to water use would be less than significant.

The Project's overall water use from construction and long-term operation of the electric system would be less than significant.

Impact PUSVC 3 – Project construction and operations would result in increase in wastewater or wastewater treatment?

Less Than Significant – No Mitigation Required

The Project would build a transmission line and would not generate any additional wastewater or water demand from Project operation. There would be no operational impacts associated with an increase in wastewater or wastewater treatment. However, during construction, limited wastewater would be generated through the use of portable toilets which would be provided at the work site. The capacity of Blythe Regional Wastewater Reclamation Facility in the City of Blythe has a capacity of 2.4 million gallons per day (MGD). This capacity is enough to cover the minimal construction and operation wastewater generated by the Project. The impacts from construction and operations would not result in an increase in wastewater or need for wastewater treatment and therefore would be less than significant.

Impact PUSVC 4 - Project construction and operations would result in new storm drainage facilities or expansion of existing facilities?

Less Than Significant – No Mitigation Required

The Project would not require or result in the construction of new storm water drainage facilities since the introduction of impervious surfaces would be minimal and any site runoff would be localized to each individual structure. Since the Project would not increase storm water runoff or require new drainage facilities or expansion of existing facilities the Project would not have an impact on storm drain facilities. Therefore, potential impacts would be less than significant, and no mitigation would be required.

Impact PUSVC 5 - Project construction and operations would result in solid waste generated during construction of the project that exceeds landfill requirements?

Less Than Significant – No Mitigation Required

Section 2.2.7.2 of the TES (BLM 2019) discusses the solid waste that would be generated from construction. Approximately 10 dumpsters-full per month would be generated at each active staging site. All waste will be cleaned up and brought to local landfills in accordance with local ordinances. La Paz County Regional Landfill located at 26999 Highway 95, Milepost 128 in Parker Arizona has a capacity of 3,269,877 cubic yards (2.5 million cubic meters) and 2.5 million megagrams. The Blythe Sanitary Landfill, located at 100 Midland Road in Blythe, California has a capacity of 6,229,670 cubic yards. These facilities, along with various other privately owned and local landfills would provide the necessary space to accommodate the approximate Project use of 10 dumpsters of solid waste needed per month. Daily clean-up of individual's trash at each Project site would be disposed of properly and would not result in an impact to local landfill capacities or requirements. In addition, BMP MISC-02 would be incorporated into Project design and would require that all cleared and graded material removed from the Project area be disposed of at a licensed facility with available capacity in compliance with local ordinances. Therefore, Project construction impacts related to landfill requirements and capacities would be less than significant.

Operations and maintenance of the Project would generate solid waste such as packaging and replaced parts. The solid waste generated from routine inspections, replacement of parts, and crew waste would be minimal and would not exceed landfill capacity. Therefore, Project operation impacts related to landfill requirements and capacities would be less than significant.

Overall impacts from Project construction and operations regarding solid waste would be less than significant and no mitigation would be required.

2.15.6 Public Services and Utilities Mitigation

See **MM HAZ-CEQA-1** under Section 2.8.6 (Hazards and Hazardous Materials).

See **MM TRANS-CEQA-2** under Section 2.17.6 (Traffic and Transportation).

MM PUB-CEQA-1: Implement Public Services and Utilities Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.15.2 and 2.15.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to public services and utilities. These APMs, BMPs, and CMAs include; APM HAZ-01, BMP PH&S-01, APM TT-01, BMP PH&S-02, BMP MISC-02, and CMA-DFA-VPL-BIO-FIRE-1. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required

specificity pursuant to CEQA, the following AMPs and BMPs have been modified to meet CEQA requirements:

- **APM TT-01: Traffic Coordination.** See revisions under MM TRANS-CEQA-2 (Section 2.17.6).

- **BMP PH&S-02.** See revisions under MM HAZ-CEQA-1 (Section 2.8.6).

MM PUB-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

2.16 RECREATION

This section describes the impacts to recreation resources that could potentially occur during construction, operation, and maintenance of the Project in terms of CEQA significance thresholds disclosed below in Section 2.16.4 below. As disclosed in Section 4.10 of the TES (BLM 2019), impacts from construction and operation of the Project would result in less-than-significant impacts to recreational areas. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.16.1 Thresholds and Methodology

Existing conditions and recreational resources described in Section 3.10 of the TES were evaluated regarding their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The Project's effects were evaluated by CEQA thresholds of significance to determine whether the Project would result in a significant impact to recreational resources. The analysis is based on Sections 3.10 and 4.10 of the TES.

2.16.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following

would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to Recreation under CEQA.

- **BMP REC-01: Alternative Access and Parking Signs.** Signs directing vehicles to alternative existing access and parking would be posted in the event construction temporarily obstructs parking areas near trailheads.

- **BMP REC-02: Recreation Users Signs.** Signs advising recreation users of construction activities and directing them to alternative trails or bikeways would be posted on both sides of all trail intersections or as determined through DCRT coordination, with the respective jurisdictional agencies. A schedule of construction activities would be posted near entrances to recreational areas as well as on the Project website. Signs would be installed near access roads notifying the public of construction activities in the area and the presence of permanent transmission facilities.

- **BMP REC-04: Alternate Route Signage.** Identify alternative routes (on existing roads and trails**)** of equal or greater standard and access to specially designated areas if roads, primitive roads, or trails used for recreation are temporarily closed or otherwise significantly affected. The alternate route(s) would be clearly identified on signage.

2.16.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). The CMAs applicable to the Project and related to Recreation are listed below and Project compliance with CDCA CMAs is addressed in the analysis portion of this section.

- **CMA DFA-REC-1.** Retain, to the extent possible, the identified recreation setting characteristics: physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls (see recreation setting characteristics matrix).

- **CMA DFA-REC-2.** Avoid large-scale ground disturbance within one-half mile of Level 3 Recreation facility footprint including route access and staging areas. If avoidance isn’t practicable, the facility must be relocated to the same or higher standard and maintain recreation objectives and setting characteristics.

- **CMA DFA-REC-4**. When considering large-scale development in DFAs, retain to the extent possible existing, approved recreation activities.

- **CMA DFA-REC-5.** For displacement of dispersed recreation opportunities, commensurate compensation in the form of enhanced recreation operations, recreation facilities or opportunities will be required. If recreation displacement results in resource damage due to increased use in other areas, mitigate that damage

through whatever measures are most appropriate as determined by the Authorized Officer.

- **CMA DFA-REC-7.** If designated vehicle routes are directly impacted by activities (includes modification of existing route to accommodate industrial equipment, restricted access or full closure of designated route, pull outs, and staging areas to the public, etc.), mitigation will include the development of alternative routes to allow for continued vehicular access with proper signage, with a similar recreation experience. In addition, mitigation will also include the construction of an "OHV touring route" which circumvents the activity area and allows for interpretive signing materials to be placed at strategic locations along the new touring route, if determined to be appropriate by BLM.

2.16.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant impacts to recreation if it would:

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

2.16.5 Recreation Analysis

Impact REC 1 - Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant with Mitigation

Recreational activities in the Project area west of and including the Colorado River include boating, hiking, bicycling, golf, camping (including Recreational Vehicle facilities), nature and wildlife viewing, and activities associated with playgrounds and school and regional parks (City of Blythe 2007; Riverside County, 2015b). The Project would not result in new population growth that would increase the use of existing recreational facilities. Impacts to existing recreational facilities could, however, occur during the Project's construction phase, during which certain recreational facilities could be inaccessible. Specifically, the Project ROW crosses three existing or planned linear facilities associated with recreational uses: a planned Class I bike path extending south from Blythe along Lovekin Boulevard through Riverside County lands toward the Colorado River; an existing regional trail from Blythe to Ripley; and the Southern Immigrant Trail / Juan Bautista De Anza National Historic Trail. Passage along each of these routes at the point of ROW crossing may be inaccessible for the duration of the construction which could result in a potential impact prior to mitigation. As such, MM REC-CEQA-1 would be required and would implement APMs, BMPs, and CMAs in order to reduce potential impacts

to recreation resources to a less than significant level. These APMs, BMPs, and CMAs would include measures to provide signage for alternative access and parking, advanced notification to recreational users of construction activities, and alternate routes for roads and trails. Additionally, given the availability of alternative routes or temporary detours, any dispersal of recreation activities would not lead to overcrowding in other unaffected recreational areas. Therefore, construction and operational impacts related to restriction of recreational opportunities located west of the Colorado River and along the Project ROW would be less than significant with mitigation incorporated.

Further, as discussed in the Section 4.10.4.1 of the TES (BLM 2019), impacts to various recreational activities in all the zones may include construction noise, visual disturbances, temporary boat usage restrictions, vehicle and equipment travel, route closures/detours, and short-term over-crowding at other recreational areas, all of which could result in potential impacts related to recreational resources prior to mitigation. As such, MM REC-CEQA-1 would be required and would include the implementation of BMPs during construction (including BMPs REC-01, REC-02, and REC-04) which would ensure adequate notification is provided to the users and signage for alternate routes, access, and parking within/to recreation areas is installed. Additionally, these impacts would be temporary and would not permanently preclude the use of or access to any existing recreation opportunities or activities. Construction associated with the crossing of the Colorado River, including stringing of the wire, would temporarily inhibit boating activity, however, boating traffic would be allowed to resume after each wire stringing activity is complete. Further, Jack Marlowe Park, in Ripley, is within one mile of the Project ROW, and Peter McIntyre County Park, along the Colorado River, is within 1.5 miles of the ROW. Project construction would not result in population dispersal affecting either of these parks, and neither would require temporary closure. Therefore, impacts to recreational resources would be less than significant with mitigation incorporated.

Impact REC 2 - Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact

The Project includes construction of transmission lines and related infrastructure and within a ROW. No new recreational facilities or expansion of existing recreational facilities which might have an adverse physical effect on the environment would be included as part of the Project. Therefore, there would be no impact related to construction or expansion of recreational facilities.

2.16.6 Recreation Resources Mitigation

MM REC-CEQA-1: Implement Noise Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.

The APMs, BMPs, and CMAs in Sections 2.16.2 and 2.16.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to recreation. These APMs, BMPs, and CMAs

include; BMP REC-01, BMP REC-02, BMP REC-03, BMP REC-04, CMA DFA-REC-1, CMA DFA-REC-2, CMA DFA-REC-4, CMA DFA-REC-5, CMA DFA-REC-7. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts.

For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following CMAs have been modified to meet CEQA requirements:

- **CMA DFA-REC-1.** Consistent with CMA DFA-REC-1, recreation setting characteristics would be retained to the extent feasible. If infeasible to do so, the Applicant shall work with the BLM to mitigate the effect (i.e. placement of construction equipment, timing of construction, etc.).

- **CMA DFA-REC-4**. Consistent with CMA DFA-REC-4, large-scale development in DFAs shall retain approved recreation facilities, to the extent feasible. If infeasible to do so, the recreation facility shall be relocated to the same or higher standard and maintain recreation objectives and setting characteristics.

MM REC-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

2.17 TRAFFIC AND TRANSPORTATION

This section describes the potential impacts to roadways and aviation facilities related to the construction, operation, maintenance, and decommissioning of the Project. As disclosed in Section 4.17 of the TES (BLM 2019), impacts to roadways were analyzed to be less than

significant with implementation of APMs and BMPs. Additionally, this section responds to issues raised during the public scoping process, which are presented in Appendix 1 of the EIS.

2.17.1 Thresholds and Methodology

Existing conditions described in Section 3.17 of the TES have been evaluated regarding their potential to be affected by Project construction, operation, maintenance, and decommissioning activities. The evaluation of Project impacts is based on Section 4.17 of the TES and the significance criteria established by Appendix G of the CEQA Guidelines.

2.17.2 Applicant Proposed Measures and BLM Best Management Practices

APMs have been identified and would be implemented by the Project applicant. In addition, BLM would require implementation of BMPs, which are intended to further minimize Project impacts. All Project APMs and BMPs are described in EIS Appendix 2A. Of these, the following would apply to the portion of the Project located within California and have therefore been incorporated into the Project for evaluation of significant impact to traffic under CEQA.

- **APM TT-01: Traffic Coordination.** Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project. This plan would also include measures/protocols for aviation, including helicopter use, coordination with local air traffic control, and a Congested Area Plan, pursuant to FAA regulations.

- **APM TT-02: Structure Lighting in Military Training Routes (MTR).** Project structures that are located within MTRs would be fitted with night-vision compatible red lighting emitting an infrared energy between 675 and 900 nanometers.

- **BMP TT-03: Public Access, Marking, and Public Information for Closed Access.** The BLM would determine if new access routes would be retained for public access through approval of the Access Plan for the Project. If any routes of travel are not accessible and/or closed, Carsonite posts and signing would note the closures. Where routes are closed, kiosks with information panels would be posted providing public information.

- **BMP TT-04: Access Plan.** An Access Plan would be required to identify all routes where new disturbance and/or cross-country travel is proposed. Existing access would be used to the maximum extent practicable; new access would only be created when there is no other reasonable or practicable means of access.

- **BMP TT-05: Using Open and Designated Routes.** The Access Plan for the Project would maximize use of open and designated access routes to the extent practicable.

- **BMP TT-06: Access Roads in Dune Habitat**. Access Roads would be unpaved and constructed at grade in dune habitat. No berms or application of rock would be allowed on the California public lands portion of the Project in desert tortoise habitat.

Should other adaptive access measures be required (such as temporary compaction or mats to allow access across washes), those measures would be formulated in concert with the BLM and contained in the Access Management Plan (Appendix 2B)

- **BMP TT-07: Routes of Travel**. Routes of travel for the Project on BLM-managed lands outside established roadways would be limited to those routes on the approved Access Plan.

- **BMP TT-08: Prohibit Cross-Country Vehicle Use Outside Designated Work Areas**. Within Project boundaries, prohibit cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.

- **BMP TT-09: Repairs to Local Roads.** Local roads would be restored if road damage occurred as a result of Project construction.

2.17.3 Conservation and Management Actions

The CDCA Plan, as amended, contains CMAs, which include a specific set of avoidance, minimization, and compensation measures. The applicability of those measures to the Project was determined using a CMA checklist (EIS Appendix 2C). There are no CMAs applicable to traffic and transportation.

2.17.4 CEQA Significance Criteria

Appendix G of CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Project would have significant traffic and transportation impacts if it would:

a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e. Result in inadequate emergency access?

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

2.17.5 Traffic and Transportation Analysis

Impact TRANS 1 - Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than Significant with Mitigation

As discussed in Section 3.17.1 of the TES (BLM 2019), plans applicable to establishing effectiveness for circulation system that apply to the Project include: the BLM California Desert Conservation Area Plan which limits use of motorized vehicles within the plan area; the Riverside General Plan which establishes a level of service (LOS) category C to all development proposals not within the boundaries of an Area Plan; the Palo Verde Valley Area Plan which applies to Blythe and surrounding area and states general roadway improvements are needed to support future conditions; and the City of Blythe General Plan which establishes LOS B on residential streets and a LOS C on arterials and collectors. As stated in section 3.17.3, there are many two-lane paved farm field roads over private property in the Colorado River and California Zone of the Project Area, including Intake Boulevard, Broadway Boulevard, and Lovekin Boulevard near Blythe and in general the Project crosses mainly uninhabited farmland where public roads. As discussed in Section 4.17.4.5 of the TES, the Project would add new "unclassified roads and trails" which would help alleviate congestion and level of service problems discussed in the relevant planning documents since they would add approximately 18 miles of access roads to areas currently without roads.

As discussed in Section 4.17.4.1 of the TES, construction of the Project would temporarily generate additional traffic congestion adding approximately 160 additional personal vehicles to the roadway network in a worst-case scenario before and after each shift construction shift. The cumulative additional volume would represent a volume increase of one percent or less on various segments of I-10 and US 95,and would not cause a change in the LOS. As noted in Section 3.17.3 of the TES, LOS for both I-10 and US 95 was LOS B or better during the busiest month. Traffic on other local roads, many of which cross through farmlands, is low. As the construction workers would be dispersed throughout the Project area and would not typically be working at the same place at any one time, only minimal traffic increases would occur on the study area roadway network relative to construction workers. Similarly, the construction-related traffic would be dispersed throughout the Project route and throughout the workday. However, as discussed in Chapter 4 of the EIS (see Section 4.2.9), short-term traffic delays during construction could occur at locations where the transmission line crosses roads or where improvements might be needed at local roads, intersections, and bridges to accommodate overweight or oversize delivery vehicles. Therefore, in order to ensure that potential impacts related to traffic and transportation do not result in a potential impact at any point during construction activities, MM TRANS-CEQA-1 and MM TRANS-CEQA-2 would be required. MM TRANS-CEQA-1 would implement APMs (including previously included APM TT 01 concerning traffic coordination and preparation of a traffic management plan) and BMPs related to traffic, transportation, and access for the Project. MM TRANS-CEQA-2 would develop and implement a Traffic, Transportation, and Access Management Plan for the Project that would ensure construction-related traffic impacts are consistently reduced to a less than significant level

throughout construction of the Project. Therefore, the potential for construction traffic to conflict with applicable management plans is less than significant with mitigation incorporated.

Similar to traffic and congestion along roadways, pedestrian routes, trails on BLM lands, OHV routes, and bicycle lanes in Riverside County, governed by the Riverside County General Plan as detailed in Section 3.17.1 of the TES could be affected by construction activities and could result in a potential impact prior to mitigation. As such, MM TRANS-CEQA-2 would also be required for congestion related to pedestrian routes along trails, BLM lands, OHV routes, and bicycle lanes. MM TRANS-CEQA-2 which includes the development and implementation of a Traffic, Transportation, and Access Management Plan which would require specific measures to maintain pedestrian, OHV, and bicycle access within the Project area, or provide alternate routes and appropriate notification and signage informing users of Project related detours necessary during construction activities. Therefore, with the implementation of MM TRANS-CEQA-2, the Project would not conflict with pedestrian, bike, or OHV congestion management plans and impacts would be less than significant.

As discussed in Section 4.17.5 of the TES (BLM 2019), traffic generated by operation and maintenance activities would be intermittent, and require a small number of vehicles, and occasional deliveries. The number of trips generated during operations would be minimal, and less than the number of construction trips. As such, trips generated during operation would not result in a substantial amount of congestion that could conflict with applicable traffic management plans. Operation and maintenance traffic would not increase traffic on primary roads, and, subsequently, would not decrease the level of service for any primary roads. Therefore, the potential for operational traffic to conflict with applicable management plans would be less than significant.

Decommissioning of the Project would result in similar impacts as construction activities and would be less than significant.

The overall Project impact related to conflicting with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system would be less than significant with mitigation incorporated.

Impact TRANS 2 - Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Less Than Significant – No Mitigation Required

As described above, the Project would result in potential temporary construction impacts and no operational impacts. Riverside County is the Congestion Management Agency for the Project segment located in California. As discussed above, the construction and decommissioning activities associated with Project would generate the highest amount of traffic; however, the increase in traffic from these activities would be temporary, occurring intermittently for a period of approximately two years as discussed in Section 2.2.7.4 of the TES (BLM 2019). Project construction and decommissioning traffic would not exceed a LOS standard established by the

county or conflict with an applicable congestion management program on these roadways. Impacts would be less than significant.

Impact TRANS 3 - Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Less than Significant with Mitigation

As discussed in Section 3.17.3.2 of the TES, a majority of the aviation facilities within the Project Area are used for general aviation and non-primary commercial service airports. The Blythe Airport is the primary airport in the Colorado River and California Zone of the Project area serving Blythe, California. It is open to the public and is owned by Riverside County. The airport's primary use is for general aviation, but it does not receive any commercial air traffic. Although not anticipated in the California portion of the Project, as evaluated in Section 4.17.4.1 of the TES, construction could cause a hazard to aviation if helicopters required during Project construction would be used in the vicinity of aviation facilities. However, this access method would not be necessary in the vicinity of any aviation facilities, and the ground construction equipment used would not be high enough to affect aviation. Therefore, aviation impacts from construction of the Project would be less than significant.

Operation of the Project would result in a change in air traffic patterns if a Project component such as a tower exceed a certain height with an airport influence area or interfere with flight paths. As discussed in Section 4.17.4.5 of the TES (BLM 2019), tower heights will be limited in Project sections where there is potential for collision hazards, including areas within the Blythe Airport influence area. As discussed in Section 4.17.4.5 of the TES, the FAA has determined that the proposed structure heights would "not exceed obstruction standards and would not be a hazard to air navigation" as a result of the FAA airspace analysis that was conducted (Aeronautical Study No. 2017-AWP-3724-OE). No Project segment lies within a military training route or within influence area of any other aviation facility in California. As discussed in TES Section 4.17.5, in the event that the placement of transmission lines would be required within an aviation flight path or military training route, specific lighting requirements, would be required to fit transmission lines with appropriate lighting, thus resulting in a potential impact, prior to mitigation. MM TRANS-CEQA-1 would be required in order to ensure that these appropriate lighting requirements would be incorporated into the Project. MM TRANS-CEQA-1 requires the implementation of APMs and BMPs to reduce traffic and transportation impacts, including previously identified APMs TT-01 that requires project coordination with local air traffic control and TT-02 which requires specific nighttime lighting requirements for structures. Therefore, operational impacts to air traffic patterns would be less than significant with mitigation incorporated.

Overall the potential for the Project to result in a change in air traffic patterns that results in substantial safety risks during construction and operation would be less than significant with mitigation incorporated.

Impact TRANS 4 - Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant – No Mitigation Required

As discussed in Section 2.2.3.12 of the TES, the Project would use existing access roads for construction and maintenance to the extent feasible, minimizing new disturbance. Existing roads would not be altered unless improvements are needed for the Project (including maintenance) or future use. Section 4.17.4.5 of the TES identifies new Type C and Type D roads that would be needed for the Project. As discussed in Section 2.2.3.12 of the TES, these roads would go directly from structure to structure, except on hillsides, ridgebacks, rock outcrop areas, wash crossings, treed areas, or in areas where sensitive environmental resources can be avoided. In such cases, the road would follow suitable topography from structure to structure and would be built in areas that generally cause the least amount of overall disturbance.

As described in Section 3.17.1 of the TES, access roads sited on BLM lands will be constructed in compliance with BLM Manual 9100. Other access roads not subject Access roads not on BLM lands would utilize existing rural roads and farm roads to the extent feasible and the additional approximately 18 miles of new access roads would be constructed in accordance to local design criteria for rural roads. Additionally, public agencies require an encroachment permit or other such agreement for each location where the Project would interface with a roadway or other transportation facility and would ensure no increase in design feature hazards would occur as part of the encroachment permit process. Complying with local permits and agreements would ensure that hazards and incompatible uses would be avoided or minimized. Therefore, impacts would be less than significant, and no MMs would be required.

Impact TRANS 5 - Result in inadequate emergency access?

Less than Significant with Mitigation

As discussed in Section 4.17.4.1 of the TES (BLM 2019), construction activities could potentially interfere with emergency response due to temporary, short-term traffic delays at locations where transmission lines cross roads or where improvements might be needed at local roads, intersections, and bridges to accommodate overweight or oversize delivery vehicles, thus resulting in a potential impact prior to mitigation. The temporary road and lane closures associated with construction activities could lengthen the response time required for emergency vehicles passing through the construction zone. As such, MM TRANS-CEQA-1 would be required which would implement APMs and BMPs required for emergency access. Additionally, MM TRANS-CEQA-2 would also be required in order to reduce impacts to emergency access to a less than significant level by developing and implementing a Traffic, Transportation, and Access Management Plan for the Project. This Plan would include specific measures for continued access for emergency vehicles throughout construction of the Project including notification to emergency service providers of the timing, location, and duration of construction activities on the roadways, and traffic control devices and signs would be used as needed. Therefore, impacts to emergency access would be less than significant with MM TRANS-CEQA-1 and MM TRANS-CEQA-2 incorporated.

Impact TRANS 6 - Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than Significant with Mitigation

As discussed under Impact TRANS-1 above, operation of the Project would not conflict with any adopted policies for various modes of transportation. Construction of the Project could impact access to pedestrian facilities, bike lanes, bus routes for a short-term, however, with the implementation of MM TRANS-CEQA-2, which includes the development and implementation of a Traffic, Transportation, and Access Management Plan, impacts related to public transit, bicycle, and pedestrian facilities within the Project area would be less than significant. Additionally, in order to ensure that the public is adequately notified of public road closures and/or detours, MM TRANS-CEQA-1 would be required which includes the implementation of BMP TT-03 for notification to the public of any detours and/or closures to public facilities. Further, due to the rural farmland nature of the Project corridor very few bus routes or public transit facilities are encountered, and recreation facilities would only have short-term temporary closures, which is further discussed under Section 2.16.5 above (Recreation Analysis). Therefore, the potential to conflict with adopted policies, plans, or programs or otherwise decrease the performance or safety of such facilities would be less than significant with mitigation incorporated.

2.17.6 Traffic and Transportation Mitigation

MM TRANS-CEQA-1: Implement Applicant Proposed Measures and Best Management Practices.

The APMs and BMPs in Sections 2.17.2 and 2.17.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs and BMPs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to recreation. These APMs, BMPs, and CMAs include; APM TT-01, APM TT-02, APM TT-03, APM TT-04, BMP TT-05, BMP TT-06, BMP TT-07, BMP TT-08, BMP TT-09.

If an APM or BMP is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs and BMPs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts.

For those instances (only) where an APM and/or BMP conflicts, or does not meet required specificity pursuant to CEQA, the following AMP and BMPs have been modified to meet CEQA requirements:

- **APM TT-01: Traffic Coordination.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan.
- **BMP TT-03: Public Access, Marking, and Public Information for Closed Access.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan.

- **BMP TT-04: Access Plan.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan.
- **BMP TT-05: Using Open and Designated Routes.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan.
- **BMP TT-06: Access Roads in Dune Habitat.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan.
- **BMP TT-07: Routes of Travel.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan.
- **BMP TT-09: Repairs to Local Roads.** Repairs to local roads would occur in compliance with the Traffic, Transportation, and Access Management Plan developed and implemented for the Project (See MM TRANS-CEQA-2 below).

MM TRANS-CEQA-1 Implementation

Responsible Party: The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

Timing: APMs, BMPs, and CMAs shall be implemented throughout construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.

Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.

MM TRANS-CEQA-2: Traffic, Transportation, and Access Management Plan.

The Applicant shall develop a Traffic, Transportation, and Access Management Plan at least 30-days prior to the start of construction and work with the BLM and Riverside County to prepare and implement the Plan for roadways adjacent to and directly affected by the proposed Project facilities. The Traffic, Transportation, and Access Management Plan shall be submitted to the BLM and the County for approval prior to the start of ground disturbing activities and issuance of a County grading permit. The Traffic, Transportation, and Access Management Plan shall be implemented by the Applicant throughout all construction activities.

The Traffic, Transportation, and Access Management Plan shall include, but not limited to, the following requirements:

- The Traffic, Transportation, and Access Management Plan shall conform to Part 6 (Temporary Traffic Control) of the California Manual on Uniform Traffic Control Devices;

- Identify truck routes designated by Riverside County and local jurisdictions haul routes that minimize truck traffic on local roadways;
- Provide sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public rights-of-way;
- Scheduling truck trips outside the peak morning and evening commute hours;
- Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized;
- Implementing roadside safety protocols including advance "Road Work Ahead" warning and speed control signs which shall be posted to reduce and provide safe traffic flow through the work zone;
- Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities and the locations of detours and lane closures. Maintain access for emergency vehicles within, and/or adjacent to roadways affected by construction activities at all times;
- Repairing and restoring adversely affected roadway pavements to their pre-construction condition;
    - Damage will be documented by the Project Applicant and the applicable jurisdiction (i.e. Caltrans, County, or individual) will be notified within 24 hours. The Applicant will work with the jurisdiction affected and will repair the damage within 30 days.
- Coordination of individual traffic plans for the Project and nearby Projects;
- Coordination between the contractor and Riverside County in developing circulation and detour plans that include safety features (e.g. signage and flaggers). The circulation and detour plans shall address:
    - Full and partial roadway closures;
    - Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices;
    - Bicycle detour plans, where applicable;
    - Parking along arterial and local roadways; and
    - Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites.

- Protocols for updating the Traffic, Transportation, and Access Management Plan to account for delays or changes in the schedules of individual projects.
- Provisions for coordination with the military and/or Federal Aviation Administration (FAA) should towers be proposed for location in flight paths or Military Training Routes (MTRs).

The Traffic, Transportation, and Access Management Plan shall incorporate an access road siting and management plan, Congested Area Plan (pursuant to FAA regulations and APM TT-01), and a transportation plan for the transport and transmission tower components and equipment.

MM TRANS-CEQA-2 Implementation

Responsible Party: The Applicant shall be responsible for ensuring that the Traffic, Transportation, and Access Management Plan is prepared and implemented throughout construction activities.

Timing: The Traffic, Transportation, and Access Management Plan shall be prepared at least 30-days prior to the start of construction and shall be implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall monitor construction transportation and access to ensure that the Traffic, Transportation, and Access Management Plan is implemented successfully as documented in inspection logs.

Standards for Success: Traffic flow remains at acceptable levels, emergency access remains possible at all times, the public is reasonably notified of any road closures, delays, or lane restrictions, and the Project area remains in compliance with all applicable transportation goals, policies, and requirements.

3.0 CUMULATIVE RESOURCE ANALYSIS

CEQA defines cumulative impacts as "two or more individual effects which, when considered together are considerable," and suggests that cumulative impacts may "result from individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355). CEQA documents are required to include a discussion of potential cumulative effects when those effects are significant and the CEQA Guidelines suggest two possible methods for assessing potential cumulative effects (CEQA Guidelines Section 15130). The first method is a list-based approach, which considers a list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts. Section 3.12 of the EIS describes the framework for the cumulative impacts analysis and identifies the geographic scope of the cumulative impacts analysis area and the cumulative conditions for each resource section. The analysis of potential environmental effects in Chapter 4 of the TES (BLM 2019) included discussions of potential cumulative effects for each resource area.

NEPA regulations developed by the federal Council on Environmental Quality (CEQ) require that the cumulative impacts of the Project be addressed in an EIS (40 CFR Part 1508.25). Cumulative impacts on the environment are those that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR Part 1508.7). These impacts can result from individually minor impacts of multiple actions over time. Chapter 3 of the TES lists that past, present, and reasonably foreseeable future actions for the Cumulative Effects Study Areas by resource. Cumulative impacts are then addressed by resource in Chapter 4 of the TES.

Since the cumulative impacts analysis conforms to the CEQA regulations, that is, it includes a list of reasonably foreseeable projects whose impacts may exacerbate adverse impacts resulting from the implementation of the Project; this section seeks to summarize the TES' cumulative impacts discussion for each resource section. Of the BLM-authorized and other known projects listed in FEIS Appendix 3 Table 3.12-1 the following remain in stages of development and were therefore considered in the evaluation of potential cumulative effects:

- Blythe Energy Power Plant and Sonoran Energy Project (Blythe Energy Project Phase II)
- Blythe Mesa Solar Project
- Crimson Solar Project
- Desert Quartzite Solar Project

Aside from the identification of cumulative effects to Tribal Resources (Section 4.7 of the TES [BLM 2019]), no major or significant cumulative effects were identified in the TES for the portions of the Project area within the Colorado River and California Zone.

No cumulative effects from the Project were identified for Special Designations (TES Section 4.11).

Negligible effects from the Project were identified for: Air Quality and Climate Change (TES Section 4.2); Geology, Mineral and Soil Resources (TES Section 4.3); Cultural Resources (TES Section 4.6); Land Use (TES Section 4.8); Grazing and Rangeland (TES Section 4.9); Recreation (TES Section 4.10); Hazardous and Hazardous Materials (TES Section 4.13); Environmental Justice (TES Section 4.16); and Water Resources (TES Section 4.19).

Negligible to minor cumulative effects to were identified for topography (discussed in TES Section 4.3 Geology, Mineral and Soil Resources); Paleontological Resources (TES Section 4.4); Traffic and Transportation (TES Section 4.17); Visual Resources (TES Section 4.18).

Negligible to moderate cumulative effects were identified for Socioeconomics (TES Section 4.15).

Minor cumulative effects were identified for Noise (TES Section 4.12) and Public Health and Safety (TES Section 4.14).

Long-term minor cumulative impacts “where the proposed segments would be collocated or near past/present disturbances and/or existing linear facilities with some exceptions” were identified for Biological Resources (TES Section 4.5).

Minor to moderate, short-term noise impacts would result if the Project were built concurrently with other reasonably foreseeable projects (TES Section 4.12).

4.0 ALTERNATIVES

This alternatives analysis compares potential environmental impacts that may result through construction, operation, and decommissioning of portions of the Project located in the state of California with other alternative route segments located in California. The chapter relies on analysis contained in Chapter 2 of the TES (BLM 2019). Chapter 2 of the TES (BLM 2019) provides a detailed description of the Proposed Action (Section 2.2), a summary of the No Action Alternative (Section 2.3), a description of the 55 alternative route segments, and Alternative and Subalternative routes (Section 2.4.4).

The CEQA requires, state and local agencies in California to implement the CEQA before issuing a discretionary permit. Because California agencies do not have jurisdiction over Project-related activities in other states, this alternatives analysis is limited to alternative route segments located in California and does not analyze route segments in Arizona. This analysis bolsters the alternatives analysis conducted in the TES with a CPUC – specific alternative, the non-wires alternative. A non-wires scenario as statutorily required under the CPUC's Certificate of Public Convenience and Necessity (CPCN) regulations (PUC Section1002.3) and is therefore included in this analysis. This chapter also provides the environmentally superior alternative identified by the CPUC, similar to Section 2.9 of the TES.

The EIS considers both "route segments" (Section 2.4.2 of the TES [BLM 2019]) and "alternatives" (full routes from Delany Substation to the Colorado River Substation) which span all four zones identified in the EIS: the East Plains and Kofa Zone, the Quartzsite Zone, the Copper Bottom Zone, and the Colorado River and California Zone. As mentioned above, this analysis focuses on route segments within the California portion of the Colorado River Zone and California Zone, and relies on the EIS illustrate how segments in California would be integrated into a full-route alternative that cross Arizona.

The purpose of an alternatives analysis pursuant to CEQA is to identify feasible options for attaining most of the basic objectives of the Project while reducing its significant effects. Provisions of the CEQA Guidelines (Section 15126.6) that address Project alternatives in an EIR state the following:

- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasonable choice. The alternatives will be limited to those that would avoid or substantially lessen any of the significant effects of the Project.

- A No Project Alternative will be evaluated, along with its impacts. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the effects of approving the Project with the effects of not approving the Project.

- An EIR does not need to consider an alternative whose effects cannot reasonably be ascertained and whose implementation is remote and speculative.

This alternatives analysis relies on the alternatives discussion in the TES (Chapter 2) screen feasible alternatives (Section 2.4) and describe a no project scenario (Section 2.3). Since the TES established a process for screening alternatives that and evaluates a no project alternative as required by the CEQA Guidelines, this analysis focuses on comparing adverse environmental effects that are found to be significant under CEQA for the Project with potentially feasible route segments identified in the TES. Specifically, this analysis addresses the CEQA requirement to assess alternatives to the Project that have the potential to avoid or substantially lessen potential impacts or are capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (Section 15126.6(b)).

4.1 PROPOSED ACTION AND ACTION ALTERNATIVE SEGMENTS IN CALIFORNIA

Section 2.2.1 of the TES (BLM 2019) describes the route segments that comprise the Project. A description of each segment, the underlying jurisdiction, and its total length is presented in Table 2.2-1 of the TES. The segments of the Proposed Action considered in this analysis include Segments p-15w through p-18. Section 2.4.4.4 of the TES describes each of the segments from the Colorado River crossings through the remainder of the Project alignment in California.

Section 2.4.7 of the TES describes the four full Alternative Routes (Alternative Routes 1 through 4) to the Project (Figure 2.4-10), which were developed by selecting proposed and alternative segment combinations within each zone that linked together logically and also met certain objectives of the BLM, cooperating agencies, and stakeholders, and potentially addressed public concerns with the Project. Subalternatives within each zone consisting of one or more segments were also developed that could replace a portion of one of the full Alternative Routes. The Subalternatives provide localized variations to the full Alternative Routes that could be used to reduce impacts or address issues with the full Alternative Routes.

Table 4.1-1 provides determinations that indicate whether the portions of the Alternative segments located in the Colorado River and California Zones would be more or less impactful than the Project with respect to each environmental factor for which a significant and unavoidable impact would occur during construction or operation. Information for potential impacts in Arizona is included to help describe impacts and benefits that are relevant to the determination of an Agency Preferred/Environmentally Superior Alternative, where appropriate. Impacts that would be less than significant without mitigation or for which feasible mitigation exists to reduce the impact to less than significant levels are not the focus of the comparison of alternatives presented. Where the analysis determines that impacts would be similar to the Project, an environmentally superior alternative for that resource area has not been identified. Table 4.1-1 provides a summary of the impact determinations for the Project and Alternatives for the segments in California, based on the analysis provided in Table 2.2-36a, Table 2.2-36b, Table 2.2-36c, and Table 2.2-36d of EIS Appendix 2.

Table 4.1-1 Summary of CEQA Impact Determinations for the Proposed Action and Action Alternatives

RESOURCE	PROPOSED ACTION	ALTERNATIVE 1: I-10 ROUTE	ALTERNATIVE 1: I-10 ROUTE SUB-ALTERNATIVE 1E	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE SUB-ALTERNATIVE 2E	ALTERNATIVE 3: AVOIDANCE ROUTE	ALTERNATIVE 3: AVOIDANCE ROUTE SUB-ALTERNATIVE 3M	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE SUB-ALTERNATIVE 4K, 4L, 4M, 4N, 4P	NO ACTION ALTERNATIVE
California Segments	p-15w, p-16, p-17, p-18	ca-04, ca-05, ca-06, ca-07, ca-09, x-09 and x-19	ca-01, ca-04, ca-06, ca-07, ca-09, x-09, x-10, x-12, and x-19	x-15 and x-16, ca-07, ca-09, x-19	x-13, x-15, ca-02, ca-07, ca-09, x-19	ca-01, ca-06, ca-07, ca-09; cb-10, x-11, x-12, x-19	ca-06, ca-07, ca-09; x-12, x-13, x-19	ca-06, ca-07, ca-09; x-12, x-13, x-19	i-08s, ca-04, x-09 cb-10 and x-11 ca-01 x-10 p-16, p-17, p-18	
Figure in TES (BLM 2019)	Figure 2.4-10	Figure 2.4-11 Alternative 1: I-10 Route	Figure 2.4-14 Alternative 1: I-10 Route Subalternatives – Colorado River and California Zone	Figure 2.4-15 Alternative 2: BLM Utility Corridor Route	Figure 2.4-18 Alternative 2: BLM Utility Corridor Route Subalternatives – Colorado River and California Zone	Figure 2.4-19 Alternative 3: Avoidance Route	Figure 2.4-23 Alternative 3: Avoidance Route Subalternatives – Colorado River and California Zone	Figure 2.4-24 Alternative 4: Public Lands Emphasis Route	Figure 2.4-28 Alternative 4: Public Lands Emphasis Route Subalternatives – Colorado River and California Zone	
Aesthetics	LSMM	LSMM	LS	LSMM Impacts in Arizona along the eastern portion (Segments i-01 through i-05) would be the same as Alternative 1. The large lattice H-frame structures would be a major modification and would dominate the views for travelers on SR 95, particularly in conjunction with the existing utility infrastructure. Would avoid Kofa NWR in Arizona.	LS Impacts to views from SR 95 reduced for portions of the line in Arizona. Would avoid Kofa NWR in Arizona.	LSMM Under Alternative 3, impacts to the I-10 corridor in the eastern portion of the Project Area would be the same as the Proposed Action. Alternative 3 would avoid any impacts to the SR 95 corridor. Impacts to the remainder of this route would the same as Alternative 2 in Arizona. Would avoid Kofa NWR in Arizona.	LS Would avoid Kofa NWR in Arizona.	LSMM Alternative 4 would remain south of and not impact the visual resources along the I-10 until Segment i-04; impacts were previously described as follows: Segment in-01 – Subalternative 1C Segments ca-06, ca-07, ca-09, x-19 – Alternative 3. All other segments would not impact views along I-10. Would avoid Kofa NWR in Arizona.	LS Would avoid Kofa NWR in Arizona.	NI

RESOURCE	PROPOSED ACTION	ALTERNATIVE 1: I-10 ROUTE	ALTERNATIVE 1: I-10 ROUTE SUB-ALTERNATIVE 1E	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE SUB-ALTERNATIVE 2E	ALTERNATIVE 3: AVOIDANCE ROUTE	ALTERNATIVE 3: AVOIDANCE ROUTE SUB-ALTERNATIVE 3M	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE SUB-ALTERNATIVE 4K, 4L, 4M, 4N, 4P	NO ACTION ALTERNATIVE
Agriculture	LSMM	LSMM	LSMM	LS	LS	LSMM	LSMM	LSMM Would not cross Kofa NWR; passes through an avoidance area for renewable energy. Inconsistent with La Paz County Zoning Plan. Affects more NRCS-class Farmland & solar facilities than Proposed Action. RMP amends included for ROW and VRM in AZ.	LSMM	NI
Air Quality, Greenhouse Gases, and Climate Change	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Biological Resources	LSMM Crosses Kofa NWR in Arizona.	LSMM	LSMM	LSMM If selected, the State Director will approve the Harwood's eriastrum Rare Plant Linear ROW Protection Plan and Fringe-toed Lizard Linear ROW Protection Plan to reduce or avoid impacts in CA. Avoids Kofa NWR in Arizona.	LSMM If selected, the State Director will approve the Harwood's eriastrum Rare Plant Linear ROW Protection Plan and Fringe-toed Lizard Linear ROW Protection Plan to reduce or avoid impacts in CA. Avoids Kofa NWR in Arizona.	LSMM	LSMM	LSMM	LSMM	NI

RESOURCE	PROPOSED ACTION	ALTERNATIVE 1: I-10 ROUTE	ALTERNATIVE 1: I-10 ROUTE SUB-ALTERNATIVE 1E	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE SUB-ALTERNATIVE 2E	ALTERNATIVE 3: AVOIDANCE ROUTE	ALTERNATIVE 3: AVOIDANCE ROUTE SUB-ALTERNATIVE 3M	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE SUB-ALTERNATIVE 4K, 4L, 4M, 4N, 4P	NO ACTION ALTERNATIVE
Cultural Resources	LSMM Segments p-17 and p-18 cross areas with known cultural resources.	LSMM	LSMM	LSMM Avoids Segments p-17 and p-18 in California.	LSMM Avoids Segments p-17 and p-18 in California. Subalternative 2D would result in a greater visual impact in AZ but a reduced potential to affect cultural resources by ground disturbance compared to Alternative 2.	LSMM	LSMM	LSMM	LSMM	NI
Tribal Resources	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Geology and Soils	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Hazards and Hazardous Materials	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Hydrology and Water Quality	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Land Use	LS Plan Amendment Needed to establish new utility corridor. Crosses Kofa NWR in Arizona.	LS	LS	LSMM Similar to the Proposed Action except CDCA Plan amendment would be required as specified in the Biological Resource Section. Within a BLM-designated utility corridor. Avoids Kofa NWR in Arizona.	LSMM Similar to the Proposed Action except CDCA Plan amendment would be required as specified in the Biological Resource Section. Additionally, this alternative would include VRM RMP amendments in AZ. Otherwise similar to Alternative 2.	LS	LS	LS	LS	NI

RESOURCE	PROPOSED ACTION	ALTERNATIVE 1: I-10 ROUTE	ALTERNATIVE 1: I-10 ROUTE SUB-ALTERNATIVE 1E	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE	ALTERNATIVE 2: BLM UTILITY CORRIDOR ROUTE SUB-ALTERNATIVE 2E	ALTERNATIVE 3: AVOIDANCE ROUTE	ALTERNATIVE 3: AVOIDANCE ROUTE SUB-ALTERNATIVE 3M	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE	ALTERNATIVE 4: PUBLIC LANDS EMPHASIS ROUTE SUB-ALTERNATIVE 4K, 4L, 4M, 4N, 4P	NO ACTION ALTERNATIVE
					Within existing BLM-designated utility corridor. Avoids Kofa NWR in Arizona.					
Mineral Resources	LS	LS	LS	LS	LS	LS	LS	LS	LS	NI
Noise	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Population and Housing	LS	LS	LS	LS	LS	LS	LS	LS	LS	NI
Public Services	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI
Recreation	LSMM Crosses Kofa NWR and wilderness area in Arizona.	LSMM	LSMM	LSMM Avoids Kofa NWR and wilderness area in Arizona.	LSMM Avoids Kofa NWR and wilderness area in Arizona.	LSMM	LSMM	LSMM	LSMM	NI
Transportation and Traffic	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	LSMM	NI

LS – All impacts under this environmental factor are less than significant
LSMM – Impacts under this environmental factor would be reduced to Less than Significant Levels after mitigation is implemented
NI – No Impact would occur under this environmental factor
S – Significant environmental impacts would occur under this environmental factor

4.1.1 Aesthetics

The Alternatives all have slightly greater impacts to aesthetics because unlike the Project, which would follow the existing DPV1 transmission line, under the Alternatives portions of the transmission line would be a new development added to a view that contains very little development; it would be a moderate to major impact on the views of nearby residents because the routes are all located closer to the I-10 corridor. Therefore, the Project is the environmentally superior alternative with respect to aesthetics.

4.1.2 Agriculture

Alternative 1, Subalternative 1E, Alternative 3, Subalternative 3M, Alternative 4, and Alternative 4 Subalternatives all are more impactful than the Project, as they would affect more residential land and NRCS-classified Farmland in California. Alternative 2 would impact the same amount of agricultural land as the Project in California. Therefore, the Project and Alternative 2 would be the environmentally superior alternatives with respect to agriculture.

4.1.3 Air Quality

The Project and the Alternatives would have similar impacts on air quality in California. Therefore, there is no environmentally superior alternative with respect to air quality in California.

4.1.4 Biological Resources

Some of the alternatives, including alternatives that include segments x-19, ca-9, and ca-07, cross known occurrences of Harwood's eriastrum and fringe-toed lizard habitat. The same sand dune vegetation community is found within the proposed Project ROW; however, there are no known occurrences of Harwood's eriastrum on the majority of the proposed Project ROW. Any of the alternatives that include Segment x-19 could have significant direct and indirect impacts on Harwood's eriastrum and fringed-toed lizard habitat and individuals. These potential impacts would be minimized through the same implementation of various APMs and BMPs, including avoidance measures included in the DRECP, that would occur under the Project as proposed. Therefore, there is no environmentally superior alternative with respect to biological resources in California.

4.1.5 Cultural Resources

All of the Alternatives are less impactful than the Project for cultural resources in California prior to the implementation of MMs and BMPs, as the routes would avoid Project Segments p-17 and p-18, which could have significant impacts on cultural resources. A total of 11 sites previously recommended or determined eligible for inclusion in the NRHP have been previously recorded within the 200-foot analysis corridor of Segment p-17. One of these sites contains known human remains and is within an existing access road. One NRHP-listed archaeological district and TCP containing petroglyphs and intaglios (the Mule Mountains Petroglyph and

Intaglio Site) is potentially sensitive to indirect visual impacts and is located within line of sight of Segment p-17. The types of sites located along Segment p-18 are similar to those described for Segment p-17, thus the impact analysis is the same as well. Depending on the viewshed and tower placement, indirect visual impacts to these sites could range between moderate and major. Therefore, the Alternatives would all be less impactful than the Project with respect to cultural resources in California.

4.1.6 Tribal Resources

None of the Alternatives are less impactful than the Project for Tribal resources in California. Therefore, there is no environmentally superior alternative with respect to Tribal resources in California.

4.1.7 Geology and Soils

The Project and the Alternatives would have similar impacts on geology and soils in California. Therefore, there is no environmentally superior alternative with respect to geology and soils in California.

4.1.8 Hazards and Hazardous Materials

There are a number of cleanup site database listings crossed by or within 1-mile of Action Alternative Segments (ca-01, ca-02, ca-04 through ca-07, ca-09, cb-10, i-08s, x-09 through x-13, x-15, x-16, and x-19) that are not present along the Proposed Action Segments (p-15e through p-18). Therefore, the Project is the environmentally superior alternative with respect to hazards and hazardous materials.

4.1.9 Electromagnetic Fields

The Project and the Alternatives would have similar impacts related to electromagnetic fields in California; the CPUC considers potential health effects related to electromagnetic fields to be speculative. Therefore, there is no environmentally superior alternative with respect to electromagnetic fields in California.

4.1.10 Hydrology and Water Quality

The Project and the Alternatives would have similar impacts on hydrology and water quality resources in California. Therefore, there is no environmentally superior alternative with respect to hydrology and water quality in California.

4.1.11 Land Use

The Project and the Alternatives would have similar impacts on land use in California. However, implementation of BMP-BIO-31, which would apply to Harwood eriastrum suitable habitat would be required in order to reduce biological impacts to a less-than-significant level for Alternative 2 and Subalternative 2E. BMP-BIO-31 would result in an amendment to the CDCA Plan. Subalternative 4D would not conform with BLM VRM classes and would include RMP amendments.

4.1.12 Noise

There would be noise impacts to rural residents near Ripley under the Proposed Action, some of which would be greater than ambient noise levels at NSRs; however, with APMs, BMPs, and MMs these impacts would be reduced to less than significant. Therefore, there is no environmentally superior alternative with respect to noise impacts in California.

4.1.13 Public Services

The Project and the Alternatives would have similar impacts on public services resources in California. Therefore, there is no environmentally superior alternative with respect to public services in California.

4.1.14 Recreation

The Project and the Alternatives would have similar impacts on recreation in California. Therefore, there is no environmentally superior alternative with respect to recreation in California.

4.1.15 Traffic and Transportation

The Project and the Alternatives would have similar impacts on traffic and transportation in California. Therefore, there is no environmentally superior alternative with respect to traffic and transportation in California.

4.2 NO PROJECT ALTERNATIVE

Like NEPA, CEQA requires an analysis of a no project alternative (Section 15126.6(e)) that considers the results of not implementing the Proposed Action or any of the action alternatives. Analysis of a no project alternative is intended to allow state and local agencies to compare the impacts and benefits of the Proposed Action and its alternatives to with the impacts and benefits on not implementing the project. Section 2.3 of the TES (BLM 2019) outlines the BLM's analysis of the No Action Alternative and is summarized below.

Under the No Project Alternative, the following actions related to implementing the Proposed Action or its alternatives would not occur:

- The BLM would not issue a ROW, and the CPUC would not consider using this document to grant the Applicant a Certificate of Public Convenience and Necessity.
- The CDCA Plan, as amended, would not be amended to allow Project construction.
- Adverse environmental impacts outlined in this appendix, and Chapter 4 of the TES would not occur.
- The CAISO-identified interconnection between the Delaney and Colorado River Substation would not be built, and the benefits of allowing new renewable energy resources in Arizona contribute to achieving California's Renewable Portfolio Standards would not be realized.
- Enhancements to the reliability and efficacy of the western transmission system would not occur.

4.3 NON-WIRES ALTERNATIVES

Assessment of the feasibility of a non-wires scenario is a statutorily required element of the CPUC's CPCN (PUC Section1002.3). Because CEQA requires the full range of alternatives to be assessed for their environmental impact, it is the CPUC's practice to assess the feasibility of the non-wires alterative as part of the CEQA environmental review.

The non-wires solution under consideration would require the installation of 2800 GWh of lithium ion batteries capable of charging during off-peak hours and discharging during expensive peak hours, thus accruing economic benefits by competing to reduce peak energy costs. These batteries would be installed in two locations where supply of energy is expensive during peak demand due to lack of competition between suppliers, specifically, near Alamitos and Huntington Beach combined cycle gas plants.

Revenue requirements for the Project are estimated at $491 million over the 40-year life of the Project[8]. The minimum estimated revenue requirement for a lithium ion storage alternative would cost $768 million, with a life span of no more than 20 years. Given that the cost of the Project was explicitly capped by the CAISO, in order to deliver the purported economic benefits, and the non-wires alternative is significantly more expensive, it fails to satisfy the primary objective of the Project.

Furthermore, a storage solution would fail to deliver numerous system reliability benefits including the following: 1) current storage is not yet capable of delivering congestion reduction benefits for extended power transmission maintenance outages; 2) there is no additional power transmission capacity for the Arizona California intertie; 3) there is no congestion relief for the Imperial Valley intertie; and 4) storage is inflexible with regard to delivery of energy or capacity to other parts of the CASIO system. In conclusion, the non-wires solution fails to satisfy the

[8] Revenue requirement is the amount of money that a utility/developer must receive to cover its costs, operating expenses, taxes, interest paid on debts owed to investors and, if applicable, a reasonable return (profit).

primary objective of the Project and would be inefficient when compared to the potential reliability benefits derived from the Project.

The EIS did not include a non-wires alternative as part of the alternatives screening process; therefore, the CPUC conducted the following analysis to support the findings outlined in this section. The assessment of the feasibility of a non-wires scenario is a statutorily required element of the CPUC's CPCN (PUC Section1002.3). PUC Section 1002.3 states that the "Commission shall consider cost effective alternatives to transmission facilities" the solution may include "demand-side alternatives such as…energy efficiency, ultra clean distributed generation and other demand reduction resources". It is the CPUC's practice to assess the feasibility of the non-wires alterative as part of the CEQA environmental review, because CEQA requires the full range of alternatives to be assessed for their environmental impact, assessing the non-wires alterative later in the process may lead to an inadequate environmental review.

In developing a non-wires alternative, it was assumed that any alternative that could displace large amounts of energy (like the Project) and satisfy the "ultra–clean" standard would require the deployment of energy storage, or a combination of storage and renewable energy. The operation and delivery of demand side programs (such as demand response and energy efficiency) that could displace large quantities of energy over and above existing LTPP[9] planning assumptions cannot be guaranteed for the 40-year life cycle of the Project; they were therefore not considered for this alternative.

DCRT proposes to deliver the following hierarchy of benefits:

- Provide economic benefit to the CASIO ratepayers;
- Provide reliability benefits to the wider system; and
- Reduce GHG emission.

A non-wires alternative needs to demonstrate broadly similar characteristics, with the economic benefits and costs determining an alternative's ultimate viability. Given that the Project seeks to positively affect CAISO ratepayers in the broadest terms, the CAISO Balancing Authority area was considered the scale at which the non-wires scenario needs to demonstrate positive effects.

Further, the non-wires scenario does not need to exactly mimic the Project but should bring broadly similar benefits to the ratepayers. The most parsimonious solution does not have to offset energy equivalent to the energy displaced by the line at each location identified in Data Request No. 3, but only offset the total equivalent energy. Since the market behavior of a non-wires solution may be very different from the Project, any combination of locations may deliver a viable scenario.

Therefore, the primary driver used to identify a potential non-wires alternative was the ability of an alternative to deliver similar energy benefits to the CASIO system. It was estimated that when

[9] LTPP – Long Term Procurement Plan - the biennial CPUC energy procurement planning proceeding.

in service, the line would displace 853 GWh[10] of energy within California with cheaper Arizona based electricity[11]; any non-wires would need to deliver similar amounts of energy and be capable of displacing the most expensive electricity.

4.3.1 The Scenario

To develop the non-wires alternative the annual generation profiles for the power generation sites that are most likely to be affected by the Project were reviewed[12]. In the 2026 simulation profiles, both Huntington Beach and Alamitos are operating close to full capacity for more than 80% of the year between 18:00 and 21:00 in the evening[13]. This generation profile provides the best opportunity for a storage solution to efficiently compete with existing generation, because it would maximize the likelihood for the use of the storage.

A plausible lithium-ion storage solution that could provide similar capacity (700 megawatts [MW]) and potentially displace a similar amount of energy (up to 975.1 gigawatt hours [GWh]) was identified. The minimum storage scenario would install 2,800 MWh of Li ion storage split equally between the two locations identified as benefiting most from the Project; no smaller solution that satisfied the energy parameters could be identified. For context, 400 MW of storage have been deployed in the United States between 2011 and 2015[14].

4.3.2 Analysis

The development of a non-wires scenario that satisfies energy displacement criteria highlights the contrast between a non-wires scenario and the Project for other crucial performance parameters, such as capital cost, capacity benefits, and operational value (including longevity and lifetime cost), as well as GHG reduction benefits and reliability improvement to the system.

4.3.3 Cost

Revenue requirements for the proposed line are estimated at $494 million over the 40-year life span of the line[15]. Since the Project is a cost capped line, any non-wires solution should demonstrate similar lifetime costs to ensure a like-for-like comparison. Based on assumptions developed in the Lazard 2016 white paper, a lithium ion storage-based alternative would have revenue requirements[16] of between 1.6-3.4 times those for the Project. The minimum estimated revenue requirement for a lithium ion storage-based non-wires alternative, that could deliver the equivalent energy and capacity would cost from $768 million-$1,673 million, with a life span of

[10] DCRT Response to Data Request 3 - List of locations where generation would be displaced.
[11] Draft Cost Benefits and Policy Benefits of the DCRT – Brattle 2017.
[12] DCRT Response to Data Request 4 – Baseline Annual Generation Profiles.
[13] IBID.
[14] Deployment of Grid-Scale Batteries in the United States – David Hart and Alfred Sarkissian for DOE 2016.
[15] Ten West Link Economic and Public Benefits Cost Analysis, July 31, 2017 Brattle Group
[16] Revenue requirement is the amount of money that a utility/developer must receive to cover its costs, operating expenses, taxes, interest paid on debts owed to investors and, if applicable, a reasonable return (profit).

no more than 20 years[17]. Other available estimates put the cost at 5-6 times greater[18]. Given that the Project was explicitly cost capped by the CAISO[19] in order to deliver the economic benefits, the non-wires solution performs extremely poorly with respect to potential economic benefits.

4.3.4 Reliability

Furthermore, the non-wires alterative would have limited contribution to the overall reliability across the CAISO system. While the non-wires solution may improve reliability in specific locations, it would not deliver system-wide reliability benefits, nor would it provide CAISO with the operational flexibility of the Project. The Project would provide additional capacity during scheduled prolonged outages on the Arizona – California transmission pathway. The non-wires alternative would not provide the following reliability benefits:

- Additional capacity for import/export from/to Central California (Pacific Gas and Electric [PG&E]) and from/to the Pacific Northwest are not realized.
- Lower benefit on congestion relief for Arizona-California and Nevada-California paths.
- Transmission system reinforcement is not provided. Vulnerability for outages is greater, increase probability of load or generation dropping.
- Ten-West Link transmission capacity is 5-6 times greater than the alternative storage capacity. New generation in Arizona and Nevada could not get to market in Southern California.
- New line support of transmission voltages not provided.
- Less contribution to spinning reserve requirements of Southern California.
- No contribution to intertie scheduling constraints.

4.3.5 Greenhouse Gas Emissions

The GHG emissions of the non-wires alternative is determined by the net difference between the energy profile during battery recharge and the energy profile of the displaced energy. Battery discharge would likely compete with peak gas generation usage, which would typically be between 18:00 hours and 21:00 hours, and recharge would occur between 0:00 hours and 16:00 hours[20]. Battery re-charge would use the cheapest available generation during any 24-hour cycle, this could be either excess solar that would otherwise be curtailed during daytime peak generation, or displaced gas generation available during off peak. Given the wide range of potential recharge opportunities it is not possible to determine whether the batteries would shift

[17] Based on assumptions in Lazard's Levelized Cost of Storage—Version 2.0 December 2016.
[18] Battery Cost Research, November 2017, Brattle Group
[19] CAISO 2013-2014 Transmission Plan.
[20] DCRT Response to Data Request 4 – Baseline Annual Generation Profiles.

the time of use or displace gas generation. Consequently, it is not possible to determine whether use of batteries would reduce GHG emissions by simply out competing gas plants.

4.3.6 Analysis

In conclusion, for the above economic and system reliability reasons, a non-wires solution was screened out and not carried forward for analysis.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE (CEQA)

CEQA Guidelines Section 15126.6(e)(2) requires the identification of an "environmentally superior alternative." As discussed in Section 4.2, selection of the no project alternative would avoid all of the adverse impacts disclosed in Chapter 4 of the TES (BLM 2019), as well as those identified in this appendix. Therefore, the no project alternative is the environmentally superior alternative. Section 4.2 also discloses that if the no project alternative were to be selected, none of the Project's benefits would be realized.

To balance the Project's benefits with its potential adverse effects, the CEQA Guidelines Section 15126.6(e)(2) indicates that "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify the environmentally superior alternative among the other alternatives." Based on the environmental analysis, Alternative 2, the BLM Utility Corridor Route, utilizing Subalternative 4D has been identified as the environmentally superior Alternative. This is consistent with the BLM's finding that Alternative 2, utilizing Subalternative 4D, is the Agency Preferred Alternative in the EIS.

A description of Alternative 2, the BLM Utility Corridor Route, utilizing Subalternative 4D, is outlined in the EIS. Subalternative 4D, that would be utilized in conjunction with Alternative 2, is located in Arizona, and is included to reduce adverse impacts on visual and recreation resources and that would occur if the Project or Alternative 2 were selected. Therefore, environmental impacts in California would be the same under Alternative 2 and Alternative 2 with Subalternative 4D included. As stated in the EIS, under the Agency Preferred Alternative/Environmentally Superior Alternative, the BLM would approve a total of 21.8 miles of 200-foot wide ROW within existing designated utility corridors along the following segments in California: p-15 through p-16; x-15 and x-16; ca-07 and ca-09; and x-19.

In California, the Agency Preferred/Environmentally Superior Alternative is comprised of segments selected to:, emphasize the use of BLM utility corridors; consolidate development and disturbance with existing disturbance, such as along portions of the already impacted DPV1 transmission line route; avoid residential and other development east and south of Blythe; consolidate development along the existing DPV1 transmission line route across private lands in California; and avoid the culturally sensitive area in the vicinity of the Mule Mountains southwest of Blythe (Segments p-17 and p-18).

While the use of alternative Segments x-19, ca-9, and ca-07, in lieu of Segments p-17 and p-18, provides the advantages listed above, the alternative segments cross known occurrences of Harwood's eriastrum and fringe-toed lizard habitat that would not be crossed by the Project; however, habitat for these species also exists with the Project ROW. To further reduce and avoid

potential impacts to biological resources resulting from the implementation of the Agency Preferred/Environmentally Superior Alternative, the BLM would amend the CDCA Plan to state:

> The Ten West Link Project is authorized to include construction within 0.25 mile of occurrences of Harwood's eriastrum, provided that a Linear Right-of-Way Rare Plant Protection Plan for Harwood's eriastrum is developed and approved by the California State Director. The Rare Plant Linear ROW Protection Plan would meet the DRECP goal of promotion of the ecological processes in the BLM DA that sustain vegetation types of focus and BLM special status species and their habitat. The Rare Plant Linear ROW Protection Plan would have the objectives of:
>
> 1. Avoidance of take of Harwood's eriastrum individuals to the maximum extent practical[1]; and
>
> 2. Avoidance of impacts to Harwood's eriastrum suitable habitat to the maximum extent practical.

If Alternative 2 is selected, the California State Director will approve the Harwood's eriastrum Rare Plant Linear ROW Protection Plan and Fringe-toed Lizard Linear ROW Protection Plan prior to ground or vegetation disturbing activities commencing on public lands in California. Doing so will avoid impacts to known populations of Harwood's eriastrum located within the proposed ROW for Alternative 2, reducing potential Project-related impacts to less than significant.

While Alternative 2 crosses known occurrences of Harwood's eriastrum and fringed-toed lizard habitat, it would also avoid impacts to sensitive cultural resources located along Segments p-18 and p-17, when compared to the Project. Additionally, Alternative 2 is located within a BLM-designated utility corridor in California and, like the Project, is mostly located adjacent to existing utility lines. Alternative 2 would reduce impacts on cultural resources and visual resources in Arizona (by avoiding the Kofa NWR), while impacts on land use, tribal resources, hazards, noise, and visual resources would be similar, when compared to the Project. Alternative 2, Subalternative 4D would also reduce visual resource impacts (though amendments to the Yuma RMP would be included) and avoid biological, recreation, and land use impacts associated with crossing the Kofa National Wildlife Refuge in Arizona, when compared to the Project. Therefore, Alternative 2, the BLM Utility Corridor Route, utilizing Subalternative 4D would be the environmentally superior alternative under CEQA.

A comparison of Alternative 2 with Subalternative 4D is provided in the EIS, including environmental impacts and associated benefits.

[1] See definition of maximum extent practical in the Glossary of Terms, EIS Appendix 6.

5.0 OTHER CEQA

This section describes other statutorily required topics, including growth-inducing impacts. It also provides a discussion of energy conservation as required by Section 15126.4 of the CEQA Guidelines.

5.1 GROWTH INDUCING IMPACTS

A project could induce growth if it results in additional development, such as an increase in population, employment, and/or housing above and beyond what is already anticipated in local and regional land use plans or in projections made by regional planning authorities, irrespective of the Project. As detailed in the EIS, the Project is responding to CAISO power demands. Under CEQA (Section 15126.2(d)), a project would be growth inducing if it:

- Directly or indirectly fosters economic or population growth or the construction of additional housing;
- Taxes community facilities to the extent that the construction of new facilities would be necessary;
- Removes obstacles to population growth; or
- Encourages or facilitates other activities that cause significant environmental effects.

Typical growth-inducing factors may include the extension of urban services or transportation infrastructure to a previously unserved or under-served area or the removal of major barriers to development. As described in Section 4.15 of the TES (BLM 2019), the Project would not build or induce housing or otherwise result in growth or secondary development. This section evaluates the Project's potential to create such growth inducements. It should "not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment" (CEQA Section 15126.2(d)).

The CPUC's CEQA objectives for the Project are as follows:

- Construct and operate an economically and technically feasible 500kV electric transmission line and associated infrastructure with conductor capacity of approximately 3,200 MW between the Colorado River Substation and the Delaney Substation that meets CAISO-specified electrical characteristics.
- Complete construction and achieve commercial operation in accordance with the terms of the Approved Project Sponsor Agreement with CAISO.
- Provide new transmission infrastructure to facilitate development and interconnection to the bulk transmission system for new renewable energy resources in the region.
- Develop, construct, maintain, and operate transmission infrastructure that is consistent with the laws, regulations, orders, guidelines, standards, and criteria of the NERC, WECC, Federal Energy Regulatory Commission (FERC), CAISO, ACC, and CPUC

and that meets the substation interconnection requirements of APS and SCE and in-compliance with Project permits, licenses, and approvals.

- Utilize existing utility corridors, roads, and infrastructure to the extent feasible to meet the other above-listed Project objectives wherever consistent with minimizing impacts.

The Project responds to growth and demand trends identified by CAISO, and state and federal reliability standards require continuous availability of reliable power. It accommodates anticipated growth – including renewable energy facilities in the vicinity of Colorado River Substation – and no significant Project-related growth-inducing impacts are anticipated.

Further, the applicant would hire a local construction workforce, and outside contractors would only be required if local contractors were not available. Due to the temporary nature of the employment, workers are not expected to relocate to the area in numbers that would result in a significant impact (Section 4.15 of the TES [BLM 2019]). In the event that a small number of workers did relocate to the area, the number would be very minor compared to the area's total population, and numerous temporary lodging facilities, such as hotels and motels, would be available. New housing facilities would not be required.

The Project would not indirectly induce growth as any increases in housing associated with additional electric capacity would be subject to local approvals and permits.

5.2 ENERGY CONSERVATION

Public Resources Code Section 21100(b)(3) requires EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. The Project would accommodate nearby renewable energy generation facilities, helping to offset the use of nonrenewable resources and contribute to an overall reduction of nonrenewable resources currently used to generate electricity. APM AQ-02 would implement measures encouraging use of natural gas- or electric-powered vehicles for light-duty trucks where feasible and available.

The USEPA regulates non-road diesel engines. The USEPA has no formal fuel economy standards for non-road (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affect fuel economy. In 1994, the USEPA adopted the first set of emissions standards (Tier 1) for all new non-road diesel engines greater than 37 kilowatts (50 hp). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing NOx emissions from these engines by 30 percent. The USEPA has since adopted more stringent emission standards for NOx, hydrocarbons, and particulate matter from new non-road diesel engines. This program includes the first set of standards for non-road diesel engines that are less than 37 kW. It also phases in more stringent Tier 2 emission standards from 2001 to 2006 for all engine sizes and adds yet more stringent Tier 3 standards for engines that are between 37 and 560 kW (50 and 750 hp) from 2006 to 2008. These standards will further reduce non-road diesel engine emissions by 60 percent for NOx and 40 percent for PM from Tier 1 emission levels. In 2004, the USEPA issued the Clean Air Non-road Diesel Rule. This rule, which took effect in 2008 and was fully phased in by 2014, will cut emissions from non-road diesel engines by more than 90 percent. These emission standards are intended to promote advanced clean technologies

for non-road diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

Construction activities associated with the Project would result in the consumption of petroleum-based fuels. There are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the state.

Construction operations are expected to last 16 months in total. Fuel consumption would occur from off-road vehicles such as backhoes and scrapers, as well as from on-road commuter and delivery traffic. All fuel usage calculations were derived by establishing the liters per machine hour (LPMH). LPMH equals the kilogram of fuel used per brake horsepower/hour (K) x gross horsepower (GHP)_x load factor (LF)/ weight of fuel (KPL) with the exception of the Chinook and MD500 helicopters. Hourly consumption rates were obtained via the Aviation Training Library[21] and multiplied by the number of units, hours per day and total working days.

All equipment was established for each construction element of the Project beginning with geotechnical investigation and ending with substation equipment installation. The LPMH value for each piece of equipment was determined and converted to gallons per hour. Note the K and KPL values were established for both diesel and gasoline (used for pickups) from Table 3.3 of the Cost Control in Forest Harvesting and Road Construction Manual developed by the Food and Agriculture Organization of the United Nations (FAO 1992). The total number of each piece of equipment was tallied along with hours per day of operation and the total number of days for each construction phase.

During the 16-month construction, it is estimated that 28.34 million gallons of off-road diesel fuel and 1.25 million gallons of gasoline would be consumed. Various stages of construction would utilize more equipment than others. Therefore, fuel consumption is not proportional by month and would vary based on intensity of each phase.

On-road fuel usage associated with construction was determined from the Air Quality Baseline Report (HDR 2017b). The report estimated that each commuting worker would travel 100 miles each workday. Based on total number of crew days, the estimated commuter mileage over 16 months was 3.4 million miles. It was also assumed that the ratio for passenger cars to light duty trucks was 1:1 or 50% of each. Delivery truck mileage was determined by equipment transportation estimates. The total daily average fuel consumption estimated is 2,215 gallons and 1.06 million gallons over 16 total months (mostly from delivery vehicles).

It is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

[21] Aviation Training Library – 400 gal/hr for the Chinook and 29 gal/hr for the MD500 https://www.iat.gov/aircraft_library/index.asp

Vehicle fuel efficiency is regulated at the federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards. The fuel economy standard for new passenger cars has been 27.5 miles per gallon since 1990. The fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon since 1996. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Operations and maintenance activities would occur at two different time cycles. Typical procedures would occur annually while more extensive operations would result every five years. It is estimated that 85,628 gallons from off-road activities would be consumed annually. Every five years would see an additional 63,745 gallons of fuel consumed.

On-road activities associated with operations and maintenance would also occur annually and once every five years. Commuter travel is estimated to consume 431 gallons of gasoline each year and approximately 3.4 gallons per day. During the five year cycle an additional 371 gallons of gasoline would be consumed; as would 656 gallons of diesel fuel from delivery trucks. As such, it would be expected that vehicular fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use in the region.

Once operational, the Project would facilitate development and interconnection to the bulk transmission system for new renewable energy resources in the region and facilitate development of new renewable energy. Interconnection of utility-scale renewable energy projects would offset the Project's construction-related fossil fuel consumption and help California, and other states in the California Independent System Operator balancing authority network, further reduce their reliance on energy sources with higher carbon footprint.

By facilitating the transmission of renewable energy resources, the Project would be consistent with state policies to encourage renewable energy. The state has established goals for the percentage of renewable energy resources that comprise retail electricity sales in California. These goals are described below.

Senate Bill (SB) 1078 established the California Renewables Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

6.0 MITIGATION MONITORING AND REPORTING PROGRAM

The purpose of this MMRP is to ensure effective implementation of the applicant proposed APMs and MMs required by the CPUC that the applicant has agreed to implement as part of the Project. Appendix 2A of the EIS lists the APMs/BMPs that would be implemented and included as part of the Project. Table 7-1 details the monitoring and reporting requirements for each APMs/BMPs and MMs, including:

- Each potential impact identified in Section 2;
- APMs/BMPs and MMs that the applicant are required to implement as part of the Project;
- Monitoring requirements; and
- Timing for implementation of the APMs/BMPs and MMs.

A BLM or CPUC-designated environmental monitor (or monitors) will monitor construction of the Project to ensure full implementation of each APM and MM. In all instances where non-compliance occurs, the designated environmental monitor will issue a warning to the construction supervisor and the applicant's project manager. Continued non-compliance will be reported to the BLM and CPUC project managers. Any decisions to halt work due to non-compliance will be made by the BLM and CPUC. The designated environmental monitor will keep a record of any incidents of non-compliance with mitigation measures, APMs, or other conditions of project approval. Copies of these documents will be supplied to the applicant. This MMRP is a draft program and would be finalized if the BLM and CPUC approve the Project and issue a ROW/CPCN. At that time, final MMs would be incorporated into the program and the roles and responsibilities for their implementation refined.

The following procedure will be observed for dispute resolution between CPUC staff and the project proponent:

- Disputes and complaints should be directed to the CPUC Project Manager for resolution.
- Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the approved project.

Table 6.1-1 Applicant Proposed Measures, Best Management Practices, Conservation and Management Actions, and Mitigation Measures for the Project

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Aesthetics				
Impact AES-3	**APM AES-01: Vegetation Removal and Grading.** During Project construction activities, grading and the amount of existing vegetation cleared from the route would be kept to the minimum required for access by Project construction as much as practicably possible. This approach is further described in the BIO-14. Grading would occur as minimally as practicable and would follow the existing land contours as much as possible.	Confirm that grading is minimal.	Construction	The Applicant
Impact AES-3	**APM AES-02: Work Area Reclamation.** On completion of the Project, all construction material and debris from the permanent easement and temporary staging areas would be removed and the areas restored. All work areas, and areas around new transmission structures, would be re-graded to previous land contours and re-vegetated to and restored them to an appearance that would blend into the overall landscape context. This approach is further described in the BIO-15 to as close to preconstruction conditions as feasible.	Verify that the Applicant removes all construction material, re-grade, re-vegetate, and restore all disturbed land.	Post-construction	The Applicant
Impact AES-3	**BMP AES-02: Work Area Reclamation.** Work area reclamation would include pulling and tensioning sites; all disturbed work areas associated with the Project.	Confirm that all disturbed work areas are reclaimed.	Post-construction	The Applicant
Impact AES-3 Impact AES-4	**BMP AES-04: Visual Contrast.** Color treatment of transmission structures would be applied in all areas deemed necessary by the BLM. The BLM would select/approve the color treatment to be applied under AES-04. Color treatment would be applied to Project components, such as the SCS and fencing. All conductor would be non-specular, and all structures, whether color treated or not, would have a dull, non-reflective surface.	Ensure that all transmission structures are color treated in accordance with BLM requirements.	Design Construction	The Applicant
Impact AES-3	**APM AES-05: Location.** Collocate the transmission line as close as possible to	Confirm that transmission	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	existing transmission lines of similar size and design (while maintaining the required 250-foot setback) to minimize the overall visual impact of the Project on the surrounding areas. Keeping the proposed transmission line within the same general corridor as existing transmission lines would reduce the spread of visual impacts from areas previously not affected. Collocating with existing transmission lines would also reduce the need to construct new access roads and their associated visual impacts. (Captures BLM BMP for Reducing Visual Impacts of REFs 6.2.10 – Collocate Linear Features in Existing ROWs or Corridors.)	line is collocated as close as possible to existing transmission lines.		
Impact AES-3	**APM AES-06: Siting Staging and Laydown Areas.** The Project will avoid siting, staging and laydown areas in visually sensitive areas to the extent practicable. Staging areas would be located close to transportation access points and would be sited to take advantage of previously disturbed areas to the extent practicable. Staging areas would be located close to transportation access points and would be sited to take advantage of previously disturbed areas to the extent practicable.	Confirm staging and laydown areas are not located in visually or biologically sensitive areas and are previously disturbed.	Design	The Applicant
Impact AES-3	**BMP AES-06: Siting Staging and Laydown Areas.** Additionally, AES-06 would apply to all Project work areas. Also, work areas would be located to minimize impacts, including but not limited to biological and visual.	Confirm staging and laydown areas are not located in visually or biologically sensitive areas and are previously disturbed.	Design	The Applicant
Impact AES-3	**BMP AES-07: Avoid Siting Linear Features in the Centers of Valley Bottoms and on Ridgetops.** The eye follows strong natural lines in the landscape, and these lines and associated landforms can “focus” views on particular landscape features. For this reason, linear facilities associated with renewable energy projects, such as transmission line ROWs, should be sited to avoid running across the centers of valley bottoms, and to avoid ridgetop	Confirm linear features are not sited in the centers of valley bottoms or on ridgetops.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	bisection (i.e., routing the ROWs perpendicular to and over ridgelines).			
Impact AES-3	**BMP AES-08: Avoid Skylining.** "Skylining" of transmission/communication towers and other structures should be avoided. Transmission/communication towers and other structures should not be placed on ridgelines, summits, or other locations where they would be silhouetted against the sky. Skylining draws visual attention to the Project elements and can greatly increase visual contrast. Siting should take advantage of opportunities to use topography as a backdrop for views of facilities and structures to avoid skylining. Roads may be less visible if located along ridgetops, but if they are located on the ridge face, they can be highly visible because of increased cut, fill, and side cast material.	Confirm "skylining" of transmission/ communication towers and other structures is avoided.	Design	The Applicant
Impact AES-3	**BMP AES-09: Site Linear Facilities along Natural Lines within the Landscape.** Siting of facilities, especially linear facilities (e.g., transmission lines, pipelines, roads), should take advantage of natural lines within the landscape (e.g., natural breaks in the landscape topography, the edges of clearings, or transitions in vegetation). Siting of facilities on steep slopes should be avoided. Siting linear facilities along naturally occurring lines in the landscape can reduce apparent contrast through repetition of the line element or through combination of multiple line elements into a single line element. Facilities sited on steep slopes are often more visible (particularly if either the project or viewer is elevated); they may also be more susceptible to soil erosion, which could also contribute to negative visual impacts.	Confirm that linear facilities are not on sited on steep slopes.	Design	The Applicant
Impact AES-3	**BMP AES-10: Use Monopole, Guyed, and Lattice Electric Transmission Towers Appropriately.** Consideration should be given to the appropriate choice of monopoles versus guyed or lattice towers for a given landscape setting. Lattice or guyed towers are less visually obtrusive on the rural landscape than monopoles, especially when placed half a mile or more from KOPs and against a landscape backdrop. When transmission towers are placed within a half mile or less from KOPs, then monopoles would occupy a smaller	Confirm that monopole, guyed, and lattice electric transmission towers are used appropriately.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	field of view than lattice towers. Monopoles are often more appropriate within built or partially built environments, while lattice or guyed towers tend to be more appropriate for less-developed rural landscapes, where the latticework would be more transparent against natural background textures and colors. Where transmission facilities are to be collocated in ROWs or corridors, and the existing ROW or corridor has either lattice towers only, guyed towers only, or monopoles only, the same tower type should be selected for new transmission facilities within the ROW/corridor.			
Impact AES-3	**BMP AES-11: Use Air Transport to Erect Transmission Towers**. In areas of the highest visual sensitivity, air transport capability should be used to mobilize equipment and materials for clearing, grading, and erecting transmission towers. The use of air transport capability preserves the natural landscape conditions between tower locations and may reduce the need for construction roads.	Ensure that air transport is used to erect transmission towers.	Construction	The Applicant
Impact AES-3	**BMP AES-12: Reclamation to Reduce Visual Impacts.** The Reclamation plan for the Project would include measures designed to reduce long-term impacts to visual resources.	Review adequacy of and implementation of Reclamation plan.	Pre-construction	The Applicant
Impact AES-3	**BMP AES-13: Shifts in Alignment to Reduce Visual Impacts.** The specific location of the Project within the study area would be determined based on micro-siting of Project components and new disturbance associated with access and work areas to reduce, minimize, or eliminate visual impacts.	Ensure that the project alignment reduces visual impacts.	Design	The Applicant
Impact AES-3 Impact AES-4	**APM AES-15: Lighting.** Limited lighting would be used during night construction to ensure safe working conditions while limiting the overall lighted area. To the extent practicable, lighting would be directed in a downward position to minimize impacts to night sky.	During night construction ensure that limited lighting is used, and that lighting is directed downward.	Construction	The Applicant
Impact AES-3	**CMA LUPA-VRM-1.** Manage visual resources in accordance with the VRM	Ensure that visual resources are managed in	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Classes shown on Figure 9 (See CDCA Plan).	accordance with the VRM classes.		
Impact AES-3	**CMA LUPA-VRM-2.** Ensure that activities within each of the VRM Class polygons meets the VRM objectives described above, as measured through a visual contrast rating process.	Ensure that activities within each of the VRM Class polygons meets the VRM objectives described above.	Design	The Applicant
Impact AES-3	**CMA LUPA-VRM-3.** Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other BMPs to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for reducing visual impacts see the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on Bureau of Land Management-Administered Lands"*, or the most recent version of the document or BMPs for VRM, as determined by BLM.	Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located.	Design	The Applicant
Impact AES-3	**CMA DFA-VPL-VRM-1.** Encourage development in a planned fashion within DFAs (e.g., similar to the planned unit development concept used for urban design—i.e., in-fill vs. scattered development, use of common road networks,	Encourage development in a planned fashion within DFAs.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Generator Tie Lines etc., use of similar support facility designs materials and colors etc.) to avoid industrial sprawl.			
Impact AES-3	**CMA DFA-VPL-VRM-2**. Development in DFAs and VPLs are required to incorporate visual design standards and include the best available, most recent BMPs, as determined by BLM (e.g. Solar, Wind, West Wide Energy Corridor, and Geothermal PEISs, the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", and other programmatic BMP documents).	Ensure that the Project incorporates visual design standards and include the best available, most recent BMPs, as determined by BLM.	Design	The Applicant
Impact AES-3	**CMA DFA-VPL-VRM-3.** Required visual resource BMPs. All development within the DFAs and VPLs will abide by the BMPs addressed in the most recent version of the document "*Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", or its replacement, including, but not limited to the following: • Transmission: o Color-treat monopoles Shadow Gray per the BLM Environmental Color Chart CC001 unless a more effective color choice is selected by the local Field Office VRM specialist. o Lattice towers and conductors will have non-specular qualities. o Lattice Towers will be located a minimum of 3/4 mile away from KOPs such as roads, scenic overlooks, trails, campgrounds, navigable rivers, and other areas people tend to congregate and located against a landscape backdrop when topography allows.	Ensure that the transmission Visual Resource BMPs are implemented.	Design	The Applicant
Impact AES-3	**CMA DFA-VRM-1**. Manage all DFAs as VRM Class IV to allow for industrial scale development. Employ BMPs to reduce visual contrast of facilities.	Ensure that BMPs to reduce visual contrast are	Design	

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
		implemented.		
Impact AES-3	**CMA DFA-VRM-2.** Regional mitigation for visual impacts is required in DFAs. Mitigation is to be based on the VRI Class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the activity area as it stands at the time the ROD is signed for the DRECP LUPA. Compensatory mitigation may take the form of reclamation of other BLM lands to maintain (neutral) or enhance (beneficial) visual values on VRI Class II and III lands. Other considerations may include acquisition of conservation easements to protect and sustain visual quality within the viewshed of BLM lands. The following mitigation ratios will be applied in DFAs: • VRI Class II 1:1 ratio	Ensure that a 1:1 ratio is applied for visual impact mitigation.	Design	The Applicant
Impact AES-3	**MM VIS-03:** Apply surface treatments (such as Permeon, or an approved equal) to newly exposed rock and gravel to blend with surrounding rock face and minimize visual impact of attention-attracting disturbance. Standards for Success: Long-term land scaring is prevented during construction and the surface treatment shall blend with the exiting natural environment, not detract from the existing visual environment.	The Applicant shall verify that Permeon will be used throughout construction. If Permeon is not available, then the Applicant shall identify a suitable replacement treatment that is approved by the CPUC and BLM prior to any ground disturbing activities.	The use of surface treatments shall be utilized throughout any ground disturbing activities.	The Applicant shall ensure that appropriate surface treatment is utilized throughout ground disturbing activities to prevent long-term land scaring.
Impact AES-3	**MM VIS-04.** Limit height of structures to what is absolutely necessary for safety and operation in order to minimize skylining and reduce the need for beacons to protect dark sky resources and maintain astronomical viewing opportunities. Standards for Success: Prevention of long-term impacts associated with	The Applicant shall submit design plans to the CPUC who shall review the plans and approve heights. If heights are required that will include	Heights of structures shall be determined during the design phase, prior to	The Applicant shall be responsible for implementation of this measure during the design phase, to avoid design

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	unnecessary heights for the transmission lines and/or reduction of operational lighting impacts.	the use of night beacons; the Applicant shall incorporate these lighting requirements consistent with APM AES-15.	construction.	conflicts that could result in unnecessary heights of transmission lines.
Impact AES-3	**MM VIS-06:** Use structure type to match existing structures and reduce form contrast. Standards for Success: Prevention of long-term impacts associated with structures standing out in the natural visual environment. Instead, any structures shall blend with the existing visual environment.	The Applicant shall ensure that structures are built to blend with surrounding structures (if any) including buildings, other transmission lines (such as monopole, guyed, or lattice electric transmission lines), and roadways which shall be consistent with BMP AES-10. Colors and finishes of Project structures shall consist of natural colors (i.e. browns and greys).	Structure type and finishes shall be determined during the design phase, prior to construction.	The Applicant shall be responsible for implementation of this measure prior to construction, during the design phase, to avoid design conflicts that could result in Project structures that do not match the existing visual environment.
Impact AES-3 Impact AES-4	MM VIS-CEQA-1: Implement Aesthetics Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.1.2 and 2.1.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to aesthetic and visual resources. These APMs, BMPs,	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	and CMAs include; APM AES-01, APM AES-02, BMP AES-02, BMP AES-04, APM AES-05, APM AES-06, BMP AES-06, BMP AES-07, BMP AES-08, BMP AES-09, BMP AES-10, BMP AES-11, BMP AES-12, APM AES-15, CMA LUPA-VRM-1, CMA LUPA-VRM-2, CMA LUPA-VRM-3, CMA DFA-VPL-VRM-1, CMA DFA-VPL-VRM-2, CMA DFA-VPL-VRM-3, CMA DFA-VRM-1, CMA DFA-VRM-2. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.	weekly reports shall be compiled and submitted to the BLM and CPUC monthly.		CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.
Agriculture				
Impact AG-5	MM AG-CEQA-1: Coordination with the Metropolitan Water District of Southern California. The Applicant shall consult with the MWD of Southern California for any Project work occurring within lands under this jurisdiction of the MWD of Southern California during the development of the Project design phase. If Project work shall occur within lands designated as under the jurisdiction of the MWD of Southern California, the Applicant will work with the MWD of Southern California to locate transmission structures adjacent to existing	The Applicant shall keep a record of consultation with MWD of Southern California, including during design and Project implementation. If any further measures are identified and/or actions are taken for construction	Consultation with MWD of Southern California shall occur during the design phase of the Project and notification of construction shall	The Applicant shall be responsible for consultation and coordination with MWDSC.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	electrical infrastructure to consolidate potential obstructions to the movement of agriculture machinery or other agricultural activities, locate access roads and staging areas away from agricultural lands and operations, and limit the use of pesticides near agricultural lands. Further if dust control measures (see MM AQ-CEQA-1 under Section 2.3.7) or weed control measures (See MM VEG-CEQA-1 under Section 2.4.6) are required for Project work occurring within MWD of Southern California's jurisdiction, these measures will also require review and approval by the MWDSC for work within agricultural lands under their jurisdiction. Specifically, if Project work will occur within MWD of Southern California lands that are used for farming organic crops, chemicals used within these lands shall be prohibited. The Applicant will work with the MWD of Southern California to identify these lands during the Project design phase and avoid use of chemicals through weed control in these lands. The Applicant shall inform the MWD of Southern California 30-days prior to the start of construction activities that may occur within agricultural lands under the jurisdiction of the MWDSC and follow with a report submitted to the MWD of Southern California upon completion of the construction activities within these lands. Successful implementation of this MM shall prevent short and long-term impacts to agricultural lands under the jurisdiction of the MWD of Southern California. Standards for Success: Prevention of short- and long-term impacts associated with agricultural lands under the jurisdiction of the MWD of Southern California.	work within agricultural lands under jurisdiction of MWD of Southern California, these measures and/or actions will be documented and kept on file by the Applicant.	be given to MWD of Southern California 30-days prior to the start of construction activities that will occur within agricultural lands under the jurisdiction of MWD of Southern California.	
Air Quality and Climate Change				
Impact AIR-1 Impact AIR-4	**APM AQ-01: Fugitive Dust (quantitatively included in the emissions estimate).** The following control measures would be implemented, as applicable, to reduce PM10 and PM2.5 emissions during construction, in conjunction with an Erosion, Dust Control, and Air Quality Plan and Fugitive	Review adequacy of and implementation of Erosion, Dust Control, and Air Quality Plan and	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Dust Control Plan for the Project. Basic control measures: The following measures would be implemented at all construction sites: • Water active construction areas sufficiently to minimize fugitive dust. • Water for dust control would include three 2,000-gallon water trucks that would water access roads twice a day, 5 days a week, for 18 months. • Cover trucks hauling soil, sand, and other loose materials and require all trucks to maintain at least 6 inches of freeboard. • Pave, apply water, or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites to minimize fugitive dust. Enhanced control measures: In addition to the "basic" control measures listed above, the following control measures may be implemented at all construction sites greater than 4 acres: • Water, hydroseed, or apply nontoxic soil stabilizers to inactive construction areas to minimize fugitive dust. • Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles. • Limit traffic speeds on unpaved roads. • Install sandbags or other erosion-control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible, consistent with seasonal survival considerations.	Fugitive Dust Control Plan. Verify that fugitive dust control measures are implemented.		

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Optional control measures: Depending on the extent of dust generation, implementation of the following APMs may occur at larger construction sites, near sensitive receptors (residences or other occupied buildings, parks, or trails within 1,000 feet of earthmoving operations that are substantial; for example, more than excavation for tower foundations), or in situations which for any other reason may warrant additional emissions reductions: • Install wheel washers for all existing trucks or wash off the tires or tracks of all trucks and equipment leaving the site. • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour (mph). • Limit the area subject to excavation, grading, and other construction activity at any one time.			
Impact AIR-1 Impact AIR-4	**BMP AQ-01: Dust Palliatives (quantitatively included in the emissions estimate).** Dust palliatives would be applied, in lieu of water, to inactive construction areas (disturbed lands or soil stockpiles that are unused for 14 consecutive days). Dust palliatives would be chosen by the Dust Control Site Coordinator and or construction contractor. Dust palliatives would be environmentally safe; comply with Federal, State, and local regulations; and would not produce a noxious odor or contaminate surface water or groundwater and, therefore, would not pose runoff concerns during rain events. Application rates for dust palliatives would follow the manufacturer's recommendations. MSDS/SDSs for any palliatives would be available on site and provided to the BLM and MDAQMD 14 days prior to use.	Ensure that approved dust palliatives are applied in lieu of water to inactive construction areas. Ensure that Safety Data Sheets (MSDS/SDS) are completed and submitted to the BLM and MDAQMD 14 days prior to use.	Construction	The Applicant
Impact AIR-1	**APM AQ-02: Exhaust Emissions (qualitatively included in the emissions estimate).** The following measures would be implemented during construction to further minimize greenhouse gas emissions (carbon dioxide, methane, and	Confirm exhaust emissions measures are implemented.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	nitrous oxide) per California AB32 and criteria air pollutants from vehicle and machinery and in conjunction with the Construction Emissions Mitigation Plan for the Project: • Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time depends on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Project would apply a "common sense" approach to vehicle use, such that idling is reduced as far as possible below the maximum of 5 consecutive minutes required under Title 13 of CCR Section 2485 (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine would be shut off. • Encourage use of natural gas- or electric-powered vehicles for light-duty trucks where feasible and available.			
Impact AIR-1 Impact AIR-4	**APM AQ-03: Minimize Potential Naturally Occurring Asbestos Emissions (qualitatively included in the emissions estimate).** The following measures would be implemented prior to and during construction to minimize the potential for naturally occurring asbestos emissions, in conjunction with an Asbestos Dust Mitigation Plan: • Prior to construction, samples of the construction area would be analyzed for the presence of asbestos, serpentinite, or ultramafic rock. • If asbestos, serpentinite, or ultramafic rock is determined to be present, all applicable provisions of the ATCM for construction, grading,	Confirm that naturally occurring asbestos emissions measures are implemented in conjunction with the Asbestos Dust Mitigation Plan.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	quarrying, and surface mining operations (17 CCR 93105) would be implemented, including the following: • For disturbed areas of 1 acre or less: o Construction vehicle speed at the work site would be limited to 15 mph or less. o Prior to any ground disturbance, sufficient water would be applied to the area to be disturbed to prevent visible emissions from crossing the property line. o Areas to be graded or excavated would be kept adequately wet to prevent visible emissions from crossing the property line. o Storage piles would be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile. o Equipment would be washed down before moving from the property onto a paved public road. o Visible track-out on the paved public road would be cleaned using wet sweeping or a high-efficiency particulate air-filter-equipped vacuum device within 24 hours. • For disturbed areas of greater than 1 acre: o Prepare an Asbestos Dust Mitigation Plan and obtain approval prior to construction. o Implement and maintain the provisions of the approved Asbestos Dust Mitigation Plan from the beginning of construction through the duration of the construction activity.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact AIR-1 Impact AIR-4	APM AQ-04: Minimize Potential Emissions of Naturally Occurring *Coccidioides immitis* Fungal Spores (qualitatively included in the emissions estimate). In addition to the APM AQ-01 measures to control general fugitive dust emissions, the following measures would be implemented prior to and during construction to create awareness of the risks and inhalation prevention procedures with respect to *Coccidioides immitis* fungal spores, which are naturally present in soils in the desert southwest, and inhalation of which can cause Valley Fever: • Prior to construction, and for each phase of construction, implement an Environmental Awareness Program for workers to ensure they are informed of the risks of contracting Valley Fever and the protective measures needed to minimize personal exposure to fugitive dust, as well as to minimize possible dust exposure of nearby residents and the general public. • Inform workers of the possible symptoms of Valley Fever and encourage them to seek medical treatment if these symptoms manifest.	Verify implementation of Naturally Occurring *Coccidioides immitis* Fungal Spores measures.	Pre-construction Construction	The Applicant
Impact AIR-1 Impact AIR-4	**BMP AQ-05: Air Quality Regulation and Standard Conformance.** All activities would meet the requirements of the CAA (Sections 110, 118, 160, and 176[c]) and the applicable local AQM jurisdiction(s). Fugitive dust cannot exceed local standards and requirements.	Verify implementation of dust control measures.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact AIR-1	**CMA LUPA-AIR-1.** All activities must meet the following requirements: • Applicable NAAQS (Section 109); • SIP (Section 110); • PSD, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.); • Conformity Analyses and Determinations (Section 176[c]); and • Apply BMPs on a case by case basis.	Ensure that measures are taken to meet the requirements.	Design	The Applicant
Impact AIR-1	**CMA LUPA-AIR-3.** Where impacts to air quality may be significant under NEPA, requiring analysis through an EIS, require documentation for activities to include a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), NAAQS, criteria pollutant nonattainment areas, and potential air quality impacts of the Project (including cumulative and indirect impacts and GHGs emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and MMs to minimize net PM10 and PM2.5 emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.	Review adequacy of Construction Emissions Mitigation Plan.	Pre-construction	The Applicant
Impact AIR-1	**CMA LUPA-AIR-4**. Because fugitive dust is the number one source of PM10 and PM2.5 emissions in the Mojave and Sonoran Deserts, fugitive dust impacts to air quality must be analyzed for all activities/projects requiring an EIS and EA. The NEPA air quality analysis may include modeling of the sources of PM10 and PM2.5 that occur prior to construction and/or ground disturbance from the activity/project, and show the timing, duration and transport of emissions off	Confirm that fugitive dust impacts are analyzed.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	site. When utilized, the modeling will also identify how the generation and movement of PM10 and PM2.5 will change during and after construction and/or ground disturbance of the activity/project under all activity/project specific NEPA alternatives. The BLM air resource specialist and Authorizing Officer will determine if modeling is required as part of the NEPA analysis based on estimated types and amounts of emissions.			
Impact AIR-1	**CMA LUPA-AIR-5.** A Fugitive Dust Control Plan will be developed for all projects where the NEPA analysis shows an impact on air quality from fugitive dust.	Review adequacy of fugitive Dust Control Plan.	Pre-construction	
Impact AIR-1 Impact AIR-4	MM AQ-CEQA-1: Implement Air Quality Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.3.2 and 2.3.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to air quality and greenhouse gasses. These APMs, BMPs, and CMAs include; APM AQ-01, BMP AQ-01, APM AQ-02, APM AQ-03, APM AQ-04, BMP AQ-05, CMA LUPA-AIR-1, CMA LUPA-AIR-3, CMA LUPA-AIR-4, CMA LUPA-AIR-5. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM AQ-01: Fugitive Dust (quantitatively included in the emissions estimate).** Consistent with APM AQ-01, and MDAQMD Rule 403.2, a Fugitive Dust Control Plan shall be prepared for the Project prior to the start of construction and shall be implemented throughout all construction phases of the Project. This Fugitive Dust Control Plan shall be prepared by the Applicant at least 30 days prior to construction which shall be approved by the CPUC and MDAQMD. The Applicant shall ensure that the Fugitive Dust Control Plan is implemented throughout construction activities and shall keep records of compliance on site and submit monthly reports to CPUC and MDAQMD. This Fugitive Dust Control Plan shall comply with the MDAQMD Guidelines and include all of the control measures listed in APM AQ-01. In addition to these control measures, the Fugitive Dust Control Plan shall also include signage related to fugitive dust that will include the following specifications: A minimum 48 inch high by 96 inch wide sign containing the following shall be located within 50 feet of each Project site entrance, meeting the specified minimum text height, black text on white background, on one inch A/C laminated plywood board, with the lower edge between six and seven feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day: [Site Name] {four-inch text] [Project Name/Project Number] {four-inch text} IF YOU SEE DUST COMING FROM {four-inch text}			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	THIS PROJECT CALL: {four-inch text} [Contact Name], PHONE NUMBER XXX-XXXX {six-inch text} If you do not receive a response, Please Call {three-inch text} The MDAQMD at 1-800-635-4617 {three-inch text} Additionally, the following control measures shall be included in the Fugitive Dust Control Plan: Traffic speeds on unpaved roads shall not exceed 15 miles per hour; Drop heights from excavators and loaders shall be minimized to distances no more than 5 feet; Appoint a construction relations officer to act as a community liaison concerning on-site construction activity, including resolution of issues related to PM10 and PM2.5 generation from combustion emissions and fugitive dust generation; An on-site supervisor with a current fugitive dust control class certification shall be present who is available within 30 minutes to respond to any fugitive dust control issue at the site during normal business hours; The operation shall keep on-site records of specific dust control actions taken; All perimeter fencing shall be wind fencing or the equivalent of four feet of height or the top of all perimeter fencing (this wind fencing requirement may be superseded by local ordinance, rule, or Project-specific biological mitigation prohibiting wind fencing); and A wheel washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the unpaved construction site.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Responsible Party: The Applicant shall be responsible for ensuring the Fugitive Dust Control Plan is prepared and implemented throughout construction activities. **Timing:** The Fugitive Dust Control Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities. **Mitigation Monitoring and Reporting Program:** Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any calls received regarding fugitive dust and all compliance actions taken. **Standards for Success:** Fugitive dust will be minimized throughout all construction activities and compliance with MDAQMD Rule 403.2 shall be achieved. **APM AQ-02: Exhaust Emissions (qualitatively included in the emissions estimate).** Consistent with APM AQ-02 a Construction Emissions Mitigation Plan shall be developed by the Applicant for the Project at least 30-days prior to the start of construction activities and shall be implemented by the Applicant throughout all construction activities. The Construction Emissions control Plan shall be approved by the CPUC and MDAQMD and the Applicant shall keep records of compliance with this Plan on site and submit monthly reports to CPUC and MDAQMD. Successful implementation of with measure will result in minimization of exhaust emissions from worker vehicles, construction equipment, and vehicles. The Construction Emissions Mitigation Plan may include the following measures: Use ultra-low sulfur diesel fuel (e.g., <15 ppm);			

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	Use clean-burning on- and off-road diesel engines. Heavy-duty diesel-powered construction equipment manufactured after 1996 (with Federally mandated "clean" diesel engines) shall be utilized; The Applicant shall develop a program and require construction workers to carpool to construction sites; Restrict construction vehicle idling time to less than 5 minutes; Properly maintain mechanical equipment; Use particle traps and appropriate controls to reduce diesel particulate matter. Other equipment includes devices such as specialized catalytic converters (oxidation catalysts) control approximately 20 percent of diesel particulate matter, 40 percent of carbon monoxide, and 50 percent of hydrocarbon emissions; Provide temporary traffic controls, such as a flag person, during all phases of construction to maintain a smooth traffic flow (See MM TRANS-CEQA-2 under Section 2.17 for more details); During Project construction, all off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet the Tier 4 final emissions standards, where available. In addition, all construction equipment shall be outfitted with the BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a level 4 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations (i.e., if Project construction goes beyond the anticipated schedule); and A copy of each unit's certified tier specification, BACT documentation, and CARB or MDAQMD operating permit shall be provided to the CPUC			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	at the time of mobilization for each applicable unit of equipment. **Responsible Party:** The Applicant shall be responsible for ensuring the Construction Emissions Control Plan is prepared and implemented throughout construction activities. **Timing:** The Construction Emissions Control Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities. **Mitigation Monitoring and Reporting Program:** Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any compliance actions taken and a list of equipment used on site. Any associated vehicle tier specifications, BACT documentation, or CARB or MDAQMD operating permits shall be kept on site and made available upon request **Standards for Success:** Construction emissions will be minimized and would not exceed MDAQMD significance thresholds. Additionally, any State standards regulating construction emissions would be met (i.e. CARB Tier 4 final emission standards and Title 1. California Code of Regulations Section 2485 standards). **APM AQ-03: Minimize Potential Naturally Occurring Asbestos Emissions (qualitatively included in the emissions estimate).** Consistent with APM AQ-03 an Asbestos Dust Mitigation Plan shall be developed for the Project in conjunction with the Fugitive Dust Control Plan that shall also be developed for the Project only if the results of the asbestos, serpentine, or ultramafic rock are positive in the project area. The Asbestos Dust Mitigation Plan will be developed by the Applicant at least 30-days prior to the start of construction activities and shall be submitted and			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	approved by the CPUC and MDAQMD. The plan shall be prepared and implemented according to the requirements of Title 17 California Code of Regulations 93105, CARB Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. Successful implementation of this APM will result in compliance with the CARB-required Asbestos Toxic Control Measures. **Responsible Party:** The Applicant shall be responsible for ensuring the Asbestos Dust Mitigation Plan is prepared and implemented throughout all construction activities. **Timing:** The Asbestos Dust Mitigation Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities. **Mitigation Monitoring and Reporting Program:** Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary any compliance actions taken related to asbestos control. **Standards for Success:** Construction dust will be minimized, and Project activities will comply with the CARB-required Asbestos Toxic Control Measures.			
Biological Resources				
Impact BIO-1 Impact BIO-2 Impact BIO-3	**APM BIO-1: Worker Environmental Awareness Program.** Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required	Review adequacy of worker environmental awareness program and implementation of worker environmental awareness	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the FESA and CESA and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special-status species as well as a discussion of avoidance and minimization measures.	program.		
Impact BIO-1 Impact BIO-2 Impact BIO-3	**BMP BIO-1: Worker Environmental Awareness Program.** The worker education program would provide interpretation for non-English speaking workers.	Confirm the worker environmental awareness program is interpreted for non-English speaking workers.	Pre-construction	The Applicant
Impact BIO-1 Impact BIO-3	**APM BIO-2: Biological Monitoring and Pre-construction Survey.** A qualified biological monitor would be present on the Project site during all work activities within habitat of special-status animal species. The qualified biologist would conduct a pre-construction survey of those areas immediately before work activities begin and would locate and fence off any present individuals of special-status plant species.	Conduct preconstruction surveys for special-status animal species and fence off any present individuals of special-status plant species	Pre-construction Construction	The Applicant
Impact BIO-1	**BMP BIO-02: Biological Monitoring and Pre-construction Survey.** Multiple biological monitors would be provided so any work site within habitat of special-status species is monitored concurrently if needed.	Provide multiple biological monitors for monitoring within habitat of special-status species.	Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-3: Approved Work Areas.** To the extent practicable, stockpiling of material would be allowed only within the established work area. Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed areas within identified work areas or access roads.	Ensure materials are stockpiled only within established work area. Ensure vehicles and equipment parked on pavement, existing roads,	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
		and previously disturbed areas within work areas and access roads.		
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**BMP BIO-03: Approved Work Areas.** The BLM would approve areas to be used for stockpiling, vehicle parking, or other construction support activity that would occur outside established work areas.	Ensure areas used for stockpiling, vehicle parking, or other construction support activity outside established work areas are approved by BLM.	Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-4: Environmentally Sensitive Areas and Fencing.** Environmentally sensitive areas, such as the riparian areas, xeroriparian washes, and other habitat of special-status species, would be identified in the field. Barrier fences or stakes would be installed at the edge of the easement or around the sensitive area to minimize the possibility of inadvertently encroaching into sensitive habitat.	Identify environmentally sensitive areas and install barrier fences or stakes around the edge of the easement or sensitive area.	Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**APM BIO-5: Additional Prohibitions.** Trash dumping, firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment.	Ensure that workers are aware that trash dumping, firearms, open fires, and pets are prohibited at all work locations and access roads and that smoking is prohibited along the Project alignment.	Construction	The Applicant
Impact BIO-1 Impact BIO-2	**APM BIO-6: Trash Handling.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the work area would be disposed of in closed trash containers.	Ensure that workers dispose of food scraps, wrappers, food containers, cans, bottles, and other	Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
		trash from the work area in closed trash containers.		
Impact BIO-1 Impact BIO-2 Impact BIO-3	**APM BIO-7: Monofilament Plastic.** No monofilament plastic would be used for erosion control (for example, matting, fiber roll, wattles, silt fencing backing). Appropriate materials include burlap, coconut fiber, or other materials as identified in the general and site-specific SWPPP.	Ensure that only appropriate materials (burlap, coconut fiber, or other materials identified in the Project SWPPP) are used for erosion control. Confirm that no monofilament plastic is used for erosion control.	Pre-construction Construction Post-construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3	**APM BIO-8: Refueling.** Vehicular and equipment refueling should not occur within 100 feet of a wetland or drainage unless secondary containment is constructed, for example, a berm and lined refueling area. Proper spill prevention and cleanup equipment would be maintained in all refueling areas in accordance with the SPCC for the Project.	Verify implementation of SPCC measures.	Construction	The Applicant
Impact BIO-1 Impact BIO-4	**APM BIO-9: Escape Ramps.** All excavated steep-walled holes or trenches more than 1-foot-deep would be covered at the end of each working day with plywood or similar materials or would be provided with one or more escape ramps constructed of earth fill or wooden planks. Each trench or hole would be inspected for wildlife at the beginning of each workday and before such holes or trenches are filled. Wildlife found trapped in trenches or holes would be relocated to suitable habitat outside the work area. If possible, pipes and culverts greater than 3 inches in diameter would be stored on dunnage to prevent wildlife from taking refuge in them, to the extent feasible.	Verify implementation of measures.	Construction	The Applicant
Impact BIO-1 Impact BIO-2	**APM BIO-10: Erosion and Dust Control.** The BMPs included in the SWPPP would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as	Ensure that SWPPP BMPs are implemented.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-3 Impact BIO-4	described previously (AQ-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access).			
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-11: Vegetation Management Plan.** The Vegetation Management Plan (EIS Appendix 2B) would be approved by the BLM and implemented. That Plan describes the surveys, permitting, fee payments, and plant protection to be conducted in areas where Project design would not eliminate the need for vegetation control for the Project to be in compliance with NERC requirements. Vegetation would be trimmed or otherwise controlled for safe operation of the transmission line and would be designed to minimize impacts on special-status species to the extent practicable. At a minimum, vegetation treatments shall incorporate the measures identified in the 2016 Memorandum of Understanding regarding vegetation management along ROW for electrical transmission and distribution facilities (USDA 2016). The Plan also would describe how vegetation would be salvaged, as needed, in order to comply with the applicable Arizona Native Plant Law and California regulations.	Confirm that the Vegetation Management Plan is approved by BLM and implemented.	Pre-construction Construction	The Applicant
Impact BIO-1 Impact BIO-4	**BMP BIO-11: Vegetation Management Plan.** In addition to the description of the Vegetation Management Plan in the corresponding APM BIO-11, the plan would also: • Meet BLM Guidelines for mapping and surveying of cacti, yuccas, and succulents. • Include a wire zone/border zone/effective border zone approach to vegetation maintenance as described in Ballard et al. 2007. • Identify tall vegetation species by geographic reach and growth rates, from relevant scientific literature (such as Drezner 2003), to be used to	Confirm that the Vegetation Management Plan includes the additional guidelines, zone approach, and identifications.	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	determine maximum allowable vegetation heights in the context of wire zone/border zone/effective border zone concepts, to accommodate identified growth periods (e.g., ten years) based on the specific vegetation community. Species examples include, but are not limited to, saguaro cactus, ironwood, palo verde, cottonwood, and Gooding willow.			
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-12: Invasive Species Control.** A Noxious Weed Control Plan (EIS Appendix 2B) that addresses specific requirements in CMA LUPA-BIO-11 would be developed, approved by the BLM, and implemented prior to initiation of ground disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area, describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special-status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and practices for the application of herbicides.	Confirm that the Noxious Weed Control Plan is developed, approved by the BLM, and implemented.	Pre-construction Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-13: Riparian Habitat Avoidance.** Riparian areas and xeroriparian drainages that occur within the ROW would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. Existing topography would be restored to pre-Project conditions to the extent possible.	Confirm implementation of riparian habitat avoidance measures.	Pre-construction Construction Post-construction	The Applicant
Impact BIO-1	**APM BIO-14: Minimizing Vegetation Clearing.** In areas with suitable topography, minimal or no vegetation clearing, and soil disturbance would be	Confirm that vegetation	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-2 Impact BIO-3	conducted for site access and construction (i.e. overland driving/overland access). Overland driving/overland access would be used in areas that support the necessary construction equipment. Upgrading of existing access roads and construction of new access roads would be implemented as necessary for the safe construction activities.	clearing is minimized.	Construction	
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-15: Reclamation and Restoration.** A Habitat Restoration and Monitoring Plan would be developed, approved by BLM, and implemented for construction and operation of the Project. Revegetate all sites disturbed during construction that would not be required for operation of the transmission line, and restore disturbed areas to the extent practicable, given the arid desert environment. The Plan would describe in detail methods for surveying and characterizing vegetation in disturbed areas before construction; topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. It would be designed to reduce impacts on special-status species to the extent practicable.	Review adequacy and implementation of Habitat Restoration and Monitoring Plan. Confirm the Habitat Restoration and Monitoring Plan is approved by BLM.	Pre-construction Construction Post- construction	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-15: Reclamation and Restoration.** As a part of the Habitat Restoration and Monitoring Plan, the soil horizons would be stored separately for the areas where the success of restoration could be crucial for rare plant species.	Identify areas where the success of restoration could be crucial for rare plant species. Ensure that soil horizons are stored separately for those areas.	Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**APM BIO-16: Treatment of Saguaro Cactus.** Measures would be implemented to minimize the number of saguaro cacti that must be relocated for the safe construction and operation of the transmission line. In accordance with the Vegetation Management Plan (EIS Appendix 2B), a survey of saguaros within the ROW would be conducted before construction and where possible,	Ensure that measures for treatment of Saguaro Cactus are implemented in accordance with the Vegetation Management	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	the transmission line would be designed to minimize the number of saguaros affected by adjusting tower locations and conductor height. The Plan would address plant salvaging, storing, and replanting requirements and methods, only those saguaros that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if they cannot be avoided through Project design. When possible, saguaro that must be removed would be relocated as directed by the BLM and state agency protocols. Monitoring and management of saguaros during operations would occur as described in the Vegetation Management Plan.	Plan.		
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**APM BIO-17: Limit Off-road Vehicle Travel.** Vehicular travel would be limited to established roads to the maximum extent practicable.	Confirm that vehicular travel is limited to established roads.	Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3	**BMP BIO-19: Colorado River.** In the vicinity of the Colorado River, existing structure spacing, and conductor heights would be matched to the greatest extent practical to reduce the potential for bird collisions with the power line. The transmission line would span the Colorado River and the minimum number of structures possible would be located within the undeveloped floodplain. The term, "vicinity of the Colorado River" is defined to mean the river crossing, floodplain, and associated agricultural lands. In these areas, conductor bundles would be in a horizontal, parallel configuration, and match existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. No guyed structures would be used at these locations.	Ensure that measures in specific to the vicinity of the Colorado River are implemented.	Design	The Applicant
Impact BIO-1 Impact BIO-2	**APM BIO-20: Migratory Bird Protection During Construction.** If construction is scheduled during the nesting bird season (generally February 1 through August 31), the work area would be surveyed for birds protected under	Confirm that migratory bird protection measures are implemented if	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-3	the MBTA and CFG Code. Active nests identified during pre-construction surveys would require protective buffers or visual barriers to ensure compliance with those regulations. If the qualified biologist determines that construction activities would cause distress to nearby nesting birds, larger buffers or construction delays might be necessary to allow the birds to successfully fledge from the nest.	construction is scheduled during the nesting bird season.		
Impact BIO-1 Impact BIO-2 Impact BIO-4	**APM BIO-21: Reduction of Avian Collisions and Electrocution.** Current APLIC guidelines and methodologies (APLIC 2006, 2012) would be used in the design of the proposed transmission facilities to minimize the potential for raptors and other birds to collide with the transmission line during operations and be electrocuted. For example, aerial marker balls or other visibility markers would be placed at and near the crossing of the Colorado River to increase the visibility of the transmission line to birds using that movement corridor. Further, placement of lines significantly above existing transmission lines, topographic features, or tree lines would be avoided. These measures would be implemented, where practicable, in conjunction with an APP for the Project. The APP would include requirements for monitoring the effectiveness of anti-collision design.	Confirm that design implements current methodologies for the reduction of avian collisions and electrocution. Review adequacy of the APP.	Design Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-4	**BMP BIO-21: Reduction of Avian Collision.** Aerial marker balls or other visibility markers would be placed on overhead ground wires (not conductors) at crossing of the Colorado River and floodplain to increase visibility to birds using that movement corridor and marking any other static wires to improve visibility and reduce collisions. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. The APP would include requirements for monitoring the effectiveness of anti-electrocution design.	Review adequacy of and implementation of APP. Confirm that measures for reducing avian collision are implemented during design.	Design Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**APM BIO-23: Mojave Desert Tortoise Protection (California).** A qualified-biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in California, in order to survey areas before	Verify monitoring of all ground-disturbing and other construction	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way in accordance with U.S. Fish and Wildlife Service (USFWS protocols). Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species. Other measures, as required by the USFWS in any applicable Biological Opinion (BO), would also be implemented.	activities in non-cultivated areas in California for desert tortoise and verify completion of surveys and implementation of measures.		
Impact BIO-1 Impact BIO-2	**BMP BIO-23: Mojave Desert Tortoise Protection (California).** A designated biologist would inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection.	Confirm Mojave Desert tortoise protection measures are implemented.	Construction	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-24: Sensitive Plant Surveys.** On BLM lands and other lands where access is secured by the owner, a survey would be conducted during the appropriate time of year of the selected route to identify special-status plant species and imperiled or sensitive vegetation alliances. Where possible, and as required by the BLM, special-status species and vegetation alliances would be avoided during construction. This survey would be restricted to non-cultivated land.	Verify completion of sensitive plant surveys.	Pre-construction Construction	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-25: Sensitive Animal Surveys.** A survey would be conducted of the selected route prior to construction of all work areas to identify special-status animal species, including Mojave Desert tortoises, burrowing owls, and Mojave	Prior to construction, conduct a survey of the route of all work areas to	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-3	fringe-toed lizards. Where possible, and as required by the BLM, special-status species and vegetation alliances would be avoided during construction.	identify special-status animal species. Ensure special-status species and vegetation alliances are avoided during construction.		
Impact BIO-1	**APM BIO-27: Bighorn Sheep Lambing Areas.** Construction activities would be limited from January 1 to March 31 in active bighorn sheep lambing areas identified by BLM and AGFD.	Confirm that construction activities are limited from January 1 to March 31 in active bighorn sheep lambing areas identified by BLM and AGFD.	Construction	The Applicant
Impact BIO-1	**BMP BIO-28: Raven Management Plan.** The Raven Management Plan would be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the common raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for common ravens. Compensatory mitigation would be provided that contributes to LUPA-wide raven management associated with lands in the DRECP.	Review adequacy and verify implementation of Raven Management Plan.	Pre-construction Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**BMP BIO-29: Bird and Bat Conservation Strategy.** The BBCS would provide guidance on conservation measures applicable to bird and bat species present in the Project Area, including a nesting bird management plan and a nest management plan.	Review adequacy and verify implementation of Bird and Bat Conservation Strategy, a Nesting Bird Management Plan, and a Nest Management Plan.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1 Impact BIO-2	**BMP BIO-30: Burrowing Owl Nesting Management Plan.** The Plan would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14.	Review adequacy and verify implementation of Burrowing Owl Nesting Management Plan.	Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-4	**BMP BIO-31: Treatment of Harwood's eriastrum.** 1. Pre-construction surveys would be required for non-agricultural areas in California. 2. Avoid Harwood's eriastrum individuals through micrositing facilities to the maximum extent practical. 3. Within suitable habitat for Harwood's eriastrum, use overland travel (drive and crush) in-lieu of road construction to pad sites to the maximum extent practical. 4. On non-agricultural Public Lands in California, an authorized botanist would be on site for all construction activities involving surface disturbance or overland travel. 5. Within suitable habitat for Harwood's eriastrum, keep equipment to the minimum necessary to accomplish the necessary work. 6. On public lands in California, avoid establishing features that would interfere with the movement of sand to the maximum extent practical. 7. Laydown and temporary use sites would not be located within suitable habitat for Harwood's eriastrum. 8. On public lands in California, use existing roads or routes to the maximum extent practical. 9. Develop and implement an Invasive Species Management Plan (specific to the rare plant habitat) that California State Director would approve	Verify implementation of measures. Review adequacy and verify implementation of Harwood's eriastrum Linear ROW Protection Plan.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	prior to a notice to proceed for work on public lands in California. 10. No surface disturbance or overland travel would occur within occupied habitat for Harwood's eriastrum from 15 February through the 31 July. This stipulation does not apply to verified, unoccupied habitat. 11. No take of Harwood's eriastrum individuals would be allowed without California BLM State Director approval. 12. Prepare a Harwood's eriastrum Linear ROW Protection Plan. 13. Project impacts to suitable habitat combined with current impacts shall be limited (capped) to a maximum of 1 percent of Harwood's eriastrum habitat across all BLM lands included within the DRECP.			
Impact BIO-1 Impact BIO-2 Impact BIO-4	**BMP BIO-33: Construction Lighting.** All long-term nighttime lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting, if required, would be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to Project infrastructure. Long-term nighttime lighting would avoid the use of constant-burn lighting.	Ensure that long-term nighttime lighting is directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Ensure that long-term nighttime lighting directed and shielded downward and avoids the use of constant-burn lighting.	Construction	The Applicant
Impact BIO-1 Impact BIO-4	**BMP BIO-34: Prevention of Puddles During Dust Abatement.** The application of water and/or other palliatives for dust abatement in construction areas and during Project operations and maintenance would be done with the	Confirm puddles are prevented during dust abatement.	Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.			
Impact BIO-1 Impact BIO-4	**BMP BIO-35: Presence of Wildlife in Construction Materials or Equipment.** All construction materials and equipment would be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed.	Confirm that measures are implemented.	Construction	The Applicant
Impact BIO-1 Impact BIO-4	**BMP BIO-36: Feeding or Harassment of Wildlife.** The intentional feeding or harassment of wildlife on site is prohibited.	Ensure that workers do not feed or harass wildlife.	Construction	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-37: Native Plant Collection.** The collection of native plants on site is prohibited without required permits and tags.	Ensure that native plants will not be collected without required permits and tags.	Construction	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-38: Use of State-of-the-Art and Commercially Available Technology.** Use state-of-the-art, commercially available, construction and installation techniques, as approved by BLM, appropriate for the specific activity/Project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.	Confirm that the applicant will use state-of-the-art, as approved by BLM, construction and installation techniques.	Construction	The Applicant
Impact BIO-1	**BMP BIO-40: Project Activity Siting Near Bat Maternity Roosts.** Activities would not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost for BLM Focus and Special Status Bat Species.	Confirm that appropriate buffers are used.	Construction	The Applicant
Impact BIO-1	**BMP BIO-41: Succulent Management.** Management of cactus, yucca, and other succulents would adhere to current up-to-date BLM policy. All activities	Ensure that all activities follow applicable BLM	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-2	would follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents. Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features. BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.	state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents.		
Impact BIO-1 Impact BIO-2	**BMP BIO-42: Dead and Downed Wood.** Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	Ensure that appropriate levels of dead and downed wood on the ground, outside of campground areas.	Construction	The Applicant
Impact BIO-1	**BMP BIO-43: Collection of Plant Material.** Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.	Ensure that the Vegetation Management Plan addresses collection of plant material.	Pre-construction	The Applicant
Impact BIO-1	BMP BIO-44: Mojave Desert Tortoise Protection. • All culverts for access roads or other barriers would be designed to allow unrestricted access by desert tortoises and would be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages. • Biological monitoring would occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed. • A designated biologist would accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed. • The ground would be inspected under vehicles for the presence of desert tortoise any time a vehicle or construction equipment is parked in	Verify implementation of Mojave Desert tortoise protection measures.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	desert tortoise habitat. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location. • Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted.			
Impact BIO-1 Impact BIO-2	**BMP BIO-45: Protection from Loss and Harassment of Golden Eagles.** Provide protection from loss and harassment of active golden eagle nests through activities identified LUPA-BIO-IFS-24 through -31.	Ensure activities identified in LUPA-BIO-IFS-24 through -31 are implemented.	Construction	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-46: Compensation for Loss of Desert Riparian Woodland.** The loss of desert riparian woodland would be compensated at a ratio of 5:1 Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.	Ensure that loss of desert riparian woodland would be compensated at a ratio of 5:1.	Post-construction	The Applicant
Impact BIO-1 Impact BIO-4	**BMP BIO-48: Flight Diverters.** Bird flight diverters would be installed on the Colorado River and associated floodplain crossings and other areas of high bird use as recommended by BLM in consultation with USFWS, AGFD, and CDFW.	Verify flight diverter installation appropriately installed.	Design	The Applicant
Impact BIO-1 Impact BIO-2	**BMP BIO-49: Fringe-toed Lizard Linear ROW Protection Plan.** A Fringe-toed Lizard Linear ROW Protection Plan would be prepared that identifies specific conservation measures to minimize Project-related impacts to sand dunes and sand transport areas, to map suitable habitat within construction zones, and methods to achieve clearance surveys within suitable habitat so animals are not killed by construction activities.	Review adequacy of and implementation of Fringe-toed Lizard Linear ROW Protection Plan.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**BMP BIO-50 Engineering Controls.** Appropriate engineering controls would be used to minimize impacts on dry wash, dry wash woodland, and chenopod scrub, including downstream occurrences, resulting from surface water runoff, erosion, sedimentation, altered hydrology, accidental spills, or fugitive dust deposition to these habitats. Appropriate buffers and engineering controls would be determined through agency consultation.	Ensure appropriate engineering controls are used to minimize impacts.	Design	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**BMP BIO-51: Conductor Clearance.** To minimize vegetation trimming, micrositing and design considerations (including tower height) would be applied so the catenary formed by the conductors (the bottom of the sag) avoids saguaros and is not directly over wash vegetation (microphyll woodlands), to the extent practicable.	Ensure conductors avoids saguaros and is not directly over wash vegetation, to the extent practicable.	Design	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3 Impact BIO-4	**BMP BIO-52: California Riparian Habitat and Rare Plant Alliance Avoidance.** In California, as part of micrositing towers, a 200-foot setback from the outer perimeter of Coloradan semi-desert wash woodland/scrub vegetation community (microphyll woodlands) would be applied. Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features. Minor incursions would be allowed to balance minimizing vegetation trimming (see BMP BIO-51) while maintaining an appropriate setback, as determined based on site-specific conditions. No structure would be placed within, and no new access roads would pass through, these washes to the extent practicable.	Verify completion of preconstruction survey of disturbance zones and adequacy of maps.	Pre-construction Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-4	**BMP BIO-53: Protection of Dune Vegetation.** Project facilities would be sited to avoid dune vegetation. Unavoidable impacts to dune vegetation would be limited and Project facilities would be sited to minimize unavoidable impacts. Access roads would be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.	Confirm that facilities avoid dunes and dune vegetation.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1	**BMP BIO-54: Protection of Sand Transport.** Within Aeolian corridors that transport sand to dune formations and vegetation types downwind all activities would be designed and operated to facilitate the flow of sand across activity sites and avoid the trapping or diverting of sand from the Aeolian corridor. Structures would take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences would be designed to allow sand to flow through and not be trapped.	Confirm that structures take into account the direction of sand flow.	Design	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-4	**BMP BIO-55: Access within Focus and BLM Special-Status Species Suitable Habitat.** Construction of new roads and/or routes would be avoided to the extent practicable within focus and BLM special-status species suitable habitat within identified linkages for those focus and BLM special-status species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern.	Confirm that roads and/or routes are avoided within Focus and BLM Special Status Species suitable habitat.	Design	The Applicant
Impact BIO-1	**BMP BIO-56: Sonoran Pronghorn.** Measures, as required by the USFWS in any applicable BO, would be implemented.	Ensure that Sonoran Pronghorn measures are implemented.	Pre-construction Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3	**BMP VEG-01: Removal of Vegetation.** Any removal of vegetation resources would be conducted in accordance with BLM IB 2012-097.	Confirm that vegetation resources are removed in accordance with BLM IB 2012-097.	Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3	**BMP VEG-02: Avoid Vegetation Removal.** Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.	Confirm minimal vegetation is removed.	Construction	The Applicant
Impact BIO-1	**CMA DFA-BIO-IFS-1.** Conduct surveys as applicable in the DFAs as shown	Confirm that applicable	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	in Table 21 of the DRECP.	surveys are conducted.		
Impact BIO-1	**CMA DFA-BIO-IFS-2.** Implement setbacks shown in Table 22 of the DRECP as applicable in the DFAs.	Confirm that applicable surveys are conducted.	Design	The Applicant
Impact BIO-1 Impact BIO-2	**CMA DFA-VPL-BIO-DUNE-1.** Activities in DFAs and VPLs, including transmission substations, will be sited to avoid dune vegetation (i.e., North American Warm Desert Dune and Sand Flats). Unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms, EIS Appendix 6) to dune vegetation will be limited to transmission projects, except transmission substations, and access roads that will be sited to minimize unavoidable impacts. • For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms, EIS Appendix 6) to dune vegetation, the following will be required: o Access roads will be unpaved. o Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.	Confirm requirements regarding unavoidable impacts and access roads are implemented.	Design	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-1.** Conduct a habitat assessment (see Glossary of Terms, EIS Appendix 6) of focus and BLM special-status species suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms, EIS Appendix 6) for focus and BLM special-status species. If required by the relevant species-specific CMAs, conduct any subsequent protocol or adequate	Confirm habitat assessment adequacy.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species-specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat. • BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season. • Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.			
Impact BIO-1	**CMA LUPA-BIO-2.** Designated biologist(s) (see Glossary of Terms, EIS Appendix 6), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.	Ensure that a biological monitor is present when appropriate and submits monitoring reports directly to BLM.	Pre-construction Construction Post-construction Decommissioning	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-3.** Resource setbacks (see Glossary of Terms, EIS Appendix 6) have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions (see Glossary of Terms, EIS Appendix 6), as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are	Confirm resource setbacks measures are implemented.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	measured from: • The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1). • The edge of the vegetation extent for specified focus and BLM sensitive plant species. • The edge of suitable habitat or active nest substrates for the appropriate focus and BLM special-status species.			
Impact BIO-1	**CMA LUPA-BIO-4.** For activities that may impact focus and BLM special-status species, implement required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities. Species-specific seasonal restriction dates are described in the applicable CMAs. Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/Project specific environmental analysis.	Confirm Focus and BLM Special Status Species measures are implemented.	Pre-construction Construction Post-construction Decommissioning	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-5.** All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the Project (i.e., site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or Project abandonment, and restoration/reclamation activities). The worker education program will provide	Confirm adequacy and implementation of the worker education program and approval of BLM.	Pre-construction Construction Post-construction Decommissioning	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	interpretation for non-English speaking workers and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about: • Site-specific biological and non-biological resources. • Information on the legal protection for protected resources and penalties for violation of Federal and State laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources. • The required LUPA and Project-specific measures for avoiding and minimizing effects during all Project phases, including but not limited to resource setbacks, trash, speed limits, etc. • Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist. • Measures that personnel can take to promote the conservation of biological and non-biological resources.			
Impact BIO-1	**CMA LUPA-BIO-6.** Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following: • Common raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the common raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites	Confirm that subsidized predatory standards are implemented.	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	for common ravens. • The application of water and/or other palliatives for dust abatement in construction areas and during Project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators. • Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species. All activity work areas will be kept free of trash and debris. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the Project site at the end of each day or at regular intervals prior to periods when workers are not present at the site. • In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-7.** Where DRECP vegetation types or focus or BLM special-status species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms, EIS Appendix 6) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and	Confirm restoration standards are implemented.	Pre-construction Construction Post-construction Decommissioning	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below: • Implement site-specific habitat restoration actions for the areas affected including specifying and using: o The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed). o Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities). o Equipment. o Timing (e.g., appropriate season, sufficient rainfall). o Location. o Success criteria. o Monitoring measures. o Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM-Administered Lands. • Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms, EIS Appendix 6), the cactus and yucca will be re-planted back to the original site. • Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms, EIS Appendix 6) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate			

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	season as determined in the activity/Project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-8.** All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement Project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following: • Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measurable criteria). • Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists. • Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species. • Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.	Confirm that decommissioning activities will address the BLM standards.	Pre-construction Post-construction Decommissioning	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-9.** Implement the following general LUPA CMA for water and wetland dependent resources: • Implement construction site standard practices to prevent toxic	Confirm LUPA CMA for water and wetland resources measures are implemented.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-3	chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following: o On Project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills. o Hazardous material leaks, spills, or releases will be immediately cleaned, and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill. o Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases. • Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved Project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the Project to minimize site disturbance, including the following: o Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.			

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	o Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed. o Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins. o Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized. o Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins. o Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-10.** Consistent with BLM state and national policies and guidance, integrated weed management actions will be carried out during all phases of activities, as appropriate, and at a minimum will include the following: • Thoroughly clean the tires and undercarriage of vehicles entering or reentering the Project site to remove potential weeds. • Store Project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the Project site. • Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds. • Closely monitor the types of materials brought onto the site to avoid the	Confirm integrated weed management actions are implemented.	Pre-construction Construction Post-construction Decommissioning	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	introduction of invasive weeds and non-native species. • Reestablish native vegetation quickly on disturbed sites. • Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas. • Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-11.** Implement the following CMAs for controlling nuisance animals and invasive species: • No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where focus and BLM special-status species are known or suspected to occur. • Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies. • Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination. • Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.	Confirm CMAs for controlling nuisance animals and invasive species are implemented.	Construction Post-construction Decommissioning	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	• When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.			
Impact BIO-1	**CMA LUPA-BIO-12.** For activities that may impact focus or BLM special-status species, implement the following LUPA CMA for noise: • To the extent feasible and determined necessary by BLM to protect focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat. • Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels. • Use noise controls on standard construction equipment including mufflers to reduce noise.	Confirm LUPA CMA are implemented for activities that may impact Focus or BLM Special Status Species.	Design Construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-4	**CMA LUPA-BIO-13.** Implement the following CMA for Project siting and design: • To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for focus and BLM special-status species (see “avoid to the maximum extent practicable” in Glossary of Terms, EIS Appendix 6). • The siting of projects along the edges (i.e. general linkage border) of the biological linkages identified in Appendix D of the CDCA Plan, as amended (Figures D-1 and D-2) will be configured (1) to maximize the	Confirm that measures for project siting and design are implemented.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to focus and BLM special-status species dispersal, and (2) informed by existing available information on modeled focus and BLM Special-Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of special-status species connectivity and their associated habitats in the following linkage and connectivity areas: o Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC).			
Impact BIO-1	**CMA LUPA-BIO-14.** Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, Project vehicles, and equipment to the delineated Project areas to protect vegetation types and focus and BLM special-status species. • Long-term nighttime lighting on Project features will be limited to the minimum necessary for Project security, safety, and compliance with FAA requirements and will avoid the use of constant-burn lighting. • All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for focus and BLM special-status species. Long- term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to Project infrastructure.	Confirm that boundaries of areas to be disturbed are implemented.	Design Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	• To the maximum extent practicable (see Glossary of Terms, EIS Appendix 6), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas. • To the maximum extent practicable (see Glossary of Terms, EIS Appendix 6), confine vehicular traffic to designated open routes of travel to and from the Project site, and prohibit, within Project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance. • To the maximum extent practicable (see Glossary of Terms, EIS Appendix 6), construction of new roads and/or routes will be avoided within focus and BLM special-status species suitable habitat within identified linkages for those focus and BLM special-status species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of "no net gain" of Project roads and/or routes. • Use nontoxic road sealants and soil stabilizing agents.			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-15.** Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/Project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.	Confirm state-of-the-art construction techniques are utilized and approved by BLM.	Construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-16.** For activities that may impact focus and BLM sensitive birds, protected by the FESA and/or MBTA, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity -specific bird and bat actions	Confirm Focus and BLM sensitive birds and bats activity-specific measures are implemented.	Design Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities. Activity-specific measures to avoid and minimize impacts may include, but are not limited to: • Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers. • For activities that impact bird and bat focus and BLM special-status species, during Project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the Project site using the most current survey methods and best procedures available at the time. • Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks. • Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes. • When fencing is necessary, use bird and bat compatible design standards. • Using lighting that does not attract birds and bats or their prey to Project sites including using non-steady burning lights (i.e., red, dual red and white strobe, strobe- like flashing lights) to meet FAA requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal		Decommissioning	

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen). • Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses. • Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-17.** For activities that may result in mortality to focus and BLM special-status bird and bat species, a NBBMP, as a part of the BBCS, will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The NBBMP actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate, and may include, but is not limited to: • Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring. • Activity-specific operational avoidance and minimization actions that reduce the level of mortality on the populations of bird and bat species, such as: o Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction. The following provides the DRECP vegetation type and focus and BLM special-status species biological CMAs to be implemented throughout the	Confirm BBCS is approved by BLM and implemented.	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	LUPA DA. RIPWET • Riparian Vegetation Types: o Sonoran-Coloradan Semi-Desert Wash Woodland/ Scrub (microphyll woodland) • Riparian and Wetland Bird Focus Species: o Southwestern Willow Flycatcher o Western Yellow-billed Cuckoo o Yuma Ridgway's Rail			
Impact BIO-1	**CMA LUPA-BIO-BAT-1.** Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below. Refer to CMA DFA-VPL-BIO-BAT-1 for distances within DFAs and VPLs.	Confirm project is not sited within 500 feet of any occupied or presumed occupied maternity roost.	Design	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-COMP-1.** Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA DA will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-COMP-2, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization. Refer to CMA LUPA-COMP-1 and 2 for the timing requirements for initiation or completion of compensation.	Confirm applicant compensates for impacts as described.	Design Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1	**CMA LUPA-BIO-COMP-2.** Birds and Bats – The compensation for the mortality impacts to bird and bat focus and BLM special-status species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-Project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, an REA. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D of the DRECP) is used to estimate the necessary compensation fee. Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D of the DRECP. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date DOI mitigation policy.	Confirm applicant compensates for impacts as described.	Design Post-construction	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-DUNE-1.** Because DRECP sand dune vegetation types and Aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or Aeolian sand transport corridors must conduct studies to verify the	Verify adequacy of sand dune studies.	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	location [refer to Appendix D, Figure D-7 of the DRECP] and extent of the sand resource(s) for the activity-specific environmental analysis to determine: • Whether the proposed activity(s) occur within a sand dune or an Aeolian sand transport corridor • If the activity(s) is subject to dune/Aeolian sand transport corridor CMAs • If the activity(s) needs to be reconfigured to satisfy applicable avoidance requirements			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-DUNE-2.** Activities that potentially affect the amount of sand entering or transported within Aeolian sand transport corridors will be designed and operated to: • Maintain the quality and function of Aeolian transport corridors and sand deposition zones, unless related to maintenance of existing (at the time of the DRECP LUPA ROD) facilities/operations/activities. • Avoid a reduction in sand-bearing sediments within the Aeolian system. • Minimize mortality to dune associated focus and BLM special-status species.	Review design for adequacy regarding sand dunes.	Design Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-DUNE-3.** Any facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this transport function must be approved by BLM in coordination with USFWS and CDFW as appropriate.	Review design for adequacy regarding hydrology and sand dunes.	Design	The Applicant
Impact BIO-1	**CMA LUPA-BIO-DUNE-4.** Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the	Review mapping for adequacy.	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-2	Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM NOC. For minor incursions (see "minor incursion" in the Glossary of Terms, EIS Appendix 6) into sand dunes and sand transport areas the activity will be sited in the mapped zone with the least impacts to sand dunes and sand transport and Mojave fringe-toed lizards.			
Impact BIO-1	**CMA LUPA-BIO-DUNE-5.** If suitable habitat characteristics are identified during the habitat assessment, clearance surveys (see Glossary of Terms, EIS Appendix 6) for Mojave fringe-toed lizard will be performed in suitable habitat areas. The following CMAs will be implemented for bat focus and BLM special-status species, including but not limited to those listed below: • California leaf-nosed bat; • Pallid bat; and • Townsend's big-eared bat.	Confirm CMAs for bat Focus and BLM Special Status Species are implemented.	Pre-construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-3.** All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.	Confirm adequate design of culverts.	Design Pre-construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-5.** Following the clearance surveys (see Glossary of Terms, EIS Appendix 6) within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist (see Glossary of Terms, EIS Appendix 6) will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from	Confirm clearance surveys conducted.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	harm's way. • A designated biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. • As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.			
	CMA LUPA-BIO-IFS-6. When working in areas where protocol or clearance surveys are required (Appendix D of the DRECP), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.	Confirm biological monitoring is conducted.	Construction (geotechnical boring)	The Applicant
	CMA LUPA-BIO-IFS-7. A designated biologist (see Glossary of Terms, EIS Appendix 6) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.	Confirm biological monitoring is conducted.	Construction (geotechnical testing)	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-8.** Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.	Ensure the ground under vehicles are inspected for desert tortoise.	Construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-9.** Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted.	Ensure vehicle traffic speeds will not exceed 15 miles per hour within the	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
		areas not cleared by protocol level surveys where desert tortoise may be impacted		
Impact BIO-1	**CMA LUPA-BIO-IFS-11.** If Bendire's thrasher is present, conduct appropriate activity-specific biological monitoring (see Glossary of Terms, EIS Appendix 6) to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).	Confirm monitoring conducted if Bendire's thrasher is present	Construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-12.** If burrowing owls are present, a designated biologist (see Glossary of Terms, EIS Appendix 6) will conduct appropriate activity-specific biological monitoring (see Glossary of Terms, EIS Appendix 6) to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.	Confirm monitoring conducted if burrowing owls are present	Construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-13.** If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist (see Glossary of Terms, EIS Appendix 6) through the use of one-way doors will occur according to the specifications in Appendix D of the DRECP or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D of the DRECP or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.	Confirm that, if necessary, passive burrow exclusion conducted by a designated biologist.	Construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-14.** Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.	Confirm translocation of burrowing owls considered in coordination with CDFW.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1	**CMA LUPA-BIO-IFS-24.** Provide protection from loss and harassment of active golden eagle nests through the following actions: • Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.	Confirm actions to provide golden eagle nest protection are implemented.	Design	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-25.** Cumulative loss of golden eagle foraging habitat within a 1- to 4-mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20 percent. See CONS-BIO-IFS-5 for the requirement in Conservation Lands.	Confirm actions to provide golden eagle nest protection are implemented.	Design	The Applicant
Impact BIO-1	**CMA LUPA-BIO-IFS-26.** For activities that impact golden eagles, applicants will conduct a risk assessment per the applicable USFWS guidance (e.g., the Eagle Conservation Plan Guidance) using best available information as well as the data collected in the pre-Project golden eagle surveys.	Review golden eagle risk assessment for adequacy.	Design	The Applicant
	CMA LUPA-BIO-IFS-27. If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.	Verify whether permit for golden eagle take is determined to be necessary.	Prior to construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-PLANT-1.** Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant focus and BLM special-status species.	Confirm protocol surveys conducted during proper times.	Prior to construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-PLANT-2.** Implement an avoidance setback of 0.25 mile for all focus and BLM special-status species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant species (Appendix Q, Baseline Biology Report, in the	Confirm avoidance setback implemented.	Design Prior to construction	The Applicant

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	proposed LUPA and Final EIS [2015], or the most recent data and modeling).			
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-PLANT-3.** Impacts to suitable habitat for focus and BLM special-status plant species should be avoided to the extent feasible and are limited [capped] to a maximum of 1 percent of their suitable habitat throughout the entire LUPA DA. The baseline condition for measuring suitable habitat is the DRECP modeled suitable habitat for these species utilized in the EIS analysis (2014 and 2015), or the most recent suitable habitat modeling.	Confirm impacts to suitable habitat for Focus and BLM Special Status plant species are avoided.	Design	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3	**CMA LUPA-BIO-RIPWET-1.** The riparian and wetland DRECP vegetation types and other features listed in Table 17 will be avoided to the maximum extent practicable, except for allowable minor incursions (see Glossary of Terms for "avoidance to the maximum extent practicable" and "minor incursion," EIS Appendix 6) with the specified setbacks. For minor incursion (see "minor incursion" in the Glossary of Terms, EIS Appendix 6) to the DRECP riparian vegetation types, wetland vegetation types, or encroachments on the setbacks listed in Table 17, the hydrologic function of the avoided riparian or wetland communities will be maintained. Minor incursions in the riparian and wetland vegetation types or other features including the setbacks listed in Table 17 will occur outside of the avian nesting season, February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW if the minor incursion(s) is likely to result in impacts to nesting birds.	Confirm impacts to riparian and wetland DRECP vegetation types are avoided.	Pre-construction Construction Post construction	The Applicant
Impact BIO-1 Impact BIO-2 Impact BIO-3	**CMA LUPA-BIO-RIPWET-3.** For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM special-status riparian and wetland bird species, conduct a pre-construction/activity nesting bird survey for BLM Special-Status riparian and wetland birds according to agency-approved protocols. Based on the results of the nesting bird survey above, setback activities that are	Confirm agency-approved protocol level pre-construction nesting bird surveys for BLM Special Status riparian and wetland birds are	Pre-construction Construction Post-construction Decommissioning	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	likely to impact BLM Special-Status riparian and wetland bird species, including but not limited to pre-construction, construction and decommissioning, 0.25 mile from active nests special-status during the breeding season (February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW). For activities in areas covered by this provision that occur during the breeding season and that last longer than one week, nesting bird surveys may need to be repeated, as determined by BLM, in coordination with USFWS and CDFW, as appropriate. No pre-activity nesting bird surveys are necessary for activities occurring outside of the breeding season.	conducted for activities within 0.25 mile of riparian or wetland during breeding season.		
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-SVF-1.** For activity specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: yucca clones, creosote rings, Saguaro cacti, Joshua tree woodland, microphyll woodland, crucifixion thorn stands. BLM Guidelines for mapping/surveying cacti, yuccas, and succulents shall be followed.	Review map for adequacy.	Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-SVF-6.** Microphyll woodland: impacts to microphyll woodland (see Glossary of Terms, EIS Appendix 6) will be avoided, except for minor incursions (see Glossary of Terms, EIS Appendix 6).	Confirm impacts to microphyll woodland avoided.	Design Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-VEG-1.** Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.	Confirm adequacy of management.	Design Pre-construction	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-VEG-2.** Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	Confirm appropriate levels of dead and downed wood.	Construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-VEG-3**. Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.	Verify collection of plant material is consistent with	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
		maintenance.		
Impact BIO-1 Impact BIO-2	**CMA LUPA-BIO-VEG-5.** All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.	Confirm applicable regulations and policies are followed.	Construction Post-construction	The Applicant
Impact BIO-1	**CMA LUPA-BIO-VEG-6.** BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.	Confirm consult with BLM regarding disposal of succulents.	Construction Post-construction	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-SW-13.** BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.	Confirm consult with BLM regarding management of riparian areas.	Construction Post-construction	The Applicant
Impact BIO-1 Impact BIO-3	**CMA LUPA-SW-16.** The 100-year floodplain boundaries for any surface water feature in the vicinity of the Project will be identified. If maps are not available from the FEMA, these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.	Confirm identification of 100-year floodplain boundaries.	Design	The Applicant
Impact BIO-1	**CMA LUPA-TRANS-BIO-1.** Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the common raven, and minimize collision risks for birds and bats.	Confirm resource protection implemented.	Design	The Applicant
Impact BIO-1	**CMA LUPA-TRANS-BIO-2.** Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by BLM, in coordination with USFWS and CDFW as appropriate, and will be based on the	Confirm flight diverter installation.	Design Construction	The Applicant

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	best available scientific and commercial data regarding the prevention of bird collisions with transmission and guy wires.			
Impact BIO-1	**CMA LUPA-TRANS-BIO-3.** When siting transmission activities, the alignment should avoid, to the maximum extent practicable, being located across canyons or on ridgelines. Site and design sufficient distance between transmission lines to prevent electrocution of condors.	Confirm alignment meets standards.	Design	The Applicant
Impact BIO-1 Impact BIO-2	**CMA LUPA-TRANS-BIO-4.** Siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in Aeolian corridors, rare vegetation alliances and focus and BLM Special-Status species. Transmission substations will be sited to avoid Aeolian corridors, rare vegetation alliances, and sand-dependent focus and BLM special-status species habitats.	Confirm siting meets standards.	Design	The Applicant
Impact BIO-1	**CMA DFS-VPL-BIO-FIRE-1.** Implement the following standard practice for fire prevention/protection: • Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission Project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.	Confirm implementation of fire prevention standards.	Pre-Construction Construction	The Applicant
Impact BIO-1 Impact BIO-2	MM BIO-CEQA-1 Implement Biological Resources Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions.	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs,	APMs, BMPs, and CMAs shall be implemented throughout	The Applicant shall ensure that all APMs, BMPs, and CMAs are

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	The APMs, BMPs and CMAs in Sections 2.4.2 and 2.4.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, during, and after Project activities to avoid or minimize Project related impacts on biological resources. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the Weekly Compliance Report to the BLM and CPUC Monthly Compliance Report. Each report shall include a summary of the construction activities completed, a review of the sensitive plants and wildlife encountered, a list of compliance actions and any remedial actions taken to correct the actions, and the status of on-going mitigation efforts. Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.	and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	construction activities.	implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.
Impact BIO-1 Impact BIO-2 Impact BIO-4	MM BIO-CEQA-2: Implement a Worker Environmental Awareness Program (WEAP). BMP-BIO 1 and CMA LUPA-BIO-5 shall be incorporated within this MM BIO-CEQA-2. Prior to any work activities on the Project site, including surveying, mobilization, fencing, grading, or construction, a WEAP shall be prepared and implemented by the Applicant. Prior to implementation the WEAP will be approved by the CPUC with a final version completed prior to the issuance of construction permits. The WEAP shall be implemented throughout the duration of Project, including O&M phases. Successful implementation of the WEAP will result in all on-site Project personnel	The WEAP shall be developed by a qualified biologist designated by the Applicant and approved by the CPUC. A copy of the WEAP shall be kept at an easily accessible location within the Project site for the duration of the Project. A log of all personnel who have completed the	Prior to construction, and during construction for all new on-site Project personnel.	The Applicant shall ensure that a qualified biologist (approved by the CPUC) prepares the WEAP and that it is implemented for all on-site Project personnel.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	being properly informed and educated on the pertinent environmental concerns related to the Project. One of the main goals of the WEAP, is that it shall reduce unintentional impacts to biological resources within the Project area and ensure that all workers are trained in accordance with this MM. The WEAP shall include, at a minimum, the following items: Maps showing the known locations of listed and/or special-status wildlife, populations of listed and special-status plants and sensitive vegetation communities, riparian habitats, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations. A discussion of measures to be implemented for avoidance of sensitive resources discussed in the EIS (including this appendix) and the identification of an onsite contact in the event of the discovery of sensitive species on the Project site; this shall include a discussion on micro trash. Training materials and briefings shall include, but not be limited to: a discussion of the FESA and CESA; the BGEPA; the MBTA; the APLIC guidelines; the consequences of non-compliance with these regulations; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event of the discovery of dead or injured wildlife; and a review of mitigation requirements. Protocols to be followed when roadkill is encountered in the work area, or along access roads, and the identification of an onsite representative to whom the roadkill shall be reported. Roadkill shall be reported to the appropriate local animal control agency, the CPUC within 24 hours. Roadkill of special-status species shall also be reported to the CDFW and/or USFWS within 24 hours or otherwise specified in Project-specific	WEAP training shall be kept on site.		

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	permits. Literature and photographs or illustrations of potentially occurring special-status plant and/or wildlife species shall be provided to all Project contractors and heavy equipment operators. A special hardhat sticker or wallet size card shall be issued to all personnel completing the training, which shall be carried with the trained personnel at all times while on the Project site. All new personnel shall receive this training and may work in the field for no more than 5 days without participating in the WEAP. A log of all personnel who have completed the WEAP training shall be kept on site. A copy of the WEAP shall be kept at an easily accessible location within the Project site (i.e., foreman's vehicle, construction trailer, etc.) for the duration of the Project. A standalone version of the WEAP shall be developed, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations. The Applicant shall ensure that interpretation of the WEAP is available for all non-English speaking workers. Standards for Success: All construction/Project related personnel are trained in the key characteristics for identifying and avoiding impacts to special status species and sensitive habitats.			
Impact BIO-1 Impact BIO-2	MM BIO-CEQA-3: Implement Biological Construction Monitoring. APM BIO-2, BMP BIO-02, and CMA LUPA BIO-2 shall be incorporated within this MM BIO-CEQA-3.	Copies of daily monitoring reports shall be compiled and submitted to the CPUC,	During all Project phases if biological resources are	The Applicant is responsible for designating qualified biologists

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	No more than 30 days prior to the start of site mobilization or ground disturbing activities, the Applicant shall designate a qualified biologist(s) to monitor construction of the Project. Multiple qualified biologists shall be designated by the Applicant, as needed. Designated qualified biologists must be approved by the CPUC, BLM, and CDFW prior to conducting construction monitoring. The biologist(s) must be knowledgeable with the life history and habitat requirements of Federal and State listed and special-status plants, mammals, reptiles, amphibians, and birds. The qualified biologist(s) shall conduct clearance surveys for listed and special-status species prior to the start of construction activities each workday during initial site disturbance; clearance surveys can be conducted on a weekly basis thereafter. Any handling of special-status species must be approved by the appropriate Federal and State agencies and be done in accordance with species-specific handling protocols. During initial site disturbance, and for the duration of construction, the qualified biologist(s) shall remain on-site at all times when activities shall occur immediately adjacent to, or within, habitat that supports populations of listed and/or special-status species. The designated biologist(s) shall relocate terrestrial special-status species that would be impacted by the Project. An exception to this would be for Fully Protected species, which would require avoidance. Additionally, Federal and state-listed species would require FESA and CESA authorization to handle or relocate. All locations of listed and/or special-status plants shall be flagged for avoidance or salvage, relocation, or transplanting as described in MM VEG-CEQA-4. Similarly, locations of listed and/or special-status wildlife shall be flagged for avoidance and appropriate avoidance buffers established as described in MM WIL-CEQA-1 through MM WIL-CEQA-11. If dead or injured special-status wildlife species and/or impacted special-status plant are detected on the construction site, the qualified biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to	BLM, and CDFW on a weekly basis. Separate incident reports shall be compiled and submitted to the appropriate Federal and State agencies if observations of dead, injured or impacted special-status species are observed during monitoring within five calendar days.	pertinent or monitoring is required by the appropriate Federal or State regulatory agency.	to monitor Project construction activities that are within and/or adjacent sensitive habitats, and/or have the potential to impact special-status species.

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	prevent future incidents. Details of these measures shall be included within monitoring separate incident report. Species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, as well as all other appropriate Federal and State regulatory agencies, shall be contacted regarding ultimate disposal of the remains. The incident report shall be sent to the CPUC, CDFW and/or USFWS (as appropriate), as well as any other appropriate Federal and State agencies, within five calendar days. The construction biological monitoring report shall at a minimum include: the date, time of the finding or incident (if known), and location of the carcass, injured animal or other impacted species, and the circumstances of its death or injury (if known). Injured animals shall be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility. Standards for Success: Sensitive biological resources are avoided and/or impacts are reduced to a less than significant level throughout all construction activities.			
Impact BIO-1 Impact BIO-2	MM BIO-CEQA-4: Avoidance Measures and Compensation for Impacts to Jurisdictional Waters/Wetlands and/or Sensitive Natural Communities. The following APMs, BMPs, and CMAs shall be incorporated within this MM BIO-CEQA-4: APM BIO-2; BMP BIO-2; APM BIO-4; APM BIO-11; BMP BIO-11; APM BIO-13; APM BIO-14; APM BIO-15; BMP BIO-15; APM BIO-16; BMP BIO-24; BMP BIO-25; BMP BIO-52; BMP BIO-53; BMP BIO-55; BMP VEG-01; BMP VEG-02; CMA DFA-BIO-IFS-1; CMA DFA-BIO-IFS-2; CMA DFA-VPL-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-7; CMA LUPA-BIO-9; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-5; CMA LUPA-BIO-PLANT-1; CMA LUPA-BIO-PLANT-2; CMA LUPA-BIO-RIPWET-1; CMA LUPA-BIO-RIPWET-3; CMA LUPA-BIO-SVF-1; CMA LUPA-BIO-SVF-6;	A Preliminary Jurisdictional Wetlands/Waters Delineation Report shall be prepared and approved by the ACOE and CDFW prior to Project commencement; all required regulatory permits must be obtained prior to the start of Project activities. All jurisdictional waters/wetlands and	Pre-construction surveys to delineate jurisdictional aquatic resource features and/or map sensitive vegetation communities shall be completed prior to Project commencement and all required permits have been	The Applicant shall ensure that a designated qualified biologist (approved by the CPUC, BLM, and CDFW) conducts pre-construction surveys (i.e., delineation and mapping) for jurisdictional waters/wetlands and sensitive

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	CMA LUPA-SW-13; and CMA LUPA-SW-16. To avoid, minimize disturbance, and restore impacts to jurisdictional waters/wetlands and sensitive natural communities the following shall be implemented: Prior to conducting any Project activities, a formal jurisdictional delineation and mapping of sensitive natural communities shall be conducted following current protocols, guidance, and standards, as defined by the ACOE, RWQCB, and CDFW. The Applicant shall ensure that a formal delineation is conducted, and all required regulatory permits are obtained prior to the start of Project construction activities. Implement APMs and BMPs to prevent prohibited materials from entering jurisdictional waters/wetlands and/or causing disturbance to sensitive natural communities. Construction activities shall be done in such a manner as to avoid and minimize the removal and impacts to jurisdictional waters/wetlands and sensitive natural communities to the extent feasible. If jurisdictional waters/wetlands and/or sensitive natural communities are present within the Project area, then they shall be identified as environmentally sensitive areas and flagged by an Applicant designated qualified biologist prior to construction activities. If jurisdictional waters/wetlands and/or sensitive natural communities are present within the Project area, then the Applicant shall ensure that the designated qualified biologist is on-site at all times during active work in these areas; including but not limited to within the floodplain, adjacent to and/or in jurisdictional waters/wetlands, and/or in sensitive natural communities. All on-site personnel shall be instructed on the importance of avoiding and minimizing disturbance in these areas if present within the	sensitive natural communities shall be identified (including measures for avoidance and mitigation), mapped, and included in the Vegetation Management Plan (MM VEG-CEQA-1). Specific mitigation and monitoring requisites for temporarily and/or permanently impacts jurisdictional waters/wetlands and/or sensitive natural communities shall also be documented in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4). Subsequent follow-up reporting measures are as defined in the Vegetation Management Plan (MM VEG-CEQA-1) and Special-Status Plant and Sensitive Vegetation Community Mitigation	obtained. Environmentally sensitive area exclusion fencing (at appropriate buffer distances) shall be implemented in the appropriate locations prior to Project activities. All temporary and permanent mitigation shall be approved by the appropriate Federal and/or State regulatory agencies prior to Project commencement.	natural communities. The Applicant is responsible for the implementation of environmentally sensitive area exclusion fencing and mitigation from potential impacts of these features.

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	Project area. If impacts to jurisdictional waters/wetlands or sensitive natural communities cannot be avoided, the Applicant shall coordinate with the appropriate Federal and State regulatory agencies to obtain authorization from the ACOE through a CWA Section 404 ACOE Nationwide Permit (NWP) or Individual Permit (IP); the RWQCB through a CWA Section 401 WQC; and the CDFW through a California FGC Section 1602 LSA Notification. The Applicant shall restore all temporary impacts at a ratio of 1.5:1 as described in the Vegetation Management Plan (MM-VEG-CEQA-1). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. To compensate for permanent impacts to jurisdictional waters/wetlands, the impacted areas shall be replaced at a minimum ratio of 2:1 but will vary depending on the mitigation strategy used. Permanent impacts to riparian desert woodland habitats (e.g., blue Palo Verde-ironwood woodland, mesquite thickets, bush seepweed) that are jurisdictional shall be mitigated at a ratio of 5:1 (e.g., desert riparian woodland). Additional mitigation may be proposed by each Federal and/or State agency during the regulatory permitting process. The mitigation strategy to compensate for the loss of jurisdictional habitats may be achieved by (a) on-site habitat creation or enhancement with similar species compositions to those present prior to construction; (b) off-site creation, enhancement, and/or preservation; and/or (c) participation in an established mitigation bank program. If offsite lands are used as part of the mitigation strategy, then they shall be permanently protected by establishing a conservation easement. The Applicant shall	and Monitoring Plan (MM-VEG-CEQA-4).		

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	coordinate with CPUC, BLM, and CDFW to determine the conditions of the conservation easement, including the required acreage to be conserved and the required monitoring and management of the conserved lands, as appropriate. All mitigation for temporary and/or permanent impacts to jurisdictional waters/wetlands and/or sensitive natural communities shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. All created or restored habitats shall be monitored per the requirements in the Vegetation Management Plan (MM-VEG-CEQA-1), and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4). All lands identified for preservation would require the recordation of a conservation easement. The easement could be held by CDFW or an approved land management entity. All lands identified for preservation shall require approval from the appropriate Federal and/or State regulatory agency. Standards for Success: No net loss of jurisdictional waters/wetlands and/or sensitive natural communities. Disturbance to all jurisdictional waters/wetlands and/or sensitive natural communities shall be minimized and avoided to the extent feasible. Temporary impacts shall be restored at a 1.5:1 ratio. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Permanent impacts to jurisdictional waters/wetlands shall be mitigated at a ratio that varies from 2:1 to 5:1 depending on the resource impacted and mitigation strategy used. All temporary and/or permanent impacts to jurisdictional waters/wetlands and/or sensitive natural communities shall be mitigated and approved by the appropriate Federal and State regulatory agencies.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1	MM VEG-CEQA-1: Develop and Implement a Vegetation Management Plan. The following APMs, BMPs, and CMAs shall be incorporated within this MM VEG-CEQA-1: APM BIO-4; APM BIO-10; APM BIO-11; BMP BIO-11; APM BIO-12; APM BIO-13; APM BIO-14; APM BIO-15; BMP BIO-15; APM BIO-16; BMP BIO-32; BMP BIO-37; BMP BIO-41; BMP BIO-41; BMP BIO-43; BMP BIO-51; BMP BIO-52; BMP BIO-53, BMP BIO-54; BMP BIO-55; BMP VEG-01; BMP VEG-02; CMA DFA-BIO-IFS-1; CMA DFA-BIO-IFS-2; CMA LUPA-BIO-1; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-7; CMA LUPA BIO-8; CMA LUPA-BIO-10; CMA LUPA-BIO-11; CMA LUPA-BIO-14; CMA LUPA-BIO-15; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-PLANT-1; CMA LUPA-BIO-PLANT-2; CMA LUPA-BIO-PLANT-3; CMA LUPA BIO-SVF-1; CMA LUP-BIO-VEG-1; CMA LUP-BIO-VEG-2; CMA LUP-BIO-VEG-3; CMA LUP-BIO-VEG-5; CMA LUP-BIO-VEG-6; CMA LUPA-SW-13; CMA LUPA-TRANS-BIO-4; and CMA DFS-VPL-BIO-FIRE-1. Prior to the start of ground disturbance, the Applicant shall develop and implement a Vegetation Management Plan for the Project. The Vegetation Management Plan shall be approved by the BLM, CPUC, and CDFW prior to the start of any Project activities (i.e., mobilization). The purpose of the Vegetation Management Plan is to provide guidance and outline a Project-specific protocol to ensure that the Applicant restores all temporarily disturbed areas to pre-construction conditions, or better, and provide for habitat preservation, creation, and/or restoration resulting from permanent impacts to special-status species habitat, sensitive vegetation communities, and/or jurisdictional waters/wetlands. The Vegetation Management Plan shall detail procedures to manage, monitor, mitigate, and restore native vegetation and habitat, as well as provide controls for noxious and invasive weed species. The Vegetation Management Plan shall incorporate the APMs, BMPs, and CMAs, by including the specifications detailed in the Habitat Restoration and Monitoring Plan, the Noxious Weed	Prior to Project commencement, pre-construction vegetation surveys shall be conducted by an Applicant designated qualified biologist. A Vegetation Management Plan shall be prepared by the Applicant and approved by the appropriate Federal and State regulatory agencies prior to Project commencement. Following Project completion, the Applicant shall ensure post-construction vegetation management surveys are completed quarterly and annually. Post-Construction Vegetation Management Quarterly Monitoring Reports, and Post-Construction Vegetation Management Annual Monitoring Reports shall be prepared by the Applicant and	Vegetation management shall be conducted, as needed, within the Project area prior to construction, during construction, and following the completion of Project activities; special attention will be paid to avoid nesting/breeding seasons for special-status wildlife and blooming periods for status plants where practicable.	The Applicant shall ensure that a qualified biologist (approved by the CPUC, BLM, and CDFW) familiar with special-status species, sensitive vegetation communities, noxious and invasive vegetation species, and jurisdictional waters/wetlands present in the Project region, is appointed to oversee vegetation management activities.

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	Management Plan/Invasive Species Management/Control Plan, and all other applicable vegetation management mitigation and monitoring plans associated with the Project. The Vegetation Management Plan shall also reference and integrate protocols and requirements detailed in the most up-to-date State and Federal laws, policies and guidance regarding vegetation management including, but not limited to: • *Integrated Vegetation Management Handbook* (BLM 2008); Integrated Weed Management Plan (BLM 2015b); Memorandum of Understanding on Vegetation Management for Powerline Rights-of-Way (USDA 2016); New Diagrams and Applications for the Wire Zone-border Zone Approach to Vegetation Management on Electric Transmission Line ROWs (Ballard et al. 2007); Saguaro (Carnegiea gigantea, Cactaceae) Age-Height Relationships and Growth: The Development of a General Growth Curve (Drezner 2003); The Step-Pointe Method of Sampling- A Practical Tool in Range Research (Evans et al. 1957); and Transmission Vegetation Management, NERC Standard FAC-003-2 Technical Reference (NERC 2009-2011). The Vegetation Management Plan shall include, at a minimum, an overview of the following technical items: **Vegetation Management Goals and Objectives.** The goals of Project vegetation management shall be defined in the Project Vegetation	submitted to the appropriate Federal and State regulatory agencies.		

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	Management Plan. At a minimum, Project vegetation management shall be consistent with the following objectives: Vegetation management measures and BMPs pertaining to sensitive vegetation species and habitats, seeding, soils, restoration and revegetation, noxious and invasive weeds, equipment, schedule and implementation timing, success criteria, monitoring and reporting will be specifically outlined and be consistent with the aforementioned protocols and methodologies set forth by the appropriate State and Federal regulatory agencies; Vegetation will be trimmed, cleared, or otherwise controlled, to minimize and reduce impacts to the extent practicable; Avoidance and minimization shall be employed to ensure the reduction, introduction, and spread of noxious and invasive weed species; The Project will restore, and revegetate affected areas; Habitat enhancement and preservation shall be applied to the extent practical (e.g., promote appropriate levels of dead and downed woody debris to provide habitat and sees bed establishment); and Mitigation and contingency measures will be employed on an as needed basis. **Plan Submittal and Approval Process.** A process for proposing Vegetation Management Plan modifications to the appropriate Federal and State regulatory agencies for review and approval shall be outlined**.** **Avoidance, Minimization, Restoration, and Mitigation Criteria.** Documentation shall include the avoidance, minimization, restoration, and mitigation criteria terms, stipulations, and general conditions required by the appropriate Federal and State regulatory agencies. All disturbed Project			

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	areas shall be restored and revegetated to the extent practicable, given the arid desert environment. **Pre-Construction Project Site Conditions.** Provide a description of the pre-Project conditions. Describe other site characteristics relevant to the management of vegetation (e.g., composition of plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species, pre-construction anthropogenic factors, etc.). This shall also include ecological characteristics and factors **(**e.g., total population, reproduction, distribution, pollinators, etc.). **Methods**. Describe the methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, crush and drive-cut-mow removal techniques, etc.) and the long-term maintenance required. **Discussion.** The Vegetation Management Plan will include a discussion section that, at a minimum, considers specifications for habitat preservation and enhancement, adaptive management, use of conservation easements (e.g., Desert Wildlife Management Area, Wildlife Habitat Management Area), and other land use protections and restrictions applicable to the management of vegetation within the Project area. **Schedule.** A proposed schedule for all vegetation management, including vegetation pre- and post- construction surveys, monitoring, mitigation, restoration, and Project construction activities. The following is recommended as part of the Vegetation Management Plan schedule: Species-specific seasonal restriction dates will be outlined in the Vegetation Management Plan and observed during implementation. At a minimum, this shall incorporate timeframes for breeding and nesting birds, lambing, fawning, or roosting of species, bloom periods for special-status species, and periods of highest precipitation and rainfall (i.e., to maximize irrigation			

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	requisites and implement erosion controls). The Project area should be broken up into sections based on the required construction activities; When applicable, restoration or habitat enhancement activities shall be implemented once construction activities are complete within a specific area; and Restoration and/or creation of habitat should occur within an appropriate window for each specific community and species makeup (i.e., impacts to habitat during the summer months may not be initiated until the fall to promote native seed germination). **Pre-Construction Survey.** Pre-construction vegetation surveys will consist of up to three survey events, to capture the annual species only present at specific times of the year, to document the presence of special-status species, to identify and map the locations and extent of sensitive vegetation communities, and a general vegetation inventory survey for all vegetation species, including invasive and noxious weeds. Measures for conducting and completing floristic surveys to support the Vegetation Management Plan are specified in MM VEG-CEQA-2—Conduct Pre-Construction Floristic Surveys. **Post-Construction Surveys, Monitoring, and Reporting.** The Applicant shall appoint a qualified biologist to complete post-construction surveys. Monitoring surveys shall be conducted within following vegetation management activities within the Project area (e.g., restoration, re-contouring, etc.). Areas subject to vegetation management shall be monitored to assess progress and to make recommendations for successful revegetation, habitat enhancement, etc. Monitoring surveys shall be performed by a qualified biologist knowledgeable in the area of vegetation management and restoration specific to the Project vegetation communities			

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	and jurisdictional waters/wetlands. Monitoring o Qualitative Monitoring: Qualitative monitoring surveys shall be performed monthly in all vegetation management areas for the one year following the completion of Project activities and subsequent vegetation management implementation. Qualitative monitoring shall be on a quarterly schedule thereafter, until final completion and approval by the appropriate Federal and State regulatory agencies. Qualitative monitoring shall assess native plant species performance, including growth and survivorship, germination success, reproduction, plant fitness and health, and pest or invasive plant problems. Monitoring at this stage shall indicate need for remediation or maintenance work well in advance of final success/failure determination. Post-Construction Vegetation Management Quarterly Monitoring Progress Reports shall be prepared for the first year of monitoring and are further described below. o Quantitative Monitoring: Quantitative monitoring shall occur annually for year one through five, or for additional years until the success criteria are met. Within each vegetation management area, the qualified biologist shall collect data in a series of 1 m^2 quadrats to estimate absolute and relative cover and density of each plant species. In year 2 or 3, depending on the growth within the vegetation management, the qualitative monitoring methods may deviate from the quadrat methodology to toe-point transects (Evans et al. 1957). Data shall be used to measure native species growth performance, to estimate native and non-native species coverage, seed mix germination, native species recruitment and			

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	reproduction, and species diversity. Based on these results, the designated biologist shall make recommendations for maintenance, adaptive management, or remedial work efforts that may be needed to meet success criteria for the Project area vegetation management requisites. Reporting Quarterly Reporting: For the first year, a Post-Construction Vegetation Management Quarterly Monitoring Progress Report shall be compiled by the Applicant detailing the post-construction results for areas where vegetation management has occurred within the Project area. The Post-Construction Vegetation Management Quarterly Monitoring Progress Reports shall include results for monthly qualitative monitoring; specifically, summarizing site status and recommended remedial measures. Each Post-Construction Vegetation Management Quarterly Monitoring Progress Report shall list estimated species coverage and diversity, species health and overall vigor, the establishment of volunteer native species, topographical/soils conditions, problem weed species, the use of the site by wildlife, significant drought stress, and any recommended remedial and/or adaptive management measures deemed necessary to ensure compliance with specified vegetation management success criteria. Annual Reporting: Every year, for years one through five, the results of annual quantitative monitoring shall be compiled into an Annual Post-Construction Vegetation Management Report by the Applicant. Each annual report shall list plant species coverage and diversity measured during yearly quantitative surveys, compliance/non-compliance with required vegetation management success criteria, species health and overall vigor, the establishment of volunteer native species, hydrological and topographical conditions, use of the site by wildlife, and the presence of invasive weed species. In the event of where the required vegetation			

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	management success criteria are not fulfilled, the Annual Post-Construction Vegetation Management Report shall include remedial and/or adaptive management measures to ensure future success (CPUC 2016). These annual reports shall be forwarded by the qualified biologist to the appropriate State and Federal regulatory agencies (e.g., CPUC, BLM, and CDFW) at the end of each year following implementation of the Vegetation Management Plan, until the established success criteria have been met. Each Post-Construction Vegetation Management Annual Report shall include, at the minimum: – The name, title, and company of all persons involved in restoration monitoring and report preparation; – Maps or aerials showing vegetation management (i.e., restoration and invasive weed management areas), transect locations, and photos documentation with locations; – An explanation of the methods used to perform vegetation management, including, but not limited to, the number of acres for restoration and/or areas treated for removal of non-native plants; and – An assessment of the treatment success. **Planting Methodology and Palette**. Revegetation plantings shall be implemented in all areas impacted by Project activities. A description of the preferred methods for seeding shall be provided within the Vegetation Management Plan (e.g., hydroseeding, drill seeding, broadcast seeding, etc.). Additionally, a discussion on proposed timing of seeding, type and duration of irrigation system proposed (if needed), and erosion controls for revegetation activities, shall be included.			

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	Several different plant palettes shall be developed depending on the vegetation communities proposed to be restored. The plant palettes shall include an appropriate native seed mix representative of the current species composition in the Project area. Seed should be sourced from genetic stock appropriate to the Project vicinity. In additional, all plant materials used in Project revegetation shall be consistent with the maintenance of natural ecosystem processes. Supply of seed material and container plants will be purchased by the Contractor. If commercial seed mixes are purchased, they shall be native and free of noxious weeds. If seed from genetic stock appropriate to the Project vicinity is not available, seeds can be collected within the Project vicinity with the appropriate permits and tags for native plant collection. The source of available seed must be approved by the BLM and CPUC prior to use in any species palates. Seeding and revegetation shall begin after construction has and will occur within 30 days post-construction. Supply of seed material and container plants will be purchased by the Contractor(s). **Noxious Weed and Invasive Species Management.** The Vegetation Management Plan will identify noxious and invasive weed species to be addressed in the Project area, describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. Specifically, an inventory of invasive and noxious weeds shall be compiled following pre-construction floristic surveys and disposed of at an appropriate off-site location (MM VEG-CEQA-2). If weeds are detected in the Project area following removal, then remedial actions shall be employed to eradicate noxious or invasive weed species and to prevent their subsequent spread. All equipment, tools, and tires shall be properly cleaned and decontaminated of noxious weeds before entering the Project region. Prior			

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	to construction activities (i.e., including clearing, grubbing, etc.), a Weed Decontamination Form will be submitted to the Project Designated Biologist. The Weed Decontamination Form shall verify that construction related equipment used by the contractor(s), has been cleaned and deemed weed free, before entering the Project region. Vehicle and equipment wash, and inspection stations will be utilized minimize the introduction of invasive weeds or subsidy of invasive weeds. Weed removal activities such as noxious/ invasive weed removal, and other varied management practices, are recommended before (e.g., topsoil weed removal) and after construction. When installing sediment barriers, the use of certified weed-free mulch, straw, hay bales, or equivalent fabricated materials shall be prescribed. The use of pesticides and/or herbicides is restricted in areas associated with waterways, wetlands, or areas that could impact water quality. Weed removal in jurisdictional areas adjacent to streams or wetlands shall be done using hands tools. Application of pesticides and/ or herbicides must be approved by the Project Designated Biologist, the appropriate local, State, and Federal regulatory agencies. **Soils and Contouring.** Native soils will be salvaged to the extent feasible. Specifically, soil horizons will be separated for the spoils, stored during construction, and returned to their native sites to ensure revegetation and restoration success. Restoring and preserving vegetation, as well as soil, will support and maintain native vegetation communities, associated carbon sequestration and nutrient cycling processes, and habitat for wildlife species. Erosion control measures will be implemented during all Project ground disturbance, including vegetation management activities. Recontouring of areas that were altered from their original contour or gradient is required.			

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	Treatment of Succulents. Measures would be implemented to minimize the number of succulents (e.g., saguaro cacti) that must be relocated for the safe construction and operation of the transmission line. The Vegetation Management Plan shall detail requirements and methods for the salvage, storage, and replanting of succulent species. Saguaro cacti that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if they cannot be avoided through Project design. When possible, succulent species that must be removed would be relocated as directed by the appropriate State and Federal agencies (i.e., the BLM). Monitoring and management would be detailed in the Vegetation Management Plan. **Success Criteria.** A description of the success criteria and methods for achieving success of vegetation management, specifically restoration/revegetation efforts, and supplemental activities to be conducted. Success criteria in the Vegetation Management Plan shall address include the following components: Compliance Success: evaluates compliance with Project scope, permits, contracts, etc. Functional Success: evaluates habitat integrity and determines if restoration of the designated ecosystem(s) has been successful. Landscape Success: measures functional success and how restoration, management, maintenance, and monitoring of Project vegetation has contributed to the ecological integrity of overall landscape and has further maintained and/or enhanced biodiversity. Success will be based on the establishment of seeded and planted species and the exclusion of exotic and ruderal species as compared to reference or neighboring sites. **Figures.** The Vegetation Management Plan shall include detailed figures indicating the locations and vegetation types of areas proposed for			

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	management (i.e., areas of temporary or permanent disturbance, mitigation areas, etc.). The location of special-status plant species shall be consistent with the floristic inventory conducted as part of MM VEG-CEQA-2. Specifically, these figures shall meet the specific BLM Guidelines for mapping of succulent species (e.g., cacti, yuccas, etc.); Mapped habitats for other species shall be consistent with the survey requirements; Avoidance setbacks for sensitive vegetation species and habitats shall be delineated on the Vegetation Management Plan figures. Setbacks shall be consistent with appropriate distances outlined in the APM, BMP, and CMA measures, as well as those defined by State and Federal requisites for the Project; and Vegetation Management Plan figures shall be updated, as necessary, to reflect current site conditions should they change. **Supplemental References.** In addition to the incorporation of the most-up-to-date State and Federal protocols, policies and guidance pertaining to vegetation management, the following Project-specific plans shall be referenced and/or included as supplemental attachments to the Vegetation Management Plan. ECP/ Erosion, Dust Control, and Air Quality Plan; Fire Prevention Plan; Project grading plans; SPCC; and SWPPP			

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	Standards for Success: Restore temporarily disturbed areas to pre-construction conditions, or better, and provide for habitat preservation/creation/restoration resulting from permanent impacts to sensitive vegetation species, sensitive vegetation communities, and jurisdictional waters/wetlands. Reduce the spread and introduction of noxious and invasive vegetation species. Ensure all Project vegetation management success criteria are met. Remedial and/or adaptive management measures shall be implemented to meet vegetation management success criteria for the Project, as needed.			
Impact BIO-1	MM VEG-CEQA-2 Conduct Pre-Construction Floristic Surveys. The following APMs, BMPs, and CMAs shall be incorporated within this MM BIO-VEG-CEQA-2: APM BIO-2; BMP BIO-02; APM BIO-4; APM BIO-11; BMP BIO-11; BMP BIO-24; BMP BIO-41; BMP BIO-52; BMP BIO-53; CMA DFA-BIO-IFS-1; and CMA LUPA-BIO-1. Prior to the start of ground disturbance, including fencing, grading, or construction, the Applicant shall designate a qualified biologist/botanist (approved by the CPUC, BLM, and CDFW) to conduct pre-construction floristic surveys for the Project. The purpose of the pre-construction floristic surveys is to identify if and/where special-status plant species occur within the Project area. The pre-construction floristic surveys shall also adhere to the following protocols and requisites detailed by the BLM, and the most up-to-date State and Federal protocols, policies, and guidance: CNPS Botanical Survey Guidelines (CNPS 2001); General Rare Plant Survey Guidelines (Cypher 2002); Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plant (USFWS 1996); Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018a);	Surveys and monitoring of special-status plants, if identified, shall be conducted by a designated qualified biologist/botanist. The Applicant shall produce a Pre-Construction Floristic Survey Report documenting the results of the floristic survey(s) and submit to the BLM and CPUC, as well as all other appropriate State and Federal agencies. If special-status plants are determined present in the Project area during pre-construction and impacts are unavoidable, then consultation with	A series of three floristic surveys, to capture different blooming periods, will be conducted prior to the start of construction activities; surveys will be conducted in February, May, and September.	Supervision, guidance, and verification of the implementation of these measures shall be achieved by the Applicant and the designated qualified biologist/botanist.

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	Survey Protocols Required for NEPA/ESA Compliance for BLM Special-Status Plant Species (BLM 2009). Reconnaissance-level surveys, floristic in nature, will be conducted to inventory plants occurring within the Project area. The surveys shall be completed prior to Project commencement. It is recommended that the surveys be conducted concurrently with blooming periods for all special-status species known to occur in the Project and surrounding area as detailed below. The purpose of the surveys is to identify and record all observable plant species (at a minimum to the genus level); identify and map areas where special-status plant species occur and to support pre-construction requisites detailed in the Vegetation Management Plan (MM VEG-CEQA-1) (e.g., avoidance areas, occurrences of invasive and noxious weeds, etc.). A complete inventory of observed plant species will be compiled and included as an appendix in the Vegetation Management Plan (MM VEG-CEQA-1). In addition, ACOE national wetland indicator status, and the native/non-native status of each species observed shall be included. For invasive and noxious plant species, their State and Federal ranks shall be listed using up-to-date information provided by the U.S. Department of Agriculture (USDA) and the Cal-IPC. a) Surveys for Sensitive Plant Species: To avoid and/or minimize impacts to endangered, threatened, rare, and/or special-status plant species within the Project area, the designated qualified biologist/botanist will conduct pre-construction floristic surveys for sensitive plant species. The pre-construction floristic surveys shall be at a reconnaissance-level and timed to cover the appropriate bloom period(s) for the sensitive plant species that have known occurrences and/or have a moderate potential to occur in the Project area. Specifically, for the Project, three pre-construction bloom-period floristic surveys are recommended to be conducted to maximize the	appropriate Federal and State agencies will be completed and Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan will be developed and implemented.		

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	potential for observations during the appropriate bloom-period for special-status species that have known occurrences or the potential to occur in the Project area, which include reference populations for each special-status species shall be checked to ensure surveys are conducted during appropriate blooming periods. If special-status plants are determined to have no presence within the Project area, then no further action or mitigation is required. b) If special-status plant species are determined present within the Project area during pre-construction floristic surveys, Project activities shall be reduced and minimized to avoid impacts to the extent feasible. In addition, mapping the population and placing flagging and/or exclusion fencing to protect the special-status plant species within the Project area during construction shall be implemented. Installation of environmentally sensitive area fencing and appropriate signage at an appropriate setback or buffer distance, starting from the edge of the individual and/or population. Signage should indicate the area is environmentally sensitive and not to be disturbed. Specifically, if any Federal or State listed threatened or endangered plant species are detected in the Project area that may be impacted, a buffer zone shall be implemented of sufficient size to prevent direct or indirect disturbance to the special-status plants from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist. At a minimum, the buffer for trees or shrubs species shall be equal to twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. The buffer for herbaceous species shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then the Applicant shall develop			

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	and implement site-specific monitoring and put other measures in place to avoid species impacts. If special-status plants are determined present in the Project area during pre-construction floristic surveys and direct and/or unavoidable impacts to special-status plant species shall result from Project activities, then consultation with appropriate Federal and State agencies will be required to develop acceptable mitigation (e.g., agency recommended mitigation may include translocation of individual plants, rectification of impact by seed collecting and stockpiling for replanting/replacement, mitigation fees, and/or permitting). Once mitigation has been determined by the appropriate State and Federal agencies, then a Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan shall be developed and implemented upon approval of the agencies. Specifications for the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan are detailed in MM VEG-CEQA-4 below. Additional reporting and protocol-level survey requirements will be detailed in the Vegetation Management Plan criteria (MM VEG-CEQA-1) and in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. In addition, as part of the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, if special-status species individuals and/or populations are identified within the Project area, then the designated qualified biologist/botanist will collect specific ancillary data using the *General Instruction for Filling Out CNDDB Field Forms* (CDFW 2018b). The Applicant is responsible for ensuring submittal of all special-status plant species observations to CDFW CNDDB. **Standards for Success:** No net loss of special-status plant species and/or habitat.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1	MM VEG-CEQA-3 Conduct Focused Surveys for Harwood's Eriastrum. MM VEG-CEQA-3 will incorporate the following BMPs and CMAs: BMP BIO-24; BMP BIO-31; BMP BIO-49; BMP BIO-53; BMP BIO-54; LUPA-BIO-DUNE-2; CMA LUPA-BIO-PLANT-2; and CMA LUPA-BIO-PLANT-3. Harwood's eriastrum is an annual herb that is native to California. It is ranked as: CRPR 1B.2 (e.g., fairly endangered in California), a California State Rank of S2 (e.g., imperiled), and is ranked 'sensitive' by the BLM (CNPS 2019). The Applicant shall designate a qualified botanist (approved by the CPUC, BLM, and CDFW) to conduct pre-construction floristic surveys prior to the commencement of any activities that may modify vegetation (e.g., clearing, mowing, or ground-breaking activities). Pre-construction floristic surveys shall be conducted in a manner which maximizes the likelihood of locating Harwood's eriastrum that may be present. As such, floristic surveys should be conducted in the Project area during the appropriate bloom-period (i.e., March to June) and may be conducted in conjunction with the floristic surveys required in MM VEG-CEQA-2. Pre-construction floristic surveys should be 'floristic in nature', meaning that every plant taxon that occurs on site is identified to the taxonomic level necessary to determine species and listing status. The pre-construction floristic surveys shall also adhere to the following protocols and requisites detailed by most up-to-date State and Federal protocols, policies, and guidance: Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plant (USFWS 1996); Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018a); and Survey Protocols Required for NEPA/ESA Compliance for BLM Special-Status Plant Species (BLM 2009).	The Applicant shall produce a Pre-Construction Harwood's Eriastrum Floristic Survey Report, documenting the results of the floristic survey and submit to the appropriate Federal and State agencies. Floristic survey results for Harwood's eriastrum will also be documented in both the Vegetation Management Plan and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. In addition, measures to reduce impacts, protection species individuals and populations, mitigate, and restore for Harwood's eriastrum will be documented in the aforementioned report and plans, if necessary.	One pre-construction floristic survey shall be conducted during the appropriate bloom-period for Harwood's eriastrum (i.e., March to June).	Supervision, guidance, and verification of this measure shall be achieved the Applicant. Surveys and monitoring for Harwood's eriastrum shall be conducted by the designated qualified botanist (approved by the CPUC, BLM, and CDFW).

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	If individuals and/or populations of Harwood's eriastrum are determined present within the Project area during pre-construction floristic surveys, Project activities shall be reduced and minimized to avoid impacts to the extent feasible. At a minimum, the following avoidance and minimization BMPs shall be implemented: Avoid Harwood's eriastrum individuals through micrositing facilities to the maximum extent feasible; Within suitable habitat for Harwood's eriastrum, keep equipment to the minimum necessary to accomplish the necessary work; On BLM lands, use existing roads or routes. Avoid establishing feature that shall interfere with Harwood's eriastrum habitat or with the movement of sand; On non-agricultural public lands, the Applicant designated qualified botanist shall be on-site for all construction activities involving surface disturbance or overland travel; Staging and temporary-use sites shall not be located within suitable habitat for Harwood's eriastrum; Specification for the avoidance, minimization, and protection of Harwood's eriastrum shall be detailed in in the Project specific Vegetation Management Plan (MM VEG-CEQA-1) and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4). Mapping the population and placing flagging and/or exclusion fencing to protect Harwood's eriastrum within the Project area during construction shall be implemented. Installation of environmentally sensitive area fencing and appropriate signage, starting from the edge of the individual and/or population, shall be implemented. Signage should indicate the area is environmentally			

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	sensitive and not to be disturbed. At a minimum, a buffer zone shall be developed for the Harwood's eriastrum of sufficient size to prevent direct or indirect disturbance to the species from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist. The buffer for the Harwood's eriastrum shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then the Applicant shall develop and implement site-specific monitoring and put other measures in place to avoid species impacts. If Harwood's eriastrum are determined present in the Project area during pre-construction floristic surveys and direct and/or unavoidable impacts will result from Project activities, then occupied lands will be replaced at a minimum 3:1 ratio and consultation with appropriate Federal and State agencies will be required to develop acceptable mitigation (e.g., agency recommended mitigation may include translocation of individual plants, rectification of impact by seed collecting and stockpiling for replanting/replacement, mitigation fees, and/or permitting). Once mitigation has been determined by the appropriate State and Federal agencies, then specifications for Harwood's eriastrum, including reporting specifications and additional surveying and monitoring, shall be incorporated into the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM VEG-CEQA-4), and the Vegetation Management Plan criteria (MM VEG-CEQA-1). In addition, as part of the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, if new occurrences of Harwood's eriastrum are identified within the Project area during construction, then a designated qualified botanist will collect specific ancillary data using the *General Instruction for Filling Out CNDDB Field Forms* (CDFW 2018b). The Applicant is responsible for ensuring submittal of all special-status plant species			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	observations to CDFW CNDDB. **Standards for Success:** No net loss of Harwood's eriastrum. If Harwood's eriastrum is determined present in the Project area during pre-construction floristic surveys, and impacts are unavoidable, then consultation with appropriate the Federal and State agencies will be completed.			
Impact BIO-1 Impact BIO-2	MM-VEG-CEQA-4: Compensation for Impacts to Special-Status Plant Species and Sensitive Communities. The following APMs, BMPs, and CMAs shall be incorporated within this MM VEG-CEQA-4: APM BIO-2; BMP BIO-2; APM BIO-4; APM BIO-11; BMP BIO-11; APM BIO-13; APM BIO-14; APM BIO-15; BMP BIO-15; APM BIO-16; BMP BIO-24; BMP BIO-25; BMP BIO-31; BMP BIO-37; BMP BIO-41; BMP BIO-43; BMP BIO-52; BMP BIO-53; BMP BIO-55; BMP VEG-01; BMP VEG-02; CMA DFA-BIO-IFS-1; CMA DFA-BIO-IFS-2; CMA DFA-VPL-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-7; CMA LUPA-BIO-9; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-5; CMA LUPA-BIO-PLANT-2A; CMA LUPA-BIO-8; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-PLANT-1; CMA LUPA-BIO-PLANT-2; CMA LUPA-BIO-PLANT-3; CMA LUPA-BIO-RIPWET-1; CMA LUPA RIPWET-3; CMA LUPA-BIO-SVF-1; CMA LUPA-BIO-SVF-6; CMA LUPA-SW-13; and CMA LUPA-SW-16. If special-status plant species are identified during pre-construction floristic surveys (MM VEG-CEQA-2 and MM VEG-CEQA-3), and there is the potential for impacts, then the Applicant shall implement the measures listed below. Mitigation shall be accordance with Federal and State agencies requisites, as well as with the *Policy on Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants* (CNPS 1998), and developed and approved by the appropriate Federal and State regulatory agencies. Mitigation for impacts to	The Applicant shall develop and implement a Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan.	Prior to construction, if special-status plant species or sensitive vegetation communities will be impacted by the Project, then the Applicant shall develop and implement mitigation, with the approval by the appropriate Federal and State regulatory agencies.	Supervision, guidance, and verification of compensation for impacts to special-status plants and sensitive vegetation communities, as outlined in this measure, shall be achieved by the Applicant.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	special-status plant species shall consider and overlap with compensation for special-status wildlife, sensitive vegetation communities, and jurisdictional waters and wetlands. **Documentation:** The Applicant shall develop and implement a Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. The Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan shall summarize the results of the pre-construction floristic surveys and describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seed or below-ground rootstock (e.g., poor rainfall, recent grazing, or wildfire). The plan will include management considerations for Harwood's eriastrum and serve as the Harwood's Eriastrum Linear ROW Protection Plan, as described by BMP BIO-31 and referenced by MM BIO-CEQA-1. The Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan shall at a minimum include: Species and locations (i.e., figures) of plants identified for salvage; Criteria for determining whether an individual plant is appropriate for salvage; The appropriate season for salvage; Equipment and methods for collection, transport, and re-planting plants or seed banks, to retain intact soil conditions and maximize success; Planting methodology for off-site introduction mitigation methods; For shrubs, cacti, and yucca, a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation;			

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	Details regarding storage of plants or seed banks for each species; Location of the proposed recipient site, and detailed site preparation and plant introduction techniques for topsoil storage, as applicable; A description of the irrigation, weed control, and other maintenance activities; Success criteria, including specific timeframe for survivorship and reproduction of each species; A schedule for all mitigation activities; and A detailed monitoring program, commensurate with the goals detailed in the Vegetation Management Plan (MM VEG-CEQA-1). **Onsite Avoidance and Minimization**: Minimizing impacts by limiting the degree or magnitude of the action, and avoidance of special-status plant species is the preferred strategy, wherever feasible. Specifically, Project work areas shall be located to avoid or minimize impacts to special-status plants. Effective avoidance through Project design shall include a buffer area surrounding each avoided occurrence, where no Project activities will take place. The buffer area will be clearly staked, flagged, and signed for environmentally sensitive area avoidance prior to the beginning of ground-disturbing activities, and maintained throughout the active construction phase(s). The buffer zone shall be of sufficient size to prevent direct or indirect disturbance to the plants from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist. At a minimum, the buffer for trees or shrubs species shall be equal to twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. The			

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	buffer for herbaceous species shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then the Applicant shall develop and implement site-specific monitoring and put other measures in place to avoid species impacts. • **Onsite Compensation:** Compensation for unavoidable temporary impacts to special-status plant species shall include on-site habitat restoration with similar species compositions to those present prior to construction at a ratio of 1.5:1. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Restoration measures shall be documented in the Vegetation Management Plan (MM-VEG-CEQA-1), as well as the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. **Off-Site Compensation.** It was assumed that Project-related impacts would result in the loss of more than 10 percent of the on-site population of any special-status plant species with a CRPR of 1 or 2. Compensation for permanent impacts to special-status plant species based on the results of the floristic surveys shall include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program at a minimum 3:1 replacement ratio. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. The Applicant shall restore all temporary impacts to sensitive vegetation communities (e.g., blue Palo Verde-ironwood woodland, mesquite thickets,			

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	bush seepweed scrub, etc.) and special-status species habitat at a minimum ratio of 1.5:1, as detailed in the Vegetation Management Plan (MM-VEG-CEQA-1) and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA4). Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. To compensate for permanent impacts to sensitive vegetation communities and special-status species habitat, the Applicant shall provide the creation and/or restoration of habitat at the following ratios: Permanent impacts to sensitive vegetation communities, (e.g., riparian desert woodland habitats, blue Palo Verde-ironwood woodland, mesquite thickets, etc.) shall be mitigated at a ratio of 5:1; Permanent impacts to other sensitive vegetation communities shall also be mitigated at a ratio of 5:1; and Permanent impacts to jurisdictional waters/wetlands shall be mitigated at a minimum ratio of 2:1, or as otherwise specified by the appropriate Federal and State regulatory agencies. Off-site compensation lands and/or established mitigation bank program will be identified, if available, in coordination with the appropriate Federal and State regulatory agencies. Off-site compensation lands will consist of habitat occupied by the impacted special-status plants at the appropriate ratio of acreage and the number of plants for any occupied habitat affected by the Project. Occupied habitat will be calculated on the Project site and on the compensation lands as including each special-status plant occurrence. Off-site compensation shall be documented in the Project-			

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	specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan and approved in consultation with the appropriated Federal and State regulatory agencies. The Applicant shall provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a "qualified easement holder"; the CDFW is a qualified easement holder. To qualify as a "qualified easement holder" a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements for impacts to special-status species, have adopted the Land Trust Alliance's Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. The Applicant shall also provide the "qualified easement holder" with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity. For special-status plant restoration or enhancement activities, several techniques can be applied including: **Salvage.** The Applicant shall consult with the designated qualified biologist/botanist, as well as the appropriate Federal and State regulatory agencies, regarding the feasibility and likely success of salvage efforts for each special-status plant species. If salvage is deemed to be feasible, then Applicant shall incorporate salvage measures into the Project-specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, which shall be approved by the appropriate Federal and State regulatory agencies prior to implementation. **Propagation and Off-Site Introduction.** If salvage and relocation is not believed to be feasible for special-status plants, then Applicant shall consult			

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	with appropriate Federal and State agencies, as well as other qualified entities if needed, to develop an appropriate experimental propagation and relocation strategy, based on the life history of the species affected. The strategy will include at minimum: (a) a planting methodology including strategies for species specific collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d); time of year that the salvage and other planting or transplantation practices will occur; (e) irrigation; (f) erosion controls; (g) success criteria; and (h) a detailed monitoring program. All propagation and off-site introductions strategies shall be documented in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan for the Project. **Restoration:** Restoration can be used to mitigate impacts and depending upon the degree of impact, habitat restoration may be as simple as removing debris and controlling public access. In more complex situations, however, partial or total restoration of degraded habitat may require extensive revegetation, and soil protection and stabilization programs. The strategy will include at a minimum: (a) BLM approved genetically and ecologically appropriate native plant materials suitable for the site; (b) a description of any required topsoil salvage, plant salvage, seeding techniques, and methods to stabilize and shape soil surface to reduce soil erosivity; (c) monitoring and reporting protocols; and (d) success criteria. Restoration must be tailored to the specific project site based on the habitat and species involved (CNPS 1998). **Monitoring and Maintenance:** All mitigation for special-status plant species shall be monitored to assess progress and to make recommendations for successful establishment. Monitoring shall be			

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	performed by qualified biologist/botanist that the Applicant has designated. At a minimum, Monitoring shall include qualitative and quantitative methods as described in MM VEG-CEQA-1 for the Vegetation Management Plan and MM VEG-CEQA-4 Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. Monitoring shall identify the need for remediation or maintenance work well in advance of final success/failure determination. Monitoring and maintenance progress toward achieving success criteria, conditions, and all observations pertinent to eventual success shall be documented in the Post-Construction Vegetation Management Quarterly Monitoring Progress Reports, and the Annual Post-Construction Vegetation Management Report, as described in the Vegetation Management Plan measure (MM-VEG-CEQA-1). In addition to the Vegetation Management Plan annual and quarterly reporting specifications, reporting for mitigation monitoring and maintenances shall also include Progress reports shall include: (a) estimated species survival; (b) species health and overall vigor; (c) the establishment of volunteer native species; (d) topographical/soils conditions; (e) problem weed species; (f) the use of the site by wildlife; (g) significant drought stress; and (h) recommended remedial measures deemed necessary to ensure compliance with specified success criteria. If Federally and/or State listed plant species are identified within Project disturbance areas, then consultation with the appropriate resource agencies will be required to develop acceptable mitigation prior to construction, which may include additional measures. Conservation measures to protect or restore listed special-status plant species, or their habitat, may be required by the appropriate Federal and State regulatory agencies before impacts are authorized. **Standards for Success:** No net loss of special-status plant species, and/or habitat, or sensitive vegetation communities. If special-status plant species or sensitive vegetation communities are determined present in the Project area			

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	during pre-construction floristic surveys and impacts are unavoidable, then establishment of a new viable occurrence, equal or greater in extent and numbers, to the affected occurrence shall be met. Additionally, consultation with the appropriate Federal and State agencies will be completed.			
Impact BIO-1 Impact BIO-2	MM WIL-CEQA-1: Develop and Implement an APP and BBCS. The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL CEQA-1: BMP BIO-19, APM BIO-20, APM BIO-21, BMP BIO-21, BMP BIO-29, BMP BIO-30, BMP BIO-33, BMP BIO-40, BMP BIO-45, BMP BIO-48, CMA LUPA-BIO-14, CMA LUPA-BIO-16, CMA LUPA-BIO-17, CMA LUPA-BIO-COMP-2, CMA LUPA-BIO-IFS-11, CMA-LUPA-BIO-IFS-12, CMA LUPA-BIO-BAT-1, CMA LUPA-BIO-COM-2, CMA LUPA-BIO-DUNE-5, CMA LUPA-BIO-IFS-13, CMA LUPA-BIO-IFS-14, CMA LUPA-BIO-IFS-24, CMA LUPA-BIO-IFS-25, CMA LUPA-BIO-IFS-26, CMA LUPA-BIO-IFS-27, CMA LUPA-TRANS-BIO-1, CMA LUPA-TRANS-BIO-2, and CMA LUPA-TRANS-BIO-3. The Project Applicant shall prepare an APP and BBCS, which will also include a component for a NBNMP, as identified in the BBCS in BMP BIO-29, in coordination with and approval by the applicable permitting/resource agencies (i.e., BLM, CDFW, USFWS, CPUC) prior to the start of construction. Additionally, the components of the Burrowing Owl Avoidance, Minimization, and Mitigation Plan (MM WIL-CEQA-3) and the Bat Management and Protection Plan (MM WIL-CEQA-4) will also be included under the overarching APP/BBCS Plan. The specifics of the APP and BBCS will include the following: • APP: The APP will follow the APLIC/USFWS 2005 APP Guidelines which specifies program design for transmission projects in order to reduce operational avian risks that result from interactions with transmission lines. This goal of this guidance is to reduce avian mortality from electrocution	The Applicant shall retain a qualified avian biologist (approved by the CPUC) to perform monitoring surveys within 500-feet of the Project area. The qualified avian biologist shall report any inadvertent contact or effects to birds or nests within the Project area to the BLM, CDFW, USFWS, and CPUC. The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the NBBMP. This report shall be made available to the BLM, CDFW, USFWS, and the CPUC. The monitoring requirements for the APP shall conform to the	The APP/BBCS shall be prepared/approved prior to the start of construction activities and shall be implemented throughout the duration of construction. The APP specifically shall be implemented throughout the life of the Project while the BBCS shall focus on the construction and maintenance of the Project.	The APP/BBCS shall be developed and implemented by the Applicant and approved by the BLM, CDFW, USFWS, CPUC.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	and collision with the transmission lines. The APP Guidelines state that although each APP developed for a specific project may be different, the overall goal of reducing avian mortality is the same across all developed APPs. The APP developed for the Project shall include, at a minimum, the following consideration and evaluation of principals identified in the APP Guidance: 1. **Corporate policy:** Confirming the company's commitment to work cooperatively towards the protection of migratory birds; 2. **Training:** All appropriate utility personnel, including managers, supervisors, line crews, engineers, etc. shall be properly trained in avian issues (which shall be enforced through MM BIO-CEQA-2, Implement a Worker Environmental Awareness Program); 3. **Permit Compliance:** Identify the process in which the Applicant will obtain and comply with all necessary permits related to avian issues; 4. **Construction Design Standards**: Avian interactions shall be considered in the design and installation of the transmission line as well as during operations and maintenance of the facility. Construction configurations from the *Suggested Practices for Raptor on Power Lines; The State of the Art in 1996* and *Mitigating Bird Collisions with power Lines: The State of the Art in 1994*, or the most current editions of these documents shall be consulted during the design phase of the Project to ensure new construction is avian-safe; 5. **Nest Management:** Procedures for net management on the transmission lines shall be explained to employees during training	APLIC Guidance including identifying and responding promptly to any avian mortality and including adaptive management for avian issues related to the Project.		

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	to ensure uniform treatment of avian nest issues among personnel; 6. **Avian Reporting System:** Development of a reporting system which shall include reporting of any avian mortalities, as required by any federal or State permits. The reporting system can also help pinpoint areas of concerns by tracking both the specific locations where mortalities may be occurring, as well as the extent of such mortalities; 7. **Risk Assessment Methodology:** A focus on the areas with the highest risk to migratory birds shall be the focus of the APP and therefore, a method for evaluating the risks posed to migratory birds in a manner that identified areas and issues of particular concern shall be developed; 8. **Mortality Reduction Measures:** After completing the risk assessment, the efforts for avian protection shall be focused on areas of concern. A mortality reduction plan may need to be implemented depending on the results of the risk assessment. This approach could be implemented through direction of where monitoring should occur, where retrofits should be focused, and where new construction warrants special attention to raptor and other bird issues. 9. **Avian Enhancement Options:** In addition to taking steps to reduce mortality risk to avian species, the developed APP also may include opportunities to enhance avian populations or habitat, including developing nest platforms, managing habitats to benefit migratory birds, or working cooperatively with agencies or organizations in such efforts;			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	10. **Quality Control:** The developed APP may also include a mechanism to review existing practices, ensuring quality control; 11. **Public Awareness:** The developed APP shall include a method to educate the public about the avian electrocution issues, the developed APP, as well as its success in avian protection. 12. **Key Resources:** The developed APP shall identify key resources to address avian protection issues including, for example, a list of experts who may be called upon to aid in resolving avian issues. • BBCS: The purpose of the BBCS is to outline measures/methods to minimize potential Project effects to nesting birds and avoid unauthorized take as defined by both the MBTA and the CDFC, the latter which covers incidental take. The NBBMP (developed as a part of the BBCS) shall be approved by the above noted agencies prior to the site disturbance or pre-construction activities and be implemented by the Applicant throughout construction activities. Additionally, the current APLIC guidelines shall be incorporated into the NBBMP, which includes protections for nocturnal migrants (i.e., lighting controls) and species along the Colorado River and near agricultural fields (APLIC 2006, 2012) (See BMP BIO-33). Specifically, these guidelines will be used to minimize the potential for attracting birds and bats to the proposed infrastructure (transmission lines and facilities). Any nighttime lighting associated with construction will be temporary and shielded in order to provide safe working conditions while limiting light spillover outside of the construction area. Implementation of APM AES-15 will also ensure that lighting, will be directed in a downward position. Pre-construction surveys shall be completed in accordance with MM WIL-CEQA-6 below and if breeding birds with active nests are found prior to or during construction, a qualified avian biologist shall establish a			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	minimum 300-foot buffer (500 foot for raptors) around the nest and no activities shall be allowed within the buffer(s) until the young have fledged from the nest or the nest fails (CPUC 2016). The prescribed buffers may be adjusted by a qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. Buffer reductions for listed or special-status species may require coordination with the USFWS and/or CDFW. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. An avian biologist shall be responsible for documenting the results of the surveys (MM WIL-CEQA-6 below), nest buffers implemented, and the results of ongoing monitoring and shall provide a copy of the monitoring reports for impact areas to the appropriate resource agencies (i.e., USFWS and CDFW) (CPUC 2016). If trees with nests are to be removed as part of Project construction activities, they shall be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided all trees shall be inspected for active nests by the avian biologist. If nests are found within these trees, and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors shall occur until the young have fledged the nest (CPUC 2016). At a minimum, the NBBMP (as a part of the BBCS) shall include the following: Definitions of standard nest buffers for each species or group of species, depending on characteristics and conservation status for each species. A notification procedure for buffer distance reductions should they become necessary under special circumstances.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	A monitoring protocol including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Project-related effects to nesting birds shall be minimized. A protocol for documenting and reporting any inadvertent contact or effects to birds or nests. A summary of applicable State and Federal laws and regulations, including definition of what constitutes a nest or active nest under State and Federal law. A list of bird species potentially nesting on or near the Project area, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. A discussion of how construction of the Project has been scheduled, to avoid or minimize Project impacts to nesting birds. Activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible. Discussion on nest buffer modification or reduction guidelines, including reporting procedures to the appropriate agencies (i.e., CDFW, USFWS, and CPUC). Discussion on use of nest deterrents and communication protocols for on-site monitors. Monitoring and reporting requirements. Detailed noise monitoring guidelines for active breeding territories and/or nests for special-status species that may occur within 500-feet of the Project area. Procedures for the calculation of a fee, to be reassessed every five years, to			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	fund compensatory mitigation for bird and bat mortality impacts; this shall be based on requirements described in CMA LUPA-BIO-COMP-2. **Standards for Success:** Adverse effects to birds shall be avoided or minimized to less than significant levels as determined by the qualified avian biologist in consultation with the BLM, CDFW, USFWS, and CPUC.			
Impact BIO-1	MM WIL-CEQA-2: Develop and Implement a Raven Management Plan. The following BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-2: BMP BIO-28, CMA LUPA-BIO-6, and CMA-LUPA-TRANS-BIO-1. A Raven Management Plan shall be submitted to the BLM, CDFW, and County for approval prior to the start of ground disturbance and issuance of a County grading permit. The Raven Management Plan shall address Project characteristics and activities that may attract or subsidize common ravens. The Raven Management Plan shall include measures designed to: 1) minimize attracting and subsidizing ravens, 2) provide education to Project personnel (MM-BIO-CEQA-2) 3) remove raven nests and offending ravens, and 4) implement adaptive management. The Applicant shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below. The Raven Management Plan shall: Identify conditions associated with the Project that might provide raven subsidies or attractants; Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities; Describe control practices for ravens; Establish thresholds that would trigger implementation of control practices;	The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the implementation of the Raven Management Plan or the USFWS Regional Raven Management Plan. This report shall be made available to the BLM and the County.	The Raven Management Plan shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.	The Raven Management Plan shall be developed and implemented by the Applicant and approved by the CPUC, BLM, and CDFW.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	and Address monitoring and nest removal during construction and for the life of the Project. The Applicant shall submit payment into an account established for the Project held by the NFWF to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or more current guidance as provided by USFWS. The contribution to the regional raven management plan will be $105 per acre impacted. **Standards for Success:** The Raven Management Plan is implemented, and ravens are, to the extent possible, deterred from nesting/foraging within the Project area.			
Impact BIO-1	MM WIL-CEQA-3: Develop and Implement Burrowing Owl Avoidance, Minimization, and Mitigation Plan. The following BMPs and CMAs shall be incorporated within this MM WIL-CEQA-3 and MM WIL-CEQA-7: BMP BIO-30, CMA-LUPA-BIO-IFS-12, CMA LUPA-BIO-IFS-13, and CMA LUPA-BIO-IFS-14. The BOAMMP would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14 and will be developed in concurrence with the NBBMP (MM WIL-CEQA-1). The Applicant shall submit a BOAMMP to BLM and CPUC for approval prior to any ground disturbing activities in California. The BLM and CPUC will include CDFW in the review process and incorporate their comments as appropriate. The BOAMMP will include direction for burrowing owls which shall include a combination of active and passive relocation efforts consistent with LUPA BIO-IFS-12, LUPA BIO-IFS-13, and LUPA-BIO-IFS-14. Any relocation shall include follow up monitoring procedures.	The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the BOAMMP. This report shall be made available to the BLM, CPUC, and CDFW.	The BOAMMP shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.	The BOAMMP shall be developed and implemented by the Applicant and approved by the BLM, CPUC, and CDFW.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	If burrowing owls, or burrowing owl habitat is found within the Project area during pre-construction surveys as described in MM WIL-CEQA-7, the following measures shall be implemented and enforced by the BLM and CPUC throughout construction of the Project. If pre-construction focused burrowing owl surveys determine that burrowing owls occupy the Project area, a tiered approach referred to as an Avoidance and Relocation Strategy shall be implemented to avoid burrowing owls, relocate burrowing owls, and prevent recolonization of areas (where needed, such as construction and/or substation areas) by burrowing owls, as outlined below. These methods generally adhere to the recommendations contained in the *Staff Report on Burrowing Owl Mitigation* currently used by CDFW to guide burrowing owl mitigation measures. The four avoidance and relocation strategy tiers are: • Tier 1 – Avoidance Buffers • Tier 2 – Passive Relocation • Tier 3 – Prevention of Recolonization • Tier 4 – Active Relocation (Optional) Methods to avoid impacts to burrowing owls shall take precedence over passive or active relocation. If pre-construction focused burrowing owl surveys determine that burrowing owls occupy the Project area, including within the 150-meter buffer, the qualified Project biologist will evaluate each occupied burrow to determine whether the Project is likely to directly impact or substantially indirectly impact the burrow such that injury or death of a burrowing owl could occur. Avoidance buffers can be implemented to avoid direct and substantial indirect impacts to owl burrows and individuals. A substantial indirect impact would be a situation where even though the burrow			

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	is not directly impacted during construction, the construction activities could potentially cause injury or mortality of owls, including from collisions with nearby construction equipment, vehicles, fences, or walls. The Project biologist will have discretion in determining whether an indirect impact is substantial. If occupied burrowing owl burrows are found within the Project disturbance footprint or survey buffer during pre-construction surveys, or if burrowing owls arrive on site after construction activities commence, a qualified biologist shall assess the risk of construction activities to the burrowing owl. This risk assessment shall consider several factors, including, but not limited to, the following: • Location of the burrow (e.g., inside the disturbance footprint, within 5 meters (16.4 feet) of the disturbance footprint, more than 40 meters (131.2 feet) from the disturbance footprint); • Type of burrow use (i.e., occupied nest burrow or non-nesting roost burrow that may include wintering or satellite burrows, referred to herein simply as "roost burrow"); • Type of construction activity and level of potential disturbance (e.g., high disturbance, such as mass grading and excavation versus low disturbance, such as painting and landscaping); and • Timing of burrow use (e.g., occupation of a burrow after construction has been started versus prior to construction). Avoidance buffers shall be strictly required for occupied nest burrows so that nesting activities are not disturbed and nesting pairs have the opportunity to rear and successfully fledge young. Per the guidelines outlined by the *Staff Report on Burrowing Owl Mitigation*, a standard minimum avoidance buffer ranging			

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	between 200 meters (656 feet) and 500 meters (1,640 feet) depending on the level of disturbance will be initially applied to occupied nest sites between April 1 and October 15, and 50 meters (164 feet) to 500 meters (1,640 feet) between October 16 and March 31. Burrows will be monitored by a qualified biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW. Establishing avoidance buffers from occupied roost burrows during October 16 through March 31 or from burrows that have been determined to not support nesting (through the non-invasive methods cited above) during the breeding season will initially be based on the buffers described in the *Staff Report on Burrowing Owl Mitigation*. Burrows will be monitored by a qualified biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW. Roost burrows detected during pre-construction surveys fall into three categories: (1) burrows within the proposed project disturbance footprint, (2) burrows in close proximity to the disturbance footprint, and (3) burrows farther from the disturbance footprint, but still potentially within the impact area for burrowing owl. The Applicant shall report any special-status species and natural communities detected during Project surveys to the CNDDB. Standards for Success: Any significant impacts to nesting or burrowing owls shall be avoided or minimized to less than significant levels.			
Impact BIO-1	MM WIL-CEQA-4: Develop and Implement a Bat Management and Protection Plan. The following BMPs and CMAs shall be incorporated within this MM WIL CEQA-4: BMP BIO-29, BMP BIO-33, BMP BIO-40, CMA LUPA-BIO-14,	The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding	The Bat Management and Protection Plan shall be prepared prior to the start	The Bat Management and Protection Plan shall be developed and implemented

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	CMA LUPA-BIO-16, CMA LUPA-BIO-17, CMA LUPA-BIO-BAT-1, CMA LUPA-BIO-COMP-2, CMA LUPA-BIO-DUNE-5, and CMA LUPA-TRANS-BIO-1. The Bat Management and Protection Plan will be developed as part of the BBCS (MM WIL-CEQA-1). The Bat Management and Protection Plan shall be submitted to the BLM, CPUC, and CDFW for approval prior to any ground disturbing activities. The Bat Management and Protection Plan will include direction for roosting bats and shall include, at a minimum, the following: If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the bats shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist. Roosts that need to be removed shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal). If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (i.e., not removed) by the Project. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of the CDFW, BLM, and CPUC that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required, and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roosts sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is	the Bat Management and Protection Plan. This report shall be made available to the BLM, CPUC, and CDFW.	of construction activities and shall be implemented throughout the duration of construction.	by the Applicant and approved by the BLM, CPUC, and CDFW.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above. If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat's requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone. If special-status bat species occur at these roosting/nursery sites, then construction activities shall avoid these sites and a surrounding buffer distance of 500 feet. If construction activities cannot avoid these sites, construction at these sites shall be delayed until the breeding cycles for the special-status bats are completed. The Applicant shall consult with a bat specialist in order to determine when the breeding cycle for the special-status bats is completed. The Applicant shall consult with CDFW regarding eviction of non-breeding special-status bats. If roosting bats occur within bridges on existing dirt or paved roadways within 500 feet of construction activities, construction may be allowed, provided that the construction activities occur only from 9:00 a.m. to 4:00			

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	p.m. to avoid disturbance to nocturnal feedings. Standards for Success: Any significant impacts from construction activities to bat species shall be avoided or minimized to result in less than significant levels.			
Impact BIO-1	**MM WIL-CEQA-5: Conduct Pre-Construction Surveys for Maternity Colonies or Hibernaculum for Roosting Bats.** The following BMPs and CMA shall be incorporated within this MM WIL-CEQA-5: APM BIO-2, BMP BIO-02, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-16, and CMA LUPA-BIO-DUNE-5. The Applicant shall conduct surveys for roosting bats within 500 feet of Project activities, within 14 days prior to any grading of rocky outcrops or removal of trees with loose bark or other cavities. Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). The resume of the biologist shall be provided to the CPUC and BLM for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the Project. Surveys shall include a minimum of one day and one evening. The Bat Management and Protection Plan (MM WIL-CEQA-4) shall be implemented throughout construction for any active bat roosts within the area. The Applicant shall submit documentation providing pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC, BLM, and CDFW for review and approval. Standards for Success: Surveys for bat roosting and nursery sites are completed within the Project area and required buffer distances.	The Applicant shall submit documentation in the form of a report or technical memorandum that provides the pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC, BLM, and CDFW for review and approval.	The surveys shall be completed within 14 days prior to any grading activities or removal of trees within 500 feet of the Project.	The surveys for maternity colonies or hibernaculum for roosting bats shall be completed by a qualified biologist (i.e. a biologist holding CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats).

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact BIO-1 Impact BIO-2	MM WIL-CEQA-6: Conduct Pre-construction Surveys for Nesting and Breeding. The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-6: APM BIO-2, BMP BIO-02, APM BIO-20, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-16, CMA LUPA-BIO-IFS-26, and CMA LUPA-BIO-RIPWET-3. The Applicant shall retain a qualified avian biologist(s) (approved by the CPUC, BLM, and CDFW) to conduct pre-construction nesting bird surveys, within the recognized breeding season (generally 15 Feb – 15 Sep [1 Jan – 15 Aug for raptors]), for all areas within 500 feet of construction activities; construction activities include mobilization, staging, grading, and/or construction. These survey dates may only be modified with the approval of CDFW and USFWS (where applicable). Measures intended to exclude nesting birds shall only be implemented with the prior approval by the CDFW and/or USFWS. If breeding birds with active nests are found prior to or during construction, the qualified avian biologist shall establish a minimum 300-foot buffer (500 foot for raptors) around the nest and no activities shall be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. Buffer reductions for listed or special-status species may require coordination with the USFWS and/or CDFW. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, implementing nest buffers, and documenting the results of ongoing monitoring by providing a copy of the monitoring reports for impact areas to the appropriate resource agencies (i.e., USFWS and CDFW). If trees with nests are to be removed as part of Project	The Applicant shall submit documentation in the form of a report or technical memorandum that provides the pre-construction survey results and any avoidance of nesting recommended to the CPUC, BLM, and CDFW for review and approval.	The surveys shall be completed within the recognized breeding season prior to construction activities for all areas within 500 feet of construction.	The surveys for nesting and breeding avian species shall be completed by a qualified avian biologist (approved by the CPUC, BLM, and CDFW).

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	construction activities, they shall be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided, all trees shall be inspected for active nests by the avian biologist. If nests are found within these trees, and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors shall occur until the young have fledged the nest. Standards for Success: Nesting and breeding bird surveys are conducted within the Project site and required buffer distances prior to ground disturbing activities.			
Impact BIO-1 Impact BIO-2	MM WIL-CEQA-7: Conduct Focused Pre-Construction Burrowing Owl Surveys. To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM BIO-CEQA-7: APM BIO-2, BMP BIO-02, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-12, and CMA LUPA-BIO-16. Prior to initial ground disturbance (no more than 14 days prior) the Project Applicant shall conduct focused surveys for burrowing owls within suitable burrowing owl habitat. Surveys will be completed by a qualified biologist(s) with proven burrowing owl experience. Focused burrowing owl surveys shall be conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 Staff Report; CDFG 2012), with the exception of the survey buffers, which follows the California Burrowing Owl Consortium (1993). Surveys shall be conducted by walking 20-meter transects. Pre-construction surveys shall be conducted not only within construction area, but also within a reasonable buffer around the area, generally 150 meters (492 feet). If burrowing owls, including any active burrowing owl burrows, are not found during the pre-construction survey, no further action is required. If burrowing owls or active burrows are found, then the appropriate avoidance setbacks depending on the and level of disturbance shall be implemented as	The Applicant shall submit documentation in the form of a report of technical memorandum that provides the pre-construction survey results and any avoidance or relocation recommendations to the CPUC, BLM, and CDFW for review and approval.	The focused pre-construction burrowing owl surveys shall be completed no more than 14 days prior to the start of construction activities.	The focused pre-construction surveys for burrowing owls shall be conducted by a qualified biologist (approved by the CPUC, BLM, and CDFW).

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	defined in the Burrowing Owl Avoidance, Minimization, and Mitigation Plan (MM WIL-CEQA-3). The only exception to the above requirements would be if any given construction area has become inactive for more than 14 days. Because burrowing owls can recolonize a site after a few days, if time lapses between Project activities for 14 days or more, this shall trigger subsequent pre-construction avoidance surveys, including, but not limited to an additional survey within 24 hours of ground-disturbing activities. Standards for Success: Burrowing owl surveys are completed within all suitable habitats in the Project area and required buffer distances.			
Impact BIO-1 Impact BIO-2	MM WIL-CEQA-8: Conduct Pre-Construction Protocol Surveys for Arizona Bell's Vireo, Southwestern Willow Flycatcher, and Willow Flycatcher; Avoid Occupied Habitat; Compensate Impacts. The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-8: APM BIO-20; APM BIO-21; BMP BIO-21; BMP BIO-29; BMP BIO-32; BMP BIO-35; BMP BIO-36; BMP BIO-40; BMP BIO-48; BMP BIO-55; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-12; CMA LUPA-BIO-16; CMA LUPA-BIO-17; CMA LUPA-BIO-COMP-2; CMA LUPA-TRANS-BIO-1; and CMA LUPA-TRANS-BIO-2. If Project related activities are scheduled to occur during the breeding season (generally 15 Feb – 15 Sep) the Applicant shall have a qualified avian biologist, approved by the CPUC, BLM, and CDFW, conduct protocol surveys prior to the start of construction for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher in suitable habitat within the Project area and 500 feet of disturbance areas. The surveys shall follow all current agency protocols (i.e., CDFW, USFWS). Prior to construction, documentation shall be	The Applicant shall submit documentation in the form of a report of technical memorandum that provides the survey results and any avoidance or relocation recommendations to the CPUC, BLM, and CDFW for review and approval. Responsible parties include USFWS and CDFW.	The focused surveys shall be conducted during the required protocol windows should construction activities occur between 15 Feb and 15 Sep.	The focused protocol surveys for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher shall be conducted by a qualified biologist(s).

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	submitted providing the results of the pre-construction focused surveys for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher to the CPUC for review and approval in consultation with USFWS and CDFW. Protocol or focused nest location surveys, as appropriate, shall be conducted within one year prior to the start of construction and shall continue annually until completion of construction and restoration activities. If an active breeding territory or nest is confirmed, the CPUC, USFWS, and CDFW shall be notified immediately. All active nests shall be monitored on a weekly basis until the nestlings fledge or the nest becomes inactive. The Applicant shall provide monitoring reports to the CPUC for review on a weekly basis. In coordination with the USFWS and CDFW, a minimum 300-foot disturbance-free ground buffer shall be established around the active nest and demarcated by fencing or flagging. No construction or vehicle traffic shall occur within nest buffers. The qualified biologist shall have the authority to halt construction activities and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. Impacts and mitigation for Federal- and State-listed species shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the FESA with the USFWS, and either the Section 2081 or Section 2080.1 process under the CESA with the CDFW. Additionally, direct impacts to Federally listed species' critical habitat that cannot be avoided shall also be addressed through either the FESA Section 7 or Section 10(a)(1)(B) process. Formal FESA consultation for Federally listed species that have at least a moderate potential to occur and may be impacted by the Project include the Mojave Desert tortoise, razorback sucker, southwestern willow flycatcher, western yellow-billed			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	cuckoo, and Yuma Ridgway's rail. CESA consultation for State-listed species that have at least a moderate potential to occur and may be impacted by the Project include California black rail, greater sandhill crane, Mojave Desert tortoise, razorback sucker, southwestern willow flycatcher, western yellow-billed cuckoo, Swainson's hawk, and Yuma Ridgway's rail. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands. Standards for Success: Protocol Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher surveys are completed within all suitable habitats in the Project area and required buffer distances.			
Impact BIO-1	MM WIL-CEQA-9: Compensation for Impacts to Mojave Fringe-Toed Lizard. To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM WIL-CEQA-9: APM BIO-3; BMP BIO-03; APM BIO-9; APM BIO-10; APM BIO-17; BMP BIO-25; BMP BIO-35; BMP BIO-36; BMP BIO-49; BMP BIO-53; BMP BIO-54; BMP BIO-55; CMA DFA-BIO-IFS-1; CMA DFA-VP; CMA LUPA-BIO-11L-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-15 CMA LUPA-BIO-3 CMA LUPA-BIO-4; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-2; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-4; and CMA LUPA-BIO-DUNE-5. Specifically, the following shall be implemented by the Applicant to protect and compensate for impacts to Mojave fringe-toed lizard. **Field Surveys:** Prior to construction, field surveys shall be conducted by an Applicant designated qualified biologist, approved by the CPUC, BLM, and CDFW, to assess for Mojave fringe-toed lizard habitat (e.g., dune	The Applicant shall prepare a Fringe-Toed Lizard Linear ROW Protection Plan.	Field surveys shall be conducted prior to construction. All potential indirect and direct impacts shall be evaluated, and avoidance, minimization, compensation, and mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to project	Supervision, guidance, and verification of mitigation as outlined in this measure shall be achieved the Applicant.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	systems, Aeolian sand, scattered vegetation). **Avoidance and Minimization:** If Mojave fringe-toed lizard habitat is present within the Project site and/or adjacent areas, at a minimum, the following avoidance and minimization measures shall be employed to reduce potential species impacts: An Applicant designated qualified biologist shall conduct pre-construction clearance surveys for Mojave fringe-toed lizard in the Project area; Mojave fringe-toed lizard suitable habitat, if present, shall be mapped using the BLM NOC habitat mapping standards; If potential habitat is identified in or adjacent to the Project site, then a biological monitor shall be on-site during all Project activities, as necessary; ESA signage and exclusion fencing shall be installed at the appropriate buffer distance (i.e., resource setback), if suitable habitat is within or encroaches into the Project site; Project-specific, construction-related BMPs shall be implemented to reduce the amount of Aeolian sand transport within work areas; New roads/routes shall avoid Mojave fringe-toed lizard suitable habitat within identified linkages, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern; and Project-specific CMAs shall be implemented to ensure the control of invasive and nuisance animal species that could indirectly impact Mojave fringe-toed lizard species. **Compensation for Permanent Impacts:** Permanent habitat loss and direct impacts to Mojave fringe-toed lizards shall be subject to compensatory mitigation at a minimum ratio of 3:1 and overlap with the mitigation for		commencement.	

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	impacts to special-status plant species, and particularly Harwood's eriastrum, as part of MM VEG-CEQA-4. Compensation for permanent impacts to suitable habitat for the Mojave fringe-toed lizard shall include (a) preservation through acquisition of offsite lands with an attached conservation easement or purchase of credits from an approved bank, or (b) onsite or offsite enhancement of lands that support known populations of Mojave fringe-toed lizard. Off-site compensation lands and/or established mitigation bank program shall be identified, if available, in coordination with the appropriate Federal and State regulatory agencies. The Applicant shall provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a "qualified easement holder"; the CDFW is a qualified easement holder. To qualify as a "qualified easement holder" a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements, have adopted the Land Trust Alliance's Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. The Applicant shall also provide the "qualified easement holder" with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. At a minimum, the compensation lands selected for acquisition shall meet the following criteria: Be deposits of Aeolian or fine windblown sands typically associated with dunes, washes, hillsides, and margins of dry lakes, with potential to			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat; To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard; To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation; Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed; Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible; Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat; Not be subject to property constraints (i.e. mineral leases, cultural resources); and Be on land for which long-term management is feasible (BLM 2018a). **Documentation:** The Applicant shall prepare a Fringe-Toed Lizard Linear ROW Protection Plan, as detailed by BMP BIO-49 and referenced in MM BIO-CEQA-1. This plan shall be in accordance with Federal and State regulatory agencies policies, guidance, and protocols. In addition, this plan shall be approved by the appropriate regulatory agencies prior to Project			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	commencement, and implemented, as necessary, during all Project phases. The Fringe-Toed Linear ROW Protection Plan, shall at a minimum, discuss potential for Mojave fringe-toed lizard to occur in the Project area (e.g., known occurrences, locations for potential suitable habitat, etc.); provide an overview related to the potential for indirect and/or direct permanent impacts; outline methods and measures for avoidance, minimization, translocation, compensation, and mitigation. **Standards for Success:** Compensation implemented for Mojave fringe-toed lizard that results in a no net loss of suitable habitat.			
Impact BIO-1	MM WIL-CEQA-10: Compensation for Impacts to Mojave Desert Tortoise. To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM WIL-CEQA-10: APM BIO-2; BMP BIO-02; APM BIO-3; BMP BIO-03; APM BIO-4; APM BIO-17; APM BIO-23; BMP BIO-23; BMP BIO-35; BMP BIO-36; BMP BIO-44; BMP BIO-55; CMA DFA-BIO-IFS-1; CMA DFA-VPL-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-; CMA LUPA-BIO-IFS-3BIO-7; CMA LUPA-BIO-12; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-IFS-5; CMA LUPA-BIO-IFS-6; CMA LUPA-BIO-IFS-7; CMA LUPA-BIO-IFS-8; and CMA LUPA-BIO-IFS-9. Specifically, the following shall be implemented by the Applicant to protect and compensate for impacts to Mojave Desert tortoise: **Compensation for Impacts:** To fully mitigate for habitat loss and potential take of Mojave Desert tortoise, the Applicant shall provide compensatory mitigation at a minimum ratio of 2:1. For the purposes of this measure, the Project site (i.e., footprint) means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project's boundaries that will no	The Applicant shall prepare a Mojave Desert Tortoise Protection and Compensation Plan. In addition, the Applicant shall also prepare a Mojave Desert Tortoise Quarterly Compliance Report.	Prior to construction, field surveys shall be conducted by the Applicant (refer to MM WIL-CEQA-11 below) designated qualified biologist to assess for Mojave Desert tortoise habitat. Additionally, the Applicant designated qualified biologist shall conduct pre-construction clearance surveys for Mojave Desert	Supervision, guidance, and verification of mitigation as outlined in this measure shall be achieved the Applicant.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	longer provide viable long- term habitat for the Mojave Desert tortoise. To satisfy this measure, the Applicant shall acquire, protect and transfer one acre of Mojave Desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below (BLM 2018). The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. The Applicant has another option for satisfying some or all of the requirements in this measure, in lieu of acquiring lands itself. The Applicant may satisfy the requirements of this measure by depositing funds into an account established with the NFWF. Applicant shall acquire the land, in fee or in easement, within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer. If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following: Be within the appropriate Habitat Unit or, if sufficient land is unavailable, in other locations within approved by the appropriate Federal and State regulatory agencies; Provide habitat for Mojave Desert tortoise with capacity to regenerate naturally when disturbances are removed; Be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to		tortoise in the Project area during the period when they are most active (i.e., March through May, or September through mid-November).	

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	habitat preservation; Be connected to lands with Mojave Desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover; Not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible; Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and Have water and mineral rights included as part of the acquisition, unless consultation with the appropriate Federal and State agencies occurs and there is an agreement in writing to the acceptability of land. **Documentation:** The Applicant shall prepare a Mojave Desert Tortoise Protection and Compensation Plan. This plan shall be in accordance with Federal and State regulatory agencies policies, guidance, and protocols. In addition, this plan shall be approved by the appropriate regulatory agencies prior to Project commencement, and implemented, as necessary, during all Project phases. The Plan, shall at a minimum, discuss the potential for Mojave Desert tortoise to occur in the Project area (e.g., known occurrences, locations for potential suitable habitat, locations of burrows, fencing locations, etc.); provide an overview related to the potential for indirect and/or direct permanent impacts; outline methods and measures for avoidance, minimization, translocation, compensation, mitigation, and requirements for maintenance and monitoring.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	In addition, the Applicant shall also prepare a Mojave Desert Tortoise Quarterly Compliance Report. The first Mojave Desert Tortoise Quarterly Compliance Report shall be complete prior to Project commencement and include a narrative describing species-specific pre-construction compliance measures completed. After the initial Mojave Desert Tortoise Quarterly Compliance Report is submitted prior to construction, subsequent reports shall be prepared and submitted quarterly until the completion of Project activities. If during construction, Mojave Desert tortoise are encountered, and/or relocated, then the following details shall be included in the Mojave Desert Tortoise Quarterly Compliance Report, as necessary. The locations (i.e., maps) and dates of observation; The location moved from and location moved to (i.e., exact coordinates); Ambient temperature when handled and released; Digital photograph(s) of each handled Mojave Desert tortoise; General condition and health, including injuries, state of healing and whether Mojave Desert tortoise voided their bladders; and Gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes). **Standards for Success:** Compensation implemented for desert tortoise that results in a no net loss of suitable habitat.			
Impact BIO-1	MM WIL-CEQA-11 Conduct Pre-construction Surveys for Listed and Special-Status Terrestrial Herpetofauna and Compensation for Impacts. The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-11: APM BIO-2; BMP BIO-02; APM BIO-3; BMP BIO-03; APM BIO-4; APM BIO-9; APM BIO-10; APM BIO-17; APM BIO-23; BMP BIO-23; BMP BIO-25; BMP BIO-35; BMP BIO-36; BMP BIO-44; BMP BIO-49;	The Applicant shall prepare a technical report detailing the results of all terrestrial herpetofauna and desert tortoise surveys.	General surveys shall be conducted year-round with desert tortoise surveys focused on the periods of	Supervision, guidance, and verification of mitigation as outlined in this measure shall be

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	BMP BIO-53; BMP BIO-54; BMP BIO-55; CMA DFA-BIO-IFS-1; CMA DFA-VP; CMA LUPA-BIO-11L-BIO-DUNE-1; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3 CMA LUPA-BIO-4; CMA LUPA-BIO-IFS-7; CMA LUPA-BIO-12; CMA LUPA-BIO-13; CMA LUPA-BIO-14; CMA LUPA-BIO-15; CMA LUPA-BIO-COMP-1; CMA LUPA-BIO-DUNE-1; CMA LUPA-BIO-DUNE-2; CMA LUPA-BIO-DUNE-3; CMA LUPA-BIO-DUNE-4; and CMA LUPA-BIO-DUNE-5; CMA LUPA-BIO-IFS-3; CMA LUPA-BIO-IFS-5; CMA LUPA-BIO-IFS-6; CMA LUPA-BIO-IFS-7; CMA LUPA-BIO-IFS-8; and CMA LUPA-BIO-IFS-9. Conduct Pre-Construction Surveys for Listed and Special Status Terrestrial Herpetofauna and Compensate Impacts Prior to ground disturbance or vegetation clearing within the Project site, the Applicant shall retain an approved/qualified biologist to conduct surveys for special-status terrestrial herpetofauna (i.e., lizards, snakes, tortoise, etc.) where suitable habitat is present and directly impacted by construction vehicle access, or maintenance. Focused surveys shall consist of a minimum of three daytime surveys and one nighttime survey within one week of vegetation clearing. The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports special-status terrestrial herpetofauna. Clearance surveys for special-status terrestrial herpetofauna shall be conducted by the qualified biologist prior to the initiation of construction each day in suitable habitat. Special-status terrestrial herpetofauna found within the area of disturbance or potentially affected by the Project shall be relocated to the nearest suitable habitat that shall not be affected by the Project. Desert Tortoise Specific Surveys **Field Surveys:** Prior to construction, field surveys shall be conducted by the Applicant designated qualified biologist to assess for Mojave Desert tortoise habitat (e.g., desert scrub vegetation communities dominated, cover		expected activity. Prior to construction, field surveys shall be conducted by an Applicant designated qualified biologist to assess for Mojave Desert tortoise habitat. Additionally, the Applicant designated qualified biologist shall conduct pre-construction clearance surveys for Mojave Desert tortoise in the Project area during the period when they are most active (i.e., March through May, or September through mid-November).	achieved the Applicant.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	sites- soil burrows, pallets, caliche caves, etc.). Additionally, the Applicant designated qualified biologist, approved by the CPUC, BLM, and CDFW, shall conduct pre-construction clearance surveys for Mojave Desert tortoise in the Project area during the period when they are most active (i.e., March through May, or September through mid-November). During pre-construction clearance survey, the qualified biologist shall inspect construction pipes, culverts or similar structures with (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within Mojave Desert tortoise habitat, before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection. Pre-construction habitat surveys and clearance surveys for Mojave Desert tortoise shall be conducted using techniques outlined in the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). **Avoidance and Minimization:** If Mojave Desert tortoise habitat is present within the Project site and/or adjacent areas, at a minimum, the following avoidance and minimization measures shall be employed to reduce potential species impacts: Mojave Desert tortoise habitat and burrows, if present, shall be mapped using the BLM NOC habitat mapping standards; If potential habitat is identified in or adjacent to the Project site, then a qualified biological monitor shall be on-site during all Project activities, as necessary. The qualified biological monitor shall directly monitor site clearing and shall be onsite during grading activities to find and move Mojave Desert tortoises missed during the initial pre-construction tortoise			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Mojave Desert Tortoise Protection and Compensation Plan; ESA signage and exclusion fencing shall be installed at the appropriate buffer distance (i.e., resource setback), if suitable habitat is within or encroaches into the Project site (see further details under "fencing" below); During Project activities, including on specific linear features (e.g., fencing, transmission lines, and access roads, etc.) and during O&M, all live Mojave Desert tortoises and active burrows shall be avoided to the extent possible. The Applicant shall ensure that the qualified biologist and biological monitor monitors any Project activities in unfenced areas for presence of Mojave Desert tortoises. If an active burrow cannot be avoided by construction activities, the burrow shall be excavated using protocols in *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). If a tortoise wanders into an unfenced, active Project work area, does not leave the area on its own accord (i.e., within 15 minutes), and cannot be avoided by Project activities, the Applicant shall ensure that that the qualified biologist captures the Mojave Desert tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced Project work areas, and monitor the individual via telemetry, in accordance with the aforementioned Protocol. The qualified biologist and biological monitor shall have a copy of all measures, Federal and State permits, when monitoring Project activities. The qualified biologist and biologist monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave Desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by the qualified biologist. A Mojave Desert Tortoise Quarterly Compliance Report will be submitted			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	quarterly to the appropriate Federal and State regulatory agencies (BLM 2018); and o Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted. **Fencing:** The Applicant shall ensure that temporary and/or permanent tortoise exclusionary fencing is installed around active portions of the Project area following the pre-construction tortoise survey. The exclusionary fencing, whether temporary or permanent in nature, and shall be installed according to specifications in the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). Specifications requires fencing to be buried 12 inches below the ground surface and extend to 22 to 24 inches above the ground surface. If a phased approach is implemented during the construction phase, the exclusionary fencing may be installed in phases, with pre-construction surveys conducted prior-to and clearance surveys conducted immediately after installation of the exclusionary fence. The Applicant shall also ensure that tortoise exclusionary fencing is maintained during the decommissioning phase to keep tortoises from accessing active work areas. Throughout the construction and decommissioning phases, the tortoise exclusionary fence shall be checked regularly to ensure its integrity (BLM 2018). Security Gates- For security fencing, the Applicant shall ensure that the Project's perimeter security fence includes exclusionary fencing that prevents Mojave Desert tortoises, and other burrowing animals, from accessing the Project site. The exclusionary fencing shall be installed at the base of the security in accordance with the protocols listed above, and cattle guards shall be installed at entrances to the Project. Specifically, security gates shall be designed with minimal ground clearance to deter ingress by			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	tortoises. Tortoise guards shall be installed at gate locations. (BLM 2018) Fence Flagging- All fencing installation corridors shall be flagged to assist the qualified biologist in studying the fence route and surveying within 24 hours prior to the initiation of fence construction. Prior to the surveys the Applicant shall provide all appropriate Federal and State regulatory agencies map figures clearly depicting the limits of construction disturbance for the proposed fence installation (BLM 2018). Fence Installation- The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the qualified biologist and monitored to ensure the safety of any tortoise present (BLM 2018). Fence Inspections- Following installation of the Mojave Desert tortoise exclusion fencing, the fencing shall be regularly inspected during construction, operations, and decommissioning. If Mojave Desert tortoise were moved out of harm's way during fence construction, fencing shall be inspected daily for the first 7 days to ensure a recently moved Mojave Desert tortoise has not been trapped within the fence. Thereafter, fencing shall be inspected quarterly and during and within 24 hours following major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep Mojave Desert tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of site fencing shall occur for the life of the Project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted Mojave Desert tortoise entry while damaged, the qualified biologist shall inspect the area for			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Mojave Desert tortoise (BLM 2018). Tortoise Encounters- If a tortoise is encountered along the inside or outside of the fence, the qualified biologist shall capture and relocate in accordance with the protocols listed above (i.e., USFWS 2009, Chapter 7), perform a health assessment, attach a radio transmitter to the tortoise in accordance, and release the Mojave Desert tortoise in a previously identified Project-adjacent relocation areas supporting Mojave Desert tortoise habitat in accordance with USFWS and all other appropriate Federal and State regulatory agencies (BLM 2018). Fence Removal- Temporary exclusionary fencing shall be removed following completion of the construction and decommissioning phases. With the exception of desert tortoise, compensation for temporary impacts to special-status terrestrial herpetofauna (including Couch's spadefoot toad and Mojave fringe-toed lizard) potential/modeled habitat shall include on-site habitat restoration at a minimum 1.5:1 ratio. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. Compensation for permanent impacts to desert tortoise and special-status wildlife on-site surveyed habitat shall include a) off-site creation, enhancement, and/or preservation, and/or b) participation in an established mitigation bank program at a minimum 3:1 ratio. Compensation for temporary and permanent impacts for all other special-status wildlife habitat shall include a combination of a) on-site habitat creation or enhancement with similar species compositions to those present prior to construction, b) off-site creation, enhancement, and/or preservation, and/or c) participation in an established mitigation bank program at a 2:1 minimum ratio. The Applicant shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	and final replacement ratios and acreages. All mitigation shall be approved by the appropriate Federal and State regulatory agencies prior to Project activities. Compensation for impacts to desert tortoise are detailed above in MM WIL-CEQA-10. Impacts and mitigation for the Mojave Desert tortoise shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the FESA with the USFWS, and either the Section 2081 or Section 2080.1 process under the CESA with the CDFW. Mitigation for impacts to all listed and special-status species habitat shall consider and overlap with compensation for special-status plants, sensitive vegetation communities, and jurisdictional waters and wetlands. Standards for Success**:** Compensation implemented for all listed/special-status terrestrial herpetofauna, including desert tortoise, that results in a no net loss of suitable habitat.			
Cultural Resources				
Impact CUL-1 Impact CUL-2 Impact CUL-4	**APM CULT-01: Cultural Resources Inventory.** A cultural inventory would be conducted that would document cultural resources within the area of potential effects for the Project. Based on results of this inventory, an HPTP would be developed to specifically address direct and indirect impacts that may result from Project construction.	Review adequacy of and implementation of HPTP.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2 Impact CUL-4	**APM CULT-02: Monitoring and Discovery Plan.** DCRT's contractor would prepare an MDP that would describe procedures to be followed in the event of the discovery of cultural resources or human remains during implementation of the Project. The Draft MDP would be reviewed by BLM and consulting state and Federal agencies, the California and Arizona SHPOs, and local tribes. Upon approval of the MDP, DCRT would follow the procedures set forth in that plan	Review adequacy of and implementation of MDP.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	during implementation of the Project.			
Impact CUL-1 Impact CUL-2 Impact CUL-4	**BMP CULT-03: Cultural Resources Avoidance and Stipulations.** DCRT would follow the avoidance procedures and other stipulations outlined in the PA and in the appropriate State HPTP for each historic property identified in the HPTP.	Review adequacy of and implementation of State HPTP.	Construction	The Applicant
Impact CUL-1 Impact CUL-2	**BMP CULT-04: Worker Cultural Resources Awareness Program**. Before starting any work, including mowing, staging, sediment and erosion control installation, tree removal, construction, and restoration, all employees and contractors performing activities and construction would receive training on the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act and the consequences of noncompliance with these acts. Training would also include cultural sensitivity to Native American concerns, since tribal monitors would be present during construction.	Review adequacy and implementation of worker cultural resources awareness program.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**BMP CULT-05: Compensatory Mitigation Fee.** DCRT would pay a compensatory mitigation fee for cumulative and indirect effects to historic properties as a result of construction. The fee structure of the compensatory mitigation fee would be calculated in a manner that is commensurate to the size and regional impacts of the project and would include a management fee. This fee structure would be determined by BLM and contained in the project-specific PA.	Verify compensatory mitigation fee paid.	Post-construction	The Applicant
Impact CUL-1 Impact CUL-2	**BMP CULT-06: Sensitivity Model.** BLM would develop a sensitivity model for cultural resources using the DRECP geodatabase for the purpose of selecting Project footprints to minimize impacts to recorded historic properties and areas that are culturally sensitive to Tribes.	Verify use of sensitivity model.	Design Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**BMP CULT-07: Sample Survey.** The BLM shall ensure that a statistically significant cultural resources sample survey is conducted for consideration in	Verify sample survey is adequate.	Design	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Project planning in locations within the CDCA boundary.			
Impact CUL-1 Impact CUL-2 Impact CUL-4	**BMP CULT-08: Project Planning.** DCRT would consider the results of the BLM's cultural resources sensitivity model in Project planning and provide justification if it is not considered to be feasible.	Review and verify results of sensitivity model.	Design	The Applicant
Impact CUL-1 Impact CUL-2 Impact CUL-3	**APM PALEO-01: Paleontological Resources Treatment Plan.** DCRT would prepare a Paleontological Resources Treatment Plan that would describe procedures to be followed in the event of the discovery of paleontological resources during implementation of the Project. Upon approval of the draft plan, DCRT would follow the procedures set forth in that Plan during implementation of the Project.	Review adequacy of and implementation of Paleontological Resources Treatment Plan.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2 Impact CUL-3	**BMP PALEO-02: Paleontological Resources Monitor.** A qualified paleontologist would provide monitoring for paleontological resources during construction in areas of high or unknown fossil potential.	Ensure that a qualified paleontological resources monitor is present.	Construction	
Impact CUL-1 Impact CUL-2 Impact CUL-4	**CMA LUPA-CUL-4. Cultural Resources and Tribal Interests.** Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes.	Confirm impacts to cultural resources and tribal interests are avoided.	Design	The Applicant
Impact CUL-1 Impact CUL-2	**CMA LUPA-TRANS-CUL-1. Cultural Resources and Tribal Interests.** For transmission (and renewable energy) activities, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism: • All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.	Confirm appropriate costs are paid.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	• All appropriate costs associated with preliminary sensitivity analysis. • All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process. • All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.			
Impact CUL-1 Impact CUL-2	**CMA LUPA-TRANS-CUL-2.** Consistent and in compliance with the NHPA Programmatic Agreement, signed February 5, 2016, or the most up to date signed version – for transmission (and renewable energy) activities, a compensatory mitigation fee will be required within the LUPA Decision Area (DA) to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the NHPA Programmatic Agreement for details regarding the mitigation fee.	Confirm compensatory mitigation fee paid if necessary.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA LUPA-TRANS-CUL-3.** For transmission (and renewable energy) activities, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.	Confirm management fee paid if necessary.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA LUPA-TRANS-CUL-4.** For transmission (and renewable energy) activities, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.	Verify results of cultural resources sensitivities is used in Project planning.	Design Pre-construction	The Applicant
Impact CUL-1	**CMA LUPA-TRANS-CUL-5.** For transmission (and renewable energy) activities, provide a statistically significant sample survey as part of the pre-	Confirm sample survey is provided.	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact CUL-2	application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.			
Impact CUL-1 Impact CUL-2 Impact CUL-4	**CMA LUPA-TRANS-CUL-6.** For transmission (and renewable energy) activities, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.	Confirm justification is provided.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-1.** For renewable energy activities and transmission, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism: • All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity. • All appropriate costs associated with preliminary sensitivity analysis. • All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process. • All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.	Confirm appropriate costs are paid for Section 106 compliance.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-2.** Consistent and in compliance with the NHPA PA, signed February 5, 2016, or the most up to date signed version -for renewable energy activities and transmission, a compensatory mitigation fee will be required within the LUPA DA to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the PA for details regarding the mitigation fee.	Confirm compensatory mitigation fee is paid as required.	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-3**. For renewable energy activities and transmission, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.	Confirm appropriate costs are paid as necessary.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-4.** For renewable energy activities and transmission, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.	Confirm cultural resources sensitivity is included in initial planning.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-5.** For renewable energy activities and transmission, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Confirm sample survey is provided.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-6.** For renewable energy activities and transmission, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.	Confirm justification is provided in application	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2	**CMA DFA-VPL-CUL-7.** For renewable energy activities and transmission, complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar PA.	Confirm NHPA Section 106 Process or alternate procedure is completed as necessary.	Pre-construction	The Applicant
Impact CUL-1 Impact CUL-2 Impact CUL-3	MM CUL-CEQA-1 Implement Cultural Resources Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.5.2 and 2.5.3 above provide a	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs,	APMs, BMPs, and CMAs shall be implemented throughout	The Applicant shall ensure that all APMs, BMPs, and CMAs are

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact CUL-4	suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to cultural resources. These APMs, BMPs, and CMAs include; APM CULT-01, APM CULT-02, BMP CULT-03, BMP CULT-04, BMP CULT-05, BMP CULT-06, BMP CULT-07, BMP CULT-08, APM PALEO-01, BMP PALEO-02, CMA LUPA-CUL-4, CMA LUPA-TRANS-CUL-1, CMA LUPA-TRANS-CUL-2, CMA LUPA-TRANS-CUL-3, CMA LUPA-TRANS-CUL-4, CMA LUPA-TRANS-CUL-5, CMA LUPA-TRANS-CUL-6, CMA DFA-VPL-CUL-1, CMA DFA-VPL-CUL-2, CMA DFA-VPL-CUL-3, CMA DFA-VPL-CUL-4, CMA DFA-VPL-CUL-5, CMA DFA-VPL-CUL-6, CMA DFA-VPL-CUL-7. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM CULT-01: Cultural Resources Inventory.** See MM CUL-CEQA-2 below for more details on the cultural resources inventory. **APM CUL-02: Monitoring Discovery Plan.** See MM CUL-CEQA-2	and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	construction activities.	implemented. during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	below for more details on the Monitoring Discovery Plan. **BMP CULT-03: Cultural Resources Avoidance and Stipulations.** See MM CUL-CEQA-3 below for more details on cultural resources avoidance stipulations. **BMP CULT-04: Worker Cultural Resources Awareness Program.** See MM CUL-CEQA-2 below for more details on the worker cultural resources awareness program. **APM PAELO-01: Paleontological Resources Treatment Plan.** See MM CUL-CEQA-4 below for more details on the Paleontological Resources Treatment Plan required for the Project. Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			
Impact CUL-1 Impact CUL-2	MM CUL-CEQA-2 Cultural Resources Inventory. The Applicant shall preform a cultural resources inventory prior to the start of construction activities. The cultural inventory (which is further required by APM-CULT-01) shall include archival and pedestrian surveys to identify cultural resources, as well as an evaluation of the significance of those resources that cannot be avoided, in order to determine eligibility for listing in the CRHR, or that meet the qualifications to be considered unique archaeological resources under CEQA. A technical memorandum or report shall be completed, documenting the cultural resources within the Project area, and the associated eligibility listing. Avoidance of cultural resources within the Project area (as required through MM CUL-CEQA-2 below) shall be the preferred option when handling cultural resources that may be impacted by construction. If avoidance is not possible, then a HPTP and MDP will be prepared and implemented by the Applicant throughout construction activities to ensure proper treatment of the significant or unique resources, as specified in the PA. This HPTP and MDP	Known cultural resources shall be documented and mapped prior to the start of construction. Monthly reports shall be prepared by the Applicant and submitted to the CPUC. These monthly reports shall include a summary of compliance measures taken regarding the HPTP/MDP and a list of any cultural resources encountered during construction.	The Cultural Resources Inventory shall be completed prior to the start of construction activities and the HPTP/MDP shall be implemented throughout all construction activities.	The Applicant shall be responsible for ensuring the Cultural Resources Inventory and HPTP/MDP is prepared and implemented prior to and during construction activities.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	will, at a minimum, include the following: • Training of workers to recognize cultural resources (as specified in BMP CULT-04); • A brief description of all known cultural resources within the Project area; • A description of all avoidance measures such as flagging or fencing, and specific timeframes during which these MMs would be required to protect cultural resources; • Preparation and implementation of an MDP (as specified in APM CULT-02). This MDP shall include the following specifications: o The MDP shall map all cultural resources within the Project APE; o The MDP shall detail how resource are determined eligible or resources that are unevaluated but are avoided by Project design and would be marked and protected as Environmentally Sensitive Areas during construction; o Th MDP shall also map additional areas that are considered to be of high sensitivity for discovery of buried significant cultural resources including burials, cremations, or sacred features; and o The MDP shall detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native American tribes, and assessing NRHP and CRHR eligibility in the event of unknown archaeological resources are discovered during construction; • Recording procedures and documentation for all cultural resources			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	identified within the Project area; and • Policies for any collection, retention, and/or disposal of cultural resources uncovered during construction. Standards for Success: Known cultural resources will be avoided in accordance with this measure. Impacts to unknown cultural resources will be minimized to a less than significant level and treated appropriately throughout all construction activities.			
Impact CUL-1 Impact CUL-2	MM CUL-CEQA-3 Cultural Resources Avoidance and Stipulations. The Applicant shall first consider avoidance of impacts for all known cultural resources identified in the Project APE, through the cultural resources inventory. If the resource cannot be avoided, then the Applicant shall evaluate the resources for significance and eligibility for listing in the CRHR, to determine whether the resource qualifies as a unique archaeological resource under CEQA. As stated in BMP CULT-03, the Applicant would follow the avoidance procedures and other stipulations outlined in the PA and in the appropriate State HPTP. It shall do so for each cultural resource identified in the Project APE. If cultural resources cannot be avoided, then the Applicant shall implement MM CUL-CEQA-2 and any resources shall be evaluated for significance and eligibility for listing in the CRHR. Potential impacts on sites that qualify as historical resources or unique archaeological resources shall be mitigated in accordance with the provisions of the HPTP. **Standards for Success:** Impacts to know or unknown cultural resources will be minimized to a less than significant level throughout all construction activities.	Monthly reports shall be prepared by the Applicant and submitted to the CPUC. These monthly reports shall include a summary of compliance measures taken regarding the cultural resources avoidance stipulations and a list of any known or unknown cultural resources encountered during construction.	Cultural resources avoidance shall be implemented throughout all construction activities or treated with the provisions of the HPTP (MM CUL-CEQA-2) if avoidance is not possible.	The Applicant shall be responsible for ensuring that all known cultural resources are avoided in conformance with this mitigation measure.
Impact CUL-3	MM CUL-CEQA-4 Protect Paleontological Resources. The mitigation actions required by APM PALEO-01 and BMP PALEO-02 shall be accomplished by following the guidance within BLM IM 2009-11, which the	Monthly reports shall be prepared by the Applicant and submitted to the CPUC. These monthly	The Paleontological Resources Management Plan	The Applicant shall be responsible for ensuring the Paleontological

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	CPUC has accepted as appropriate for CEQA (DRECP EIS/EIR). The Applicant shall develop a Paleontological Resources Management Plan prior to the start of construction activities, which shall be implemented throughout all construction activities associated with the Project. The Paleontological Resources Management Plan shall include the following steps: Project developers shall document in a paleontological resources assessment report whether paleontological resources exist in a Project area on the basis of the following: the geologic context of the region and site and its potential to contain paleontological resources (including the PFYCs on site), a records search of institutions holding paleontological collections from California desert regions, a review of published and unpublished literature for past paleontological finds in the area, and coordination with paleontological researchers working locally in potentially affected geographic areas (or studying similar geologic strata). If the PFYC of the geologic units to be encountered during Project construction has not been determined, the Project developer shall use the best available data and field surveys, as applicable, to develop a site-specific map of the PFYC ratings. The PFYC map shall be at a scale equal to or more detailed than 1:100,000. Depending on the extent of existing information available and the sensitivity of the site, development of the resource assessment and PFYC map could require the completion of a paleontological survey. If paleontological resources are present at the site or if the geologic units to be encountered by the Project (at the surface or the subsurface) have a PFYC Class of 3, 4, or 5, a Paleontological Resources Management Plan shall be developed. The elements of the plan shall be consistent with BLM IM 2009-11 and shall be prepared and implemented by a professional paleontologist as defined under the Society of Vertebrate Paleontology	reports shall include a summary of compliance measures taken regarding the Paleontological Resources Management Plan and a list of any paleontological resources encountered, if any.	shall be developed prior to the start of construction activities and be implemented throughout all construction activities.	Resources Management Plan is prepared and implemented throughout construction activities.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	standards. The plan shall include the following: The qualifications of the principal investigator and monitoring personnel; Construction crew awareness training content, procedures, and requirements; Any measures to prevent potential looting, vandalism, or erosion impacts; The location, frequency, and schedule for on-site monitoring activities; Criteria for identifying and evaluating potential fossil specimens or localities; A plan for the use of protective barriers and signs, or implementation of other physical or administrative protection measures; Collection and salvage procedures; Identification of an institution or museum willing and able to accept any fossils discovered; and Compliance monitoring and reporting procedures. The Paleontological Resources Management Plan shall also identify if all geologic units that would be affected by the Project have been determined to be within an area with a PFYC Class of 1 or 2, the lead agency shall include paleontological resources as an element in construction worker awareness training and shall include measures to be followed in the event of unanticipated discoveries, including suspension of construction activities in the vicinity. The measure shall stipulate that the site be protected from further earth moving or damage until a qualified paleontologist can assess the significance and importance of the find and until the fossil specimen or locality can be recorded and salvaged, if necessary. The Paleontological Resources Management Plan shall evaluate all of the			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	construction methodologies proposed on a site, including destructive excavation techniques. Where applicable, the principal investigator shall include in the plan an evaluation of the potential for such techniques to disturb or destroy paleontological resources, an evaluation of whether loss of such fossils would represent a significant impact, and discussion of mitigation or compensatory measures (such as recordation/recovery of similar resources elsewhere on the site) that are necessary to avoid or substantially reduce the impact. Successful implementation of this MM will result in a less than significant impact to paleontological resources. Standards for Success: Impacts to known or unknown paleontological resources will be minimized to a less than significant level throughout all construction activities.			
Tribal Resources				
Impact TCR-1	**APM CULT-01: Cultural Resources Inventory.** A cultural inventory would be conducted that would document cultural resources within the area of potential effects for the Project. Based on results of this inventory, a HPTP would be developed to specifically address direct and indirect impacts that may result from Project construction.	Review adequacy of and implementation of HPTP.	Pre-construction	The Applicant
Impact TCR-1	**APM CULT-02: Monitoring and Discovery Plan.** DCRT's contractor would prepare an MDP that would describe procedures to be followed in the event of the discovery of cultural resources or human remains during implementation of the Project. The Draft MDP would be reviewed by BLM and consulting state and Federal agencies, the California and Arizona SHPOs, and local tribes. Upon approval of the MDP, DCRT would follow the procedures set forth in that plan during implementation of the Project.	Review adequacy of and implementation of MDP.	Pre-construction Construction	The Applicant
Impact TCR-1	**BMP CULT-03: Cultural Resources Avoidance and Stipulations.** DCRT would follow the avoidance procedures and other stipulations outlined in the PA	Review adequacy of and implementation of State	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	and in the appropriate State HPTP for each historic property identified in the HPTP.	HPTP.		
Impact TCR-1	**BMP CULT-04: Worker Cultural Resources Awareness Program**. Before starting any work, including mowing, staging, sediment and erosion control installation, tree removal, construction, and restoration, all employees and contractors performing activities and construction would receive training on the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act and the consequences of noncompliance with these acts. Training would also include cultural sensitivity to Native American concerns, since tribal monitors would be present during construction.	Review adequacy and implementation of worker cultural resources awareness program.	Pre-construction	The Applicant
Impact TCR-1	**BMP CULT-06: Sensitivity Model.** BLM would develop a sensitivity model for cultural resources using the DRECP geodatabase for the purpose of selecting Project footprints to minimize impacts to recorded historic properties and areas that are culturally sensitive to Tribes.	Verify use of sensitivity model.	Design Pre-construction	The Applicant
Impact TCR-1	**BMP CULT-07: Sample Survey.** The BLM shall ensure that a statistically significant cultural resources sample survey is conducted for consideration in Project planning in locations within the CDCA boundary.	Verify sample survey is adequate.	Design	The Applicant
Impact TCR-1	**BMP CULT-08: Project Planning.** DCRT would consider the results of the BLM's cultural resources sensitivity model in Project planning and provide justification if it is not considered to be feasible.	Review and verify results of sensitivity model.	Design	The Applicant
Impact TCR-1	**CMA LUPA-CUL-4. Cultural Resources and Tribal Interests.** Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes.	Confirm impacts to cultural resources and tribal interests are avoided.	Design	The Applicant
Impact TCR-1	**CMA LUPA-TRANS-CUL-1. Cultural Resources and Tribal Interests.** For transmission (and renewable energy) activities, require the applicant to pay all	Confirm appropriate costs	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	appropriate costs associated with the following processes, through the appropriate BLM funding mechanism: • All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity. • All appropriate costs associated with preliminary sensitivity analysis. • All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process. • All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.	are paid.	Construction	
Impact TCR-1	**CMA LUPA-TRANS-CUL-4.** For transmission (and renewable energy) activities, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.	Verify results of cultural resources sensitivities is used in Project planning.	Design Pre-construction	The Applicant
Impact TCR-1	**CMA LUPA-TRANS-CUL-5.** For transmission (and renewable energy) activities, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Confirm sample survey is provided.	Pre-construction	The Applicant
Impact TCR-1	**CMA LUPA-TRANS-CUL-6.** For transmission (and renewable energy) activities, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.	Confirm justification is provided.	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact TCR-1	**CMA DFA-VPL-CUL-1.** For renewable energy activities and transmission, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism: • All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity. • All appropriate costs associated with preliminary sensitivity analysis. • All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process. • All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.	Confirm appropriate costs are paid for Section 106 compliance.	Pre-construction	The Applicant
Impact TCR-1	**CMA DFA-VPL-CUL-4.** For renewable energy activities and transmission, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.	Confirm cultural resources sensitivity is included in initial planning.	Pre-construction	The Applicant
Impact TCR-1	**CMA DFA-VPL-CUL-5.** For renewable energy activities and transmission, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Confirm sample survey is provided.	Pre-construction	The Applicant
Impact TCR-1	**CMA DFA-VPL-CUL-6.** For renewable energy activities and transmission, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.	Confirm justification is provided in application	Pre-construction	The Applicant
Impact TCR-1	**CMA DFA-VPL-CUL-7.** For renewable energy activities and transmission,	Confirm NHPA Section	Pre-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar PA.	106 Process or alternate procedure is completed as necessary.		
Impact TCR-1	MM TCR-CEQA-1 Implement Tribal Cultural Resources Applicant Proposed Measures, Best Management Practices, Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.6.2 and 2.6.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to tribal cultural resources. These APMs, BMPs, and CMAs include; APM CULT-01, APM CULT-02, BMP CULT-03, BMP CULT-04, BMP CULT-06, BMP CULT-07, BMP CULT-08, CMA LUPA-CUL-4, CMA LUPA-TRANS-CUL-1, CMA LUPA-TRANS-CUL-4, CMA LUPA-TRANS-CUL-5, CMA LUPA-TRANS-CUL-6, CMA DFA-VPL-CUL-1, CMA DFA-VPL-CUL-4, CMA DFA-VPL-CUL-5, CMA DFA-VPL-CUL-6, CMA DFA-VPL-CUL-7. If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts.	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM CULT-01: Cultural Resources Inventory.** See MM CUL-CEQA-2 (Section 2.5.6) for more details on the cultural resources inventory. **APM CUL-02: Monitoring Discovery Plan.** See MM CUL-CEQA-2 (Section 2.5.6) for more details on the Monitoring Discovery Plan. **BMP CULT-03: Cultural Resources Avoidance and Stipulations.** See MM CUL-CEQA-3 (Section 2.5.6) for more details on cultural resources avoidance stipulations. **BMP CULT-04: Worker Cultural Resources Awareness Program.** See MM CUL-CEQA-2 (Section 2.5.6) for more details on the worker cultural resources awareness program. Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			
Geology and Soils				
Impact GEO-2	**APM WQ-01: SWPPP Development and Implementation.** Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would	Review adequacy of and implementation of SWPPP.	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following: defining ingress and egress within the Project site implementing a dust control program during construction properly containing stockpiled soils Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the SWRCB and the ADEQ. The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit: stormwater team qualifications and contact information identification of operators			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	nature of construction activities sequence and estimated dates of construction activities site description site map(s) receiving waters control measures to be used during construction activity summary of potential pollutant sources use of treatment chemicals pollution prevention procedures, including spill prevention and response and waste management procedures			
Impact GEO-2	**BMP SOIL-01.** During reclamation and revegetation efforts, a BLM soil scientist and/or botanist would assist reclamation crews with determining type and location of any scarification.	Confirm a BLM soil scientist and/or botanist assists with reclamation and revegetation efforts.	Post-construction	The Applicant
Impact GEO-2	**BMP SOIL-02.** During reclamation and revegetation efforts, the BLM would work with reclamation crews to determine where soil compaction would be appropriate, to avoid potential adverse conditions created by compaction.	Confirm BLM works with reclamation crews.	Post-construction	The Applicant
Impact GEO-2	**BMP SOIL-03.** Covers for topsoil stockpiles would be of materials resistant to damage and/or degradation from exposure to ultraviolet light and other elements and would be replaced (as needed) if they deteriorate, become worn, or damaged.	Ensure correct materials are used for topsoil stockpile covers.	Construction	The Applicant
Impact GEO-2	**BMP SOIL-04.** The disruption of desert pavement shall be minimized to the extent feasible. Grading for new access roads or work areas in areas covered by desert pavement shall be avoided if possible. If avoidance of these areas is not	Confirm disruption of desert pavement is minimized.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	possible, the desert pavement surface shall be protected from damage or disturbance from construction vehicles by use of temporary mats on the surface, or by other suitable means.			
Impact GEO-2	**BMP SOIL-05.** Desert pavement in activity areas in California shall be assessed by biological monitors prior to construction. If disturbance from an activity is likely to exceed 10% of the desert pavement identified within the activity boundary, the BLM would determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.	Confirm biological monitors assess desert pavement disturbance.	Pre-construction	The Applicant
Impact GEO-2	**BMP SOIL-06.** Side-casting of soil during road construction shall be avoided.	Confirm avoidance.	Construction	The Applicant
Impact GEO-2	**BMP SOIL-07.** To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.	Confirm avoidance.	Construction	The Applicant
	APM BIO-12. Noxious and Invasive Species Control. A Noxious Weed Control Plan that addresses specific requirements in CMA LUPA-BIO-11 would be developed, approved by the BLM, and implemented prior to initiation of ground disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area, describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and	Confirm development and implementation of a Noxious Weed Control Plan.	Pre-Construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	practices for the application of herbicides; and other requirements in applicable BLM Weed Management Plans.			
Impact GEO-2	**CMA LUPA-SW-8.** As determined necessary on an activity specific basis, prepare a site plan specific to major soil types present (≥5% of footprint or laydown surfaces) in Wind Erodibility Groups 1 and 2 and in Hydrology Soil Class D as defined by the USDA NRCS to minimize water and air erosion from disturbed soils on activity sites.	Review adequacy of and implementation of site plan specific to soil types.	Pre-construction	The Applicant
Impact GEO-2	**CMA LUPA-BIO-9.** Implement the following general LUPA CMA for water and wetland dependent resources: ▪ Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following: o On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills. o Hazardous material leaks, spills, or releases will be immediately cleaned, and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill. o Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any	Confirm implementation of standard best practices to prevent impacts to wetland and water dependent resources. Confirm disturbance minimization.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	hazardous material leaks, spills, or releases. ▪ Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following: o Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion. o Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed. o Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins. o Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized. o Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins. o Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.			
Impact GEO-2	**CMA LUPA-SW-9.** The extent of desert pavement within the proposed	Confirm mapping of	Pre-construction	The Applicant and

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	boundary of an activity shall be mapped if it is anticipated that the activity may create erosional or ecologic impacts. Mapping will use the best available data and standards, as determined by BLM. Disturbance of desert pavement within the boundary of an activity shall be limited to the extent possible. If disturbance from an activity is likely to exceed 10% of the desert pavement mapped within the activity boundary, the BLM will determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.	desert pavement.	Construction	BLM
Impact GEO-2	**CMA LUPA-SW-10.** The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped if it is anticipated that an activity will impact these resources. To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.	Confirm mapping of additional sensitive soil areas.	Pre-construction Construction	The Applicant
Impact GEO-2	**CMA LUPA-SW-11.** Where possible, side casting shall be avoided where road construction requires cut- and-fill procedures.	Confirm avoidance.	Pre-construction Construction	The Applicant
Impact GEO-2	MM GEO-CEQA-1 Implement Geology and Soils Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.7.2 and 2.7.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to geology and soils. These APMs, BMPs, and CMAs include; APM WQ-01, BMP SOIL-01, BMP SOIL-02, BMP SOIL-03, BMP SOIL-04, BMP SOIL-05, BMP SOIL-06, BMP SOIL-07, APM BIO-12, CMA	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	LUPA-SW-8, CMA LUPA-BIO-9, CMA LUPA-SW-9, CMA LUPA-SW-10, CMA LUPA-SW-11. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: ▪ **BMP SOIL-07.** As discussed in this BMP, desert biologically intact soil crusts will be avoided to the extent feasible. Where it is infeasible to avoid these areas, the Applicant will work with the BLM to identify further measures to reduce wind and water erosion in these areas and shall implement MM GEO-CEQA-2 in these areas to prevent long-term erosion. Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.	monthly.		BLM and/or the CPUC to determine the applicability of each measure.
Impact GEO-2	MM GEO-CEQA-2 Implement an Erosion Control Plan and Demonstrate Compliance with Water Quality Permits. The Applicant shall develop and submit an Erosion Control Plan to the CPUC and BLM at least 60-days prior to the start of construction activities. The	The Applicant shall develop the Erosion Control Plan in conjunction with the	The Erosion Control Plan shall be developed at least 60-days prior	The Applicant shall develop the Erosion Control Plan and ensure

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Erosion Control Plan shall be developed in conjunction with the SWPPP (See APM WQ-01) and shall be kept onsite and readily available upon request. Successful implementation of the Erosion Control Plan will result in a less than significant impact related to erosion during all construction activities. Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include: The location of all soil-disturbing activities, including, but not limited to new and/or improved access and spur roads; The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as crossings or public storm drains by the right-of-way and access roads); BMPs to protect drainage structures, such a public storm drains, downstream of soil disturbance activities as well as to prevent loss of topsoils and erosion during construction (See BMP SOIL-01 through -07); Design features to be implemented to minimize erosion during construction; If soil cement is proposed, the specific locations must be defined in this Plan, and evidence of approval by the appropriate jurisdiction shall be submitted to the CPUC and BLM prior to use; If design features include the use of retaining structures and/or walls, the design of the features shall be consistent with MM VIS-06 (under Section 2.1.6 above) to use structure type to match the existing structures in the area and reduce form contrast; The location and type of BMPs that would be installed to prevent off-site sedimentation; Specification for the implementation and maintenance of erosion control	SWPPP required for the Project. The Applicant shall keep on file any corrective actions related to erosion control and the SWPPP and submit these records to the RWQCB, CPUC, BLM, and any applicable counties, local municipalities, or tribal governments upon request. The Annual Report shall be developed and filed by the Applicant for each reporting period. Any permits required shall be developed by the Applicant and submitted to the applicable agency for approval. The Applicant shall maintain a record of all permits and associated approvals to be kept on file.	to construction and shall be implemented throughout all construction activities. Any permits required for the Project shall be obtained prior to the start of construction.	that it is implemented throughout construction activities. The Applicant shall also be responsible for obtaining all necessary permits related to erosion and water quality control.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	measures and description of the erosion control practices, including appropriate design and installation details; Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC. The locations requiring erosion control/SWPPP corrective actions/repairs shall be tracked by the Applicant, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the Federal California Construction General Permits. The inspection reports shall be maintained and kept in their respective SWPPP, kept on site as required by the Federal and State Construction General Permits, and made available to the RWQCB, CPUC, BLM, counties, local municipalities, and tribal governments, on request. Additionally, an Annual Report shall be filed for each reporting period in compliance with the Federal and California Construction General Permit reporting requirements. The Applicant shall submit to the CPUC and the BLM any grading plans that define the locations of the specific features listed. The Applicant shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in any soil-disturbance or construction activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Stormwater Discharges Associated with Construction Activities (General Permit) from the applicable RWQCBs, and the Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land. Prior to ground disturbance in stream channels or other waters jurisdictional to the State of California or the Federal Government, the Applicant shall obtain a Streambed Alteration Agreement from the CDFW, a Section 404 permit from			

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	the ACOE, and a CWA Section 401 certification from the SWRCB. Standards for Success: The Project will comply with Federal and California Construction General Permit reporting requirements and any stipulations of applicable permits related to erosion control or the SWPPP.			
Hazards and Hazardous Materials				
Impact HAZ-1 Impact HAZ-2	**APM HAZ-01: Hazardous Substance Control and Emergency Response.** DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable. • Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as	Review adequacy of and implementation of hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	appropriate, to meet state and federal regulations. • All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following: • Proper disposal of potentially contaminated soils. • Establishing site-specific buffers for construction vehicles and equipment near sensitive resources. • Emergency response and reporting procedures to address hazardous material spills. • Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit. DCRT would complete its Emergency Action Plan Form as part of Project tailgate meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailgate information.			
Impact HAZ-6	**APM TT-01: Traffic Coordination.** Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project. This plan would also include measures/protocols for aviation, including helicopter use, coordination with local air traffic control, and	Review adequacy of and implementation of Transportation Management Plan.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	a Congested Area Plan, pursuant to FAA regulations.			
Impact HAZ-1	**APM WQ-01: SWPPP Development and Implementation.** Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following: defining ingress and egress within the Project site implementing a dust control program during construction properly containing stockpiled soils Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is	Review adequacy of and implementation of SWPPP.	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the SWRCB and the ADEQ. The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit: stormwater team qualifications and contact information identification of operators nature of construction activities sequence and estimated dates of construction activities site description site map(s) receiving waters control measures to be used during construction activity summary of potential pollutant sources use of treatment chemicals pollution prevention procedures, including spill prevention and response and waste management procedures			
Impact HAZ-8	**APM HAZ-02: Fire Avoidance and Suppression.** Per the Fire Prevention Plan for the Project: DCRT would select a welding site that is void of native combustible material and/or would clear such material for 10 feet around the area where the work is to be performed. DCRT would follow its standard	Confirm implementation of Fire Prevention Plan.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	practice for clearing in wildland areas. Project personnel would be directed to drive on areas that have been cleared of vegetation, park away from dry vegetation, and carry water, shovels, and fire extinguishers in times of high fire hazard. DCRT would also prohibit trash burning. Additionally, fire-suppression materials and equipment would be kept adjacent to all areas of work and in staging areas and would be clearly marked.			
Impact HAZ-8	**BMP PH&S-02.** A Fire Prevention Plan would be developed for the Project.	Review adequacy of and implementation of Fire Prevention Plan.	Pre-construction	The Applicant
Impact HAZ-1	**APM WQ-02: Worker Environmental Awareness Program Development and Implementation.** The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs and Hazardous Substance Control and Containment and Emergency Response Plan.	Confirm worker environmental awareness training is implemented for all new personnel preforming ground-disturbing activities.	Pre-construction Construction	The Applicant
Impact HAZ-1	**BMP HAZ-03: Equipment & Material Inventory.** DCRT would provide the BLM with an inventory of equipment and materials to cover each hazardous material used at any time during the life of the Project, updating as additions to equipment and materials are made. Appropriate equipment and materials would follow specific recommendations for individual Haz Mat types in BLM Handbooks, EPA guidelines, and from the California DTSC.	Verify inventory of equipment and materials and utilization.	Pre-construction Construction	The Applicant
Impact HAZ-1	**APM WQ-03: Vehicles and Equipment Fueling and Maintenance.** Vehicle and equipment fueling and maintenance operations would be conducted in	Ensure vehicle and equipment fueling and	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	designated areas only; these areas would be equipped with appropriate spill control materials and containment.	maintenance operations conducted in designated areas.		
Impact HAZ-1	**BMP HAZ-04.** DCRT would provide the BLM with a Pesticide/Herbicide Use Proposal, outlining the pesticides and herbicides that would be proposed for use on the project, demonstrating conformance with BLM requirements, and seeking preapproval before use. Only BLM-approved products from the approved California herbicide list would be used in California.	Review and implement Pesticide/Herbicide Use Proposal.	Pre-construction	The Applicant
Impact HAZ-1	**CMA LUPA-SW-6**. In addition to the applicable required governmental safeguards, third party activities will implement up-to-date standard industry construction practices to prevent toxic substances from leaching into the soil.	Confirm up-to-date standard industry construction practices implemented.	Construction	The Applicant
Impact HAZ-1	**CMA LUPA-SW-7.** Prepare an emergency response plan, approved by the BLM contaminant remediation specialist, that ensures rapid response in the event of spills of toxic substances over soils.	Review adequacy of emergency response plan.	Pre-construction	The Applicant
Impact HAZ-1	**CMA LUPA-BIO-9.** Implement the following general LUPA CMA for water and wetland dependent resources: ▪ Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following: o On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and	Confirm implementation of standard best practices to prevent impacts to wetland and water dependent resources. Confirm disturbance minimization.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	hazardous materials spills. o Hazardous material leaks, spills, or releases will be immediately cleaned, and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill. o Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases. ▪ Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following: o Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion. o Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed. o Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins. o Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is			

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	minimized. o Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins. Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.			
Impact HAZ-8	**CMA DFA-VPL-BIO-FIRE-1.** Implement the following standard practice for fire prevention/protection: • Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site	Confirm fire prevention and protection on-site, including emergency response information.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact HAZ-6 Impact HAZ-7	MM TRANS CEQA-2 Traffic, Transportation, and Access Management Plan. The Applicant shall develop a Traffic, Transportation, and Access Management Plan at least 30-days prior to the start of construction and work with the BLM and Riverside County to prepare and implement the Plan for roadways adjacent to and directly affected by the proposed Project facilities. The Traffic, Transportation, and Access Management Plan shall be submitted to the BLM and the County for approval prior to the start of ground disturbing activities and issuance of a County grading permit. The Traffic, Transportation, and Access Management Plan shall be implemented by the Applicant throughout all construction activities. The Traffic, Transportation, and Access Management Plan shall include, but not limited to, the following requirements: The Traffic, Transportation, and Access Management Plan shall conform to Part 6 (Temporary Traffic Control) of the California Manual on Uniform Traffic Control Devices; Identify truck routes designated by Riverside County and local jurisdictions haul routes that minimize truck traffic on local roadways; Provide sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public right-of-was Scheduling truck trips outside the peak morning and evening commute hours; Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized; Implementing roadside safety protocols including advance “Road Wok Ahead” warning and speed control signs which shall be posted to reduce and provide safe traffic flow through the work zone;	The Applicant shall monitor construction transportation and access to ensure that the Traffic, Transportation, and Access Management Plan is implemented successfully as documented in inspection logs.	The Traffic, Transportation, and Access Management Plan shall be prepared at least 30-days prior to the start of construction and shall be implemented throughout all construction activities.	The Applicant shall be responsible for ensuring that the Traffic, Transportation, and Access Management Plan is prepared and implemented throughout construction activities.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities and the locations of detours and lane closures. Maintain access for emergency vehicles within, and/or adjacent to roadways affected by construction activities at all times; Repairing and restoring adversely affected roadway pavements to their pre-construction condition; Damage will be documented by the Project Applicant and the applicable jurisdiction (i.e. Caltrans, County, or individual) will be notified within 24 hours. The Applicant will work with the jurisdiction affected and will repair the damage within 30 days. Coordination of individual traffic plans for the Project and nearby Projects; Coordination between the contractor and Riverside County in developing circulation and detour plans that include safety features (e.g. signage and flaggers). The circulation and detour plans shall address: Full and partial roadway closures; Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices; Bicycle detour plans, where applicable; Parking along arterial and local roadways; and Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites. Protocols for updating the Traffic, Transportation, and Access Management			

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	Plan to account for delays or changes in the schedules of individual projects The Traffic, Transportation, and Access Management Plan shall incorporate an access road siting and management plan, Congested Area Plan (pursuant to FAA regulations and APM TT-01), and a transportation plan for the transport and transmission tower components and equipment. Standards for Success: Traffic flow remains at acceptable levels, emergency access remains possible at all times, the public is reasonably notified of any road closures, delays, or lane restrictions, and the Project area remains in compliance with all applicable transportation goals, policies, and requirements.			
Impact HAZ-1 Impact HAZ-2 Impact HAZ-8	MM HAZ-CEQA-1 Implement Hazards and Hazardous Materials Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.8.2 and 2.8.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to hazards and hazardous materials. These APMs, BMPs, and CMAs include; APM HAZ-01, APM TT-01, APM WQ-01, APM HAZ-02, BMP PH&S-02, APM WQ-02, BMP HAZ-03, APM WQ-03, BMP HAZ-04, CMA LUPA-SW-6, CMA LUPA-SW-7, CMA LUPA-BIO-9, CMA DFA-VPL-BIO-FIRE-1. If an APM, BMP, or CMA is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM TT-01: Traffic Coordination.** As discussed in this APM, a Traffic, Transportation, and Access Management Plan would be developed for the Project. The details of this Traffic, Transportation, and Access Management Plan, as well as the correlation with a Congested Area Plan, are further discussed under MM TRANS-CEQA-2. **APM HAZ-02: Fire Avoidance and Suppression, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1.** As discussed in APM HAZ-02, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1, a Fire Prevention Plan shall be developed and implemented for the Project throughout construction and operation and maintenance. The Applicant shall develop a Project Fire Prevention Plan in consultation with the appropriate local fire agencies at least 30-days prior to the start of construction activities. The Plan shall cover the construction and operations/maintenance phases of the Project. The Applicant shall monitor Project-related activities to ensure implementation and effectiveness of the Plan. The final Plan will be approved by the consulted fire agencies prior to the initiation of construction activities and shall be implemented during all Project-related activities by the Applicant. Information contained in the Plan and location of fire-suppression materials and equipment shall be included as part of the			

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	Worker Environmental Awareness Program discussed in APM BIO-01. Successful implementation of this Plan shall result in a less than significant impact to the potential for construction-related fires. At minimum, the Plan shall include the following: Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, hot work restrictions, and timing of vegetation treatment or maintenance. Where necessary, vegetation management or clearing necessary to mitigate fire risk shall supersede other measures for vegetation protection and avoidance. Applicable permitting, compensation, and mitigation resulting from such activity shall be the responsibility of the Applicant. Proper use of construction, maintenance, and decommissioning equipment. Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days. Fire coordinator and fire patrol roles and responsibilities. Worker training for fire prevention, initial attack firefighting, and fire reporting. Emergency fire suppression equipment/tools inventory and maintenance. Emergency communication, response, and reporting procedures. Coordination with local fire agencies to facilitate emergency access through the Project site. Emergency contact information. Compliance with applicable wildland fire management plans and policies			

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	established by state and local agencies. Other information as required by responsible and consulted agencies. **Responsible Party:** The Applicant shall develop the Fire Prevention Plan and ensure that it is implemented throughout construction activities. **Timing:** The Applicant shall develop the Fire Prevention Plan at least 30-days prior to the start of construction activities. The Fire Prevention Plan shall be implemented throughout all construction activities. **Mitigation Monitoring and Reporting Program:** The Applicant shall ensure that the information in the Fire Prevention Plan is included in the Worker Environmental Awareness Program. Documentation of any Red Flag Warnings or High to Extreme Fire Danger days shall be kept on file and submitted to the applicable local fire agencies as well as the BLM and CPUC. **Standards for Success:** Construction impacts related to fires is reduced to a less than significant level and no fires are started as a result of construction activities. **BMP HAZ-04.** The Pesticide Use Proposal will be developed in accordance with MM VEG-CEQA-1 (See Section 2.4.6 above). Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			
Impact HAZ-2	MM HAZ-CEQA-2 Identify and Pothole Existing Utility Pipelines. The Applicant shall be responsible for the implementation and enforcement of this MM by identifying any existing utility pipelines along the Project	The Applicant shall document any public utilities discovered during database searches,	Database searches, coordination with public utility	The Applicant shall be responsible for identifying any existing utility

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	alignment through database searches, coordination with public utility agencies, and/or reviewing historic documents during the design phase of the Project. If existing utility pipelines are identified during this search, the Applicant shall then uncover or "pothole" any existing utility pipelines within 10 feet of Project excavations, including tower structure foundations and underground duct bank or vaults, prior to the start of any earth moving activities in a particular area to ensure that excavation work does not damage the existing utility pipeline. The Applicant shall monitor Project construction activities to ensure public utilities remain intact and are not disturbed by construction of the Project. If undiscovered or undocumented utilities are encountered during construction, all Project work shall stop in that location and the Applicant shall notify the appropriate utility agency within 24-hours of discovery. Project work may resume once the area is cleared by the Applicant and the public utility agency. Standards for Success: Any Project work that will occur within the vicinity of a utility pipeline shall remain undisturbed from construction activities.	consultation, and review of historic documentation. The Applicant shall also keep records of all monitoring activities for the utility pipelines, including any necessary actions taken to avoid these utilities or document any previously unknown utilities discovered during construction. If undiscovered or undocumented utilities are encountered during construction, the Applicant shall notify the appropriate utility agency within 24-hours of discovery.	agencies, and review of historic documents in order to identify existing utilities within the Project area shall be completed prior to the start of construction activities. Monitoring of public utilities within the Project area shall occur throughout construction activities.	pipelines along the Project alignment and uncover any of these existing facilities within 10 feet of Project excavations. The Applicant shall be responsible that any existing utility pipelines are not disturbed during construction activities.
Electromagnetic Fields				
-	MM EMF-CEQA-1 Field Management Plan. The Applicant will prepare an FMP at least 30-days prior to the start of construction activities to show implementation of the no-cost/low-cost measures. The FMP shall be submitted to the CPUC for review and to be kept on file and shall be implemented throughout all construction phases of the Project.	The Applicant shall develop and submit the FMP to the CPUC and implement any magnetic field reduction measures relative to the CPUC's stated goal of approximately 4 percent	The FMP shall be prepared at least 30-days prior to the start of construction. The FMP shall be implemented throughout	The Applicant shall be responsible for the development and implementation of the FMP.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	The FMP will include the following Project information: A description of the Project (cost, design, length, location, etc.), and enhanced by updated Project designs and plans; A description of the surrounding land uses using EMF reduction priority criteria classifications; No-cost options to be implemented; Priority areas where low-cost measures are to be applied, and; Measures considered for magnetic field reduction, percent reduction and cost. This FMP will define EMF reduction priority criteria classifications for the Project's alignment and which EMF reduction options were identified. Project EMF reduction design criteria will be presented, including a description of how the Project alignment is proposed to be treated equivalently or why low-cost measures cannot be applied to this Project due to cost, percent reduction, equivalence, secondary environmental impacts, or other reasons. The ultimate cost of the EMF reduction elements incorporated into the Project will be qualified and compared to the CPUC's stated goal of approximately 4 percent of the Project's budget. Standards for Success: EMF impacts are reduced to a less than significant level.	of the Projects cost.	construction activities.	
Hydrology and Water Quality				
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**APM WQ-01: SWPPP Development and Implementation.** Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs	Review adequacy of and implementation of SWPPP.	Pre-construction Construction Post-construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following: defining ingress and egress within the Project site implementing a dust control program during construction properly containing stockpiled soils Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the State Water Resources Control Board (SWRCB) and the Arizona Department of			

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	Environmental Quality (ADEQ). The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit: stormwater team qualifications and contact information identification of operators nature of construction activities sequence and estimated dates of construction activities site description site map(s) receiving waters control measures to be used during construction activity summary of potential pollutant sources use of treatment chemicals pollution prevention procedures, including spill prevention and response and waste management procedures			
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**APM WQ-02: Worker Environmental Awareness Program Development and Implementation.** The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs, Health and Safety	Confirm worker environmental awareness training is implemented for all new personnel preforming ground-disturbing activities.	Pre-construction Construction	The Applicant

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	Plan, and Hazardous Substance Control and Emergency Response Plan.			
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**APM WQ-03: Vehicles and Equipment Fueling and Maintenance**. Vehicle and equipment fueling and maintenance operations would be conducted in designated areas only; these areas would be equipped with appropriate spill control materials and containment.	Verify vehicle equipment fueling in designated areas with appropriate spill control.	Construction	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**BMP WQ-04: Non-petroleum Dust Palliatives.** Palliatives used for dust control would be non-petroleum products in addition to non-toxic, as specified in AQ-01.	Confirm palliatives used for dust control are non-petroleum products and non-toxic.	Pre-construction Construction	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**BMP WQ-05: Water Use.** Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the Project or its associated mitigation and remediation measures, as specified in approved plans and permits.	Confirm water use.	Pre-construction Construction Post-construction Operation	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**BMP WQ-06: Avoidance of Hydrologic Alterations.** Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they would dissipate by percolation into the landscape. All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the project area, or specific MMs shall be implemented that would minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate.	Confirm water quality or quantity impacts are avoided or mitigated appropriately.	Design Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**BMP WQ-07: Structures in Floodplains.** No permanent structures would be placed in floodplains that are narrower at the ROW crossing than the typical span width of 1,200 feet (i.e., it is assumed that such floodplains could be spanned and avoided).	Confirm permanent structures span or avoid floodplains.	Design	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**CMA LUPA-SW-1.** Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity specific NEPA analysis.	Confirm appropriate water resource protective measures are implemented.	Pre-construction	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**CMA LUPA-SW-5.** Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings "Soil Resources," "Surface Water," and "Groundwater Resources," may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates: • The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.	Verify need for documentation.	Pre-construction	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**CMA LUPA-SW-15.** Surface water diversion for beneficial use will not occur absent a state water right.	Verify state water right and use.	Pre-construction Construction Post-construction Operation	The Applicant

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Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**CMA LUPA-SW-18**. Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.	Confirm water use is solely for beneficial use of the project or its associated mitigation and remediation measures.	Pre-construction Construction Post-construction Operation	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**CMA LUPA-SW-20.** After application of applicable avoidance and minimization measures, all remaining unavoidable residual impacts to surface waters from the proposed activity shall be mitigated to ensure no net loss of function and value, as determined by the BLM.	Confirm mitigation of residual impacts to surface waters.	Construction Post-construction	The Applicant
Impact WQ-1 Impact WQ-3 Impact WQ-5 Impact WQ-6	**CMA LUPA-SW-21.** Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.	Confirm alternatives assess hydrology of the Project site.	Design	The Applicant
Impact WQ-1 Impact WQ-5	MM GEO-CEQA-2 Implement an Erosion Control Plan and Demonstrate Compliance with Water Quality Permits. The Applicant shall develop and submit an Erosion Control Plan to the CPUC and BLM at least 60-days prior to the start of construction activities. The Erosion Control Plan shall be developed in conjunction with the SWPPP (See APM WQ-01) and shall be kept onsite and readily available upon request. Successful implementation of the Erosion Control Plan will result in a less than significant impact related to erosion during all construction activities. Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include:	The Applicant shall develop the Erosion Control Plan in conjunction with the SWPPP required for the Project. The Applicant shall keep on file any corrective actions related to erosion control and the SWPPP and submit these records to the RWQCB, CPUC, BLM, and any	The Erosion Control Plan shall be developed at least 60-days prior to construction and shall be implemented throughout all construction activities. Any permits required for the Project	The Applicant shall develop the Erosion Control Plan and ensure that it is implemented throughout construction activities. The Applicant shall also be responsible for obtaining all

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	The location of all soil-disturbing activities, including, but not limited to new and/or improved access and spur roads; The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as crossings or public storm drains by the right-of-way and access roads); BMPs to protect drainage structures, such a public storm drains, downstream of soil disturbance activities as well as to prevent loss of topsoils and erosion during construction (See BMP SOIL-01 through -07); Design features to be implemented to minimize erosion during construction; If soil cement is proposed, the specific locations must be defined in this Plan, and evidence of approval by the appropriate jurisdiction shall be submitted to the CPUC and BLM prior to use; If design features include the use of retaining structures and/or walls, the design of the features shall be consistent with MM VIS-06 (under Section 2.1.6 above) to use structure type to match the existing structures in the area and reduce form contrast; The location and type of BMPs that would be installed to prevent off-site sedimentation; Specification for the implementation and maintenance of erosion control measures and description of the erosion control practices, including appropriate design and installation details; Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC. The locations requiring erosion control/SWPPP corrective actions/repairs shall	applicable counties, local municipalities, or tribal governments upon request. The Annual Report shall be developed and filed by the Applicant for each reporting period. Any permits required shall be developed by the Applicant and submitted to the applicable agency for approval. The Applicant shall maintain a record of all permits and associated approvals to be kept on file.	shall be obtained prior to the start of construction.	necessary permits related to erosion and water quality control.

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	be tracked by the Applicant, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the Federal California Construction General Permits. The inspection reports shall be maintained and kept in their respective SWPPP, kept on site as required by the Federal and State Construction General Permits, and made available to the RWQCB, CPUC, BLM, counties, local municipalities, and tribal governments, on request. Additionally, an Annual Report shall be filed for each reporting period in compliance with the Federal and California Construction General Permit reporting requirements. The Applicant shall submit to the CPUC and the BLM any grading plans that define the locations of the specific features listed. The Applicant shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in any soil-disturbance or construction activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Stormwater Discharges Associated with Construction Activities (General Permit) from the applicable RWQCBs, and the Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land. Prior to ground disturbance in stream channels or other waters jurisdictional to the State of California or the Federal Government, the Applicant shall obtain a Streambed Alteration Agreement from the CDFW, a Section 404 permit from the ACOE, and a CWA Section 401 certification from the SWRCB. Standards for Success: The Project will comply with Federal and California Construction General Permit reporting requirements and any stipulations of applicable permits related to erosion control or the SWPPP.			
Impact WQ-1	MM WQ-CEQA-1 Implement Hydrology and Water Quality Applicant	The Applicant shall	APMs, BMPs,	The Applicant shall

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact WQ-3 Impact WQ-5 Impact WQ-6	Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.10.2 and 2.10.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to hydrology and water quality. These APMs, BMPs, and CMAs include; APM WQ-01, APM WQ-02, BMP WQ-04, BMP WQ-05, BMP WQ-06, BMP WQ-7, CMA LUPA-SW-1, CMA LUPA-SW-5, CMA LUPA-SW-15, CMA LUPA-SW-18, CMA LUPA-SW-20, and CMA LUPA-SW-21. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **CMA LUPA-SW-20.** This CMA shall also include a determination based upon the California Rapid Assessment Method (CWMW 2015). Standards for Success: Compliance with all applicable APMs, BMPS, and	develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	and CMAs shall be implemented throughout construction activities.	ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	CMAs is achieved throughout construction of the Project.			
Land Use and Planning				
Impact LU 2	**CMA LUPA-LANDS-4.** Nonfederal lands within the boundaries of BLM LUPA land use allocations are not affected by the LUPA.	NA	Design	The Applicant
Impact LU 2	**CMA LUPA-LANDS-5.** The MUCs used to determine land tenure in the CDCA Plan will be replaced by areas listed in the CMAs.	NA	Design	The Applicant
Impact LU 2	**CMA LUPA-LANDS-8.** The CDCA Plan requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors, or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment.	Verify whether Project is located in designated utility corridor and complies with CDCA Plan.	Design	The Applicant
Noise				
Impact NOI-1 Impact NOI-2 Impact NOI-4	**APM NO-01: Noise Minimization with Portable Barriers.** Compressors and other small stationary equipment used during construction would be shielded with portable barriers if located within 200 feet of a residence.	Confirm use of portable barriers.	Construction	The Applicant
Impact NOI-1 Impact NOI-2 Impact NOI-4	**APM NO-02: Noise Minimization with Quiet Equipment.** Quiet equipment (for example, equipment that incorporates noise control elements into the design; quiet model air-compressors or generators can be specified) would be used during construction whenever possible.	Confirm use of quiet equipment.	Construction	The Applicant
Impact NOI-1	**APM NO-03: Noise Minimization through Direction of Exhaust.** Stationary	Confirm direction of	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact NOI-2 Impact NOI-4	equipment exhaust stacks and vents (i.e., on equipment like generators and lights) would be directed away from buildings where feasible.	exhaust is away from buildings.		
Impact NOI-1 Impact NOI-2 Impact NOI-4	**APM NO-04: Blasting Mitigation.** If blasting is required, the timeframe that blasting activity would occur would be limited, in addition to limiting the number of blasts that occur per hour or per day.	Confirm blasting timing limited.	Construction	The Applicant
Impact NOI-1 Impact NOI-2 Impact NOI-4	**BMP NO-05: County, State, and Federal Noise Regulations.** Project would be located far enough from residences or include engineering and/or operational methods such that county, state, and/or federal regulations for noise are not exceeded.	Confirm noise levels are not exceeded.	Design	The Applicant
Impact NOI-1 Impact NOI-2 Impact NOI-4	**BMP NO-06: Hours of Daily Activity.** The hours of daily activities would be limited, and noise barriers would be constructed if needed and practicable. Coordination with nearby residents is recommended.	Confirm time limits on activity.	Construction	The Applicant
Impact NOI-1 Impact NOI-2 Impact NOI-4	**BMP NO-07: Sensitive Wildlife Protection.** To the extent feasible, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.	Confirm stationary noise located away from sensitive wildlife.	Construction	The Applicant
Impact NOI-1 Impact NOI-2 Impact NOI-4	**CMA LUPA-BIO-12.** For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise: To the extent feasible and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat. Implement engineering controls on stationary equipment, buildings, and work	Verify mufflers are used on construction equipment.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	areas including sound insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels. Use noise controls on standard construction equipment including mufflers to reduce noise			
Impact NOI-1 Impact NOI-2 Impact NOI-4	MM NO-CEQA-1 Implement Noise Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.13.2 and 2.13.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to noise. These APMs, BMPs, and CMAs include; APM NO-01, APM NO-02, APM NO-03, APM NO-04, BMP NO-05, BMP NO-06, BMP NO-07, and CMA LUPA-BIO-12. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements:	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	APM NO-03: Noise Minimization through Direction of Exhaust. Consistent with APM NO-03, stationary equipment exhaust stacks and vents shall be directed away from buildings, where feasible. If infeasible to do so, the Applicant shall work with the affected residents and the County to achieve the necessary reduction in noise through placement of noise barriers or time of day that such construction work will take place. **APM NO-04: Blasting Mitigation.** Consistent with APM NO-04, if any blasting activities will occur during construction, the number of blasts per hour or per day would be limited. In addition, the Applicant shall notify any sensitive receptors, consistent with MM NO-CEQA-2 below), who are within 100 feet of such activity. **BMP NO-05: County, State, and Federal Noise Regulations.** As specified in BMP NO-05, the Project, including staging areas would be located far enough from residences to comply with the Riverside County Noise Ordinance, wherever possible. As discussed under Impact NOI 1 above, the Riverside County Noise Ordinance specifies that exemptions from noise standards include private construction projects located within 0.25 of a mile from an inhabited dwelling, provided that construction does not occur between the hours of 6 p.m. and 6 a.m. during the months of June through September, and construction does not occur between the hours of 6 p.m. and 7 a.m. during the months of October through May. Construction work shall comply with these restrictions and will be in compliance with the Riverside County Noise Ordinance. **BMP NO-06. Hours of Daily Activity.** Consistent with BMP NO-06, the hours of daily construction activities would be limited. Specifically, these limitations would coincide with the hour specified within the Riverside County Noise Ordinance (See BMP NO-05 above). **BMP NO-07: Sensitive Wildlife Protection.** Consistent with BMP NO-07			

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	and CMA LUPA-BIO-12, stationary noise sources would be limited to the extent feasible near wildlife species and their suitable habitat. Where infeasible to do so, the Applicant shall work with the BLM and CDFW to identify the affected species and/or habitat and achieve the appropriate noise reduction necessary or otherwise mitigate the effect to result in a less than significant noise impact to sensitive species and their habitat. Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			
Impact NOI-1 Impact NOI-4	MM NO-CEQA-2 Noise Reduction Measures. The Applicant shall ensure that noise reduction measures are implemented throughout construction activities in order to avoid or reduce noise impacts on sensitive receptors. The Applicant shall submit a monthly report to the BLM and the County reporting the effectiveness of the following measures using compliance with the Riverside County Noise Ordinance as a level of measurement for such effectiveness. The Applicant shall also notify all residents within one mile of the Project site at least 15 days prior to any ground-disturbing through mail, or by other effective means. The Applicant shall establish a phone number for use by the public to accompany the notification that will allow the public to report any undesirable noise conditions associated with the construction of the Project. If the telephone number provided is not staffed 24 hours a day, the Applicant shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This phone number shall be posted at the Project sites during construction where it is visible to passerby. If a complaint is filed regarding Project-related noise, the Applicant shall document, investigate, evaluate, and attempt to resolve all Project-related noise complaints. All complaints related to Project-noise shall be included in the monthly noise report. If the BLM and/or the County determines that noise limits are not sufficiently managed then the	The Applicant shall prepare a monthly noise report that will include any actions taken in order to be in compliance with the Riverside County Noise Ordinance. Additionally, the noise report shall include any noise complaints received and actions taken to resolve the complaint. The noise report shall be kept on file by the applicant and submitted monthly to the CPUC and BLM.	The noise reduction measures shall be implemented throughout construction activities.	The Applicant shall be responsible for ensuring that the noise reduction measures are implemented throughout construction activities.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Applicant shall work with the BLM, County, and affected residents to achieve the necessary reduction or otherwise mitigate the effect beyond the measures that are included below. The measures below include noise reduction features, limits to construction traffic as it relates to noise, measure to reduce construction vehicle use, and measures to limit construction staging and material laydown areas. **Effectiveness of Noise Reduction Features**. Consistent with APM NO-2, the Applicant shall ensure that the chosen construction contractor use equipment that includes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. Additionally, the Applicant shall ensure that the chosen contractor maintains all construction equipment in good working order to avoid unnecessary rattling of loose parts. These noise reduction features shall be utilized throughout construction activities and will reduce unnecessary noise impacts from construction equipment. **Construction Traffic**. The Applicant shall ensure that the chosen contractor routes construction traffic away from residences and schools by taking alternate routes. If residences and schools cannot be avoided during construction the Applicant shall inform the residents and/or schools affected no less than five days prior to construction and work with residents and local schools to minimize timing and duration of construction noise. Possible measures for reducing noise from construction traffic near residences and/or schools may include timing of construction routes or adding noise barriers around areas that may be sensitive to construction traffic. **Construction Vehicle Use.** The Applicant shall ensure that the chosen contractor limits unnecessary construction vehicle use and idling times throughout construction activities. This shall include turning off vehicles			

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	that are not in use, or idling, consistent with APM AQ-02 and limit the number of vehicles in use to the minimum amount required in order for completion of construction activities. **Construction Staging and Material Laydown Areas.** The Applicant shall ensure that the construction staging and material laydown areas be located away from noise sensitive receptors to avoid concentrated and prolonged exposure to noise form construction activities. Where construction staging and laydown areas cannot avoid sensitive receptors, the Applicant shall inform the sensitive receptor(s) no less than one week prior to the start of construction activities and work with the sensitive receptor(s) to provide noise reducing methods such as noise barriers. Standards for Success: Construction noise is maintained at a less than significant level throughout construction activities and noise complaints are minimized and addressed accordingly throughout construction activities.			
Public Services and Utilities				
Impact PUSVC-1	**APM HAZ-01: Hazardous Substance Control and Emergency Response.** DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as	Review adequacy of and implementation of hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project.	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	applicable. • Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. • All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following: • Proper disposal of potentially contaminated soils. • Establishing site-specific buffers for construction vehicles and equipment near sensitive resources. • Emergency response and reporting procedures to address hazardous material spills. • Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit. DCRT would complete its Emergency Action Plan Form as part of Project tailgate meetings. The purpose of the form is to gather emergency contact			

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	numbers, first aid location, work site location, and tailgate information.			
Impact PUSVC-1	**BMP PH&S-01.** Portable toilets would be provided at work sites to assure that adequate facilities are available for the duration of the Project and potential exposure to human waste is avoided.	Confirm portable toilets are provided on construction sites.	Construction	The Applicant
Impact PUSVC-1	**APM TT-01: Traffic Coordination**. Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project.	Confirm Traffic and Transportation Management Plan is implemented.	Pre-construction Construction	The Applicant
Impact PUSVC-1	**BMP PH&S-02.** A Fire Prevention Plan would be developed for the Project.	Conform implementation of a Fire Prevention Plan	Pre-construction Construction	The Applicant
Impact PUSVC-1 Impact PUSVC-5	**BMP MISC-02.** All cleared and graded material to be removed from the Project area would be disposed of in compliance with local ordinances.	Verify construction materials are removed in compliance with local ordinances.	Construction	The Applicant
Impact PUSVC-1	**CMA DFA-VPL-BIO-FIRE-1**. Implement the following standard practice for fire prevention/protection: Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum, these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.	Verify site specific fire prevention/protection actions are implemented.	Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact PUSVC-1	MM HAZ-CEQA-1 Implement Hazards and Hazardous Materials Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.8.2 and 2.8.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to hazards and hazardous materials. These APMs, BMPs, and CMAs include; APM HAZ-01, APM TT-01, APM WQ-01, APM HAZ-02, BMP PH&S-02, APM WQ-02, BMP HAZ-03, APM WQ-03, BMP HAZ-04, CMA LUPA-SW-6, CMA LUPA-SW-7, CMA LUPA-BIO-9, CMA DFA-VPL-BIO-FIRE-1. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM TT-01: Traffic Coordination.** As discussed in this APM, a Traffic, Transportation, and Access Management Plan would be developed for the Project. The details of this Traffic, Transportation, and Access	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Management Plan, as well as the correlation with a Congested Area Plan, are further discussed under MM TRANS-CEQA-2. **APM HAZ-02: Fire Avoidance and Suppression, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1.** As discussed in APM HAZ-02, BMP PH&S-02, and CMA DFA-VPL-BIO-FIRE-1, a Fire Prevention Plan shall be developed and implemented for the Project throughout construction and operation and maintenance. The Applicant shall develop a Project Fire Prevention Plan in consultation with the appropriate local fire agencies at least 30-days prior to the start of construction activities. The Plan shall cover the construction and operations/maintenance phases of the Project. The Applicant shall monitor Project-related activities to ensure implementation and effectiveness of the Plan. The final Plan will be approved by the consulted fire agencies prior to the initiation of construction activities and shall be implemented during all Project-related activities by the Applicant. Information contained in the Plan and location of fire-suppression materials and equipment shall be included as part of the Worker Environmental Awareness Program discussed in APM BIO-01. Successful implementation of this Plan shall result in a less than significant impact to the potential for construction-related fires. At minimum, the Plan shall include the following: Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, hot work restrictions, and timing of vegetation treatment or maintenance. Where necessary, vegetation management or clearing necessary to mitigate fire risk shall supersede other measures for vegetation protection and avoidance. Applicable permitting, compensation, and mitigation resulting from such activity shall be the responsibility of the Applicant.			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Proper use of construction, maintenance, and decommissioning equipment. Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days. Fire coordinator and fire patrol roles and responsibilities. Worker training for fire prevention, initial attack firefighting, and fire reporting. Emergency fire suppression equipment/tools inventory and maintenance. Emergency communication, response, and reporting procedures. Coordination with local fire agencies to facilitate emergency access through the Project site. Emergency contact information. Compliance with applicable wildland fire management plans and policies established by state and local agencies. Other information as required by responsible and consulted agencies. **Responsible Party:** The Applicant shall develop the Fire Prevention Plan and ensure that it is implemented throughout construction activities. **Timing:** The Applicant shall develop the Fire Prevention Plan at least 30-days prior to the start of construction activities. The Fire Prevention Plan shall be implemented throughout all construction activities. **Mitigation Monitoring and Reporting Program:** The Applicant shall ensure that the information in the Fire Prevention Plan is included in the Worker Environmental Awareness Program. Documentation of any Red Flag Warnings or High to Extreme Fire Danger days shall be			

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	kept on file and submitted to the applicable local fire agencies as well as the BLM and CPUC. **Standards for Success:** Construction impacts related to fires is reduced to a less than significant level and no fires are started as a result of construction activities. **BMP HAZ-04.** The Pesticide Use Proposal will be developed in accordance with MM VEG-CEQA-1 (See Section 2.4.6 above). Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			
Impact PUSVC-1	MM TRANS CEQA-2 Traffic, Transportation, and Access Management Plan. The Applicant shall develop a Traffic, Transportation, and Access Management Plan at least 30-days prior to the start of construction and work with the BLM and Riverside County to prepare and implement the Plan for roadways adjacent to and directly affected by the proposed Project facilities. The Traffic, Transportation, and Access Management Plan shall be submitted to the BLM and the County for approval prior to the start of ground disturbing activities and issuance of a County grading permit. The Traffic, Transportation, and Access Management Plan shall be implemented by the Applicant throughout all construction activities. The Traffic, Transportation, and Access Management Plan shall include, but not limited to, the following requirements: The Traffic, Transportation, and Access Management Plan shall conform to Part 6 (Temporary Traffic Control) of the California Manual on Uniform Traffic Control Devices; Identify truck routes designated by Riverside County and local jurisdictions	The Applicant shall monitor construction transportation and access to ensure that the Traffic, Transportation, and Access Management Plan is implemented successfully as documented in inspection logs.	The Traffic, Transportation, and Access Management Plan shall be prepared at least 30-days prior to the start of construction and shall be implemented throughout all construction activities.	The Applicant shall be responsible for ensuring that the Traffic, Transportation, and Access Management Plan is prepared and implemented throughout construction activities.

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	haul routes that minimize truck traffic on local roadways; Provide sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public right-of-was Scheduling truck trips outside the peak morning and evening commute hours; Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized; Implementing roadside safety protocols including advance “Road Wok Ahead” warning and speed control signs which shall be posted to reduce and provide safe traffic flow through the work zone; Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities and the locations of detours and lane closures. Maintain access for emergency vehicles within, and/or adjacent to roadways affected by construction activities at all times; Repairing and restoring adversely affected roadway pavements to their pre-construction condition; Damage will be documented by the Project Applicant and the applicable jurisdiction (i.e. Caltrans, County, or individual) will be notified within 24 hours. The Applicant will work with the jurisdiction affected and will repair the damage within 30 days. Coordination of individual traffic plans for the Project and nearby Projects; Coordination between the contractor and Riverside County in developing circulation and detour plans that include safety features (e.g. signage and			

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	flaggers). The circulation and detour plans shall address: Full and partial roadway closures; Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices; Bicycle detour plans, where applicable; Parking along arterial and local roadways; and Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites. Protocols for updating the Traffic, Transportation, and Access Management Plan to account for delays or changes in the schedules of individual projects The Traffic, Transportation, and Access Management Plan shall incorporate an access road siting and management plan, Congested Area Plan (pursuant to FAA regulations and APM TT-01), and a transportation plan for the transport and transmission tower components and equipment. Standards for Success: Traffic flow remains at acceptable levels, emergency access remains possible at all times, the public is reasonably notified of any road closures, delays, or lane restrictions, and the Project area remains in compliance with all applicable transportation goals, policies, and requirements.			
Impact PUSVC-1	MM PUB-CEQA-1 Implement Public Services and Utilities Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions: The APMs, BLM BMPs, and CMAs in Sections 2.15.2 and 2.15.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	during all ground disturbance and construction related activities to avoid or minimize Project related impacts to public services and utilities. These APMs, BMPs, and CMAs include; APM HAZ-01, BMP PH&S-01, APM TT-01, BMP PH&S-02, BMP MISC-02, and CMA-DFA-VPL-BIO-FIRE-1. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs, BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM TT-01: Traffic Coordination.** See revisions under MM TRANS-CEQA-2 (Section 2.17.6). **BMP PH&S-02.** See revisions under MM HAZ-CEQA-1 (Section 2.8.6). **Standards for Success:** Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.	these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.		APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of each measure.
Recreation				
Impact REC-1	**BMP REC-01: Alternative Access and Parking Signs.** Signs directing vehicles to alternative park access and parking would be posted in the event construction temporarily obstructs parking areas near trailheads.	Confirm appropriate signs are posted.	Pre-construction Construction	The Applicant

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Impact REC-1	**BMP REC-02: Recreation Users Signs.** Signs advising recreation users of construction activities and directing them to alternative trails or bikeways would be posted on both sides of all trail intersections or as determined through DCRT coordination, with the respective jurisdictional agencies. A schedule of construction activities would be posted near entrances to recreational areas as well as on the Project website. Signs would be installed near access roads notifying the public of construction activities in the area and the presence of permanent transmission facilities.	Confirm appropriate signs are posted.	Pre-construction Construction	The Applicant
Impact REC-1	**BMP REC-04: Alternate Route Signage.** Identify alternative routes (on existing roads and trails) of equal or greater standard and access to specially designated areas if roads, primitive roads, or trails used for recreation are temporarily closed or otherwise significantly affected. The alternate route(s) would be clearly identified on signage.	Confirm alternate route signage posted.	Pre-construction	The Applicant
Impact REC-1	**CMA DFA-REC-1.** Retain, to the extent possible, the identified recreation setting characteristics: physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls (see recreation setting characteristics matrix).	Confirm recreation setting characteristics are retained.	Design	The Applicant
Impact REC-1	**CMA DFA-REC-2.** Avoid large-scale ground disturbance within one-half mile of Level 3 Recreation facility footprint including route access and staging areas. If avoidance isn't practicable, the facility must be relocated to the same or higher standard and maintain recreation objectives and setting characteristics.	Confirm large-scale ground disturbance within one-half mile of Level 3 Recreation facility footprint.	Design	The Applicant
Impact REC-1	**CMA DFA-REC-4.** When considering large-scale development in DFAs, retain to the extent possible existing, approved recreation activities.	Confirm recreation activities retained.	Design	The Applicant
Impact REC-1	**CMA DFA-REC-5.** For displacement of dispersed recreation opportunities,	Confirm recreation	Design	The Applicant

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	commensurate compensation in the form of enhanced recreation operations, recreation facilities or opportunities will be required. If recreation displacement results in resource damage due to increased use in other areas, mitigate that damage through whatever measures are most appropriate as determined by the Authorized Officer.	compensation or mitigation determined by the Authorized Officer.	Post-construction	
Impact REC-1	**CMA DFA-REC-7.** If designated vehicle routes are directly impacted by activities (includes modification of existing route to accommodate industrial equipment, restricted access or full closure of designated route, pull outs, and staging areas to the public, etc.), mitigation will include the development of alternative routes to allow for continued vehicular access with proper signage, with a similar recreation experience. In addition, mitigation will also include the construction of an "OHV touring route" which circumvents the activity area and allows for interpretive signing materials to be placed at strategic locations along the new touring route, if determined to be appropriate by BLM.	Confirm implementation of alternative routes.	Pre-construction Construction	The Applicant
Impact REC-1	MM REC-CEQA-1 Implement Noise Applicant Proposed Measures, Best Management Practices, and Conservation and Management Actions. The APMs, BLM BMPs, and CMAs in Sections 2.16.2 and 2.16.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs, BMPs, and CMAs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to recreation. These APMs, BMPs, and CMAs include; BMP REC-01, BMP REC-02, BMP REC-03, BMP REC-04, CMA DFA-REC-1, CMA DFA-REC-2, CMA DFA-REC-4, CMA DFA-REC-5, CMA DFA-REC-7. If an APM, BMP, or CMA is subjective, such as containing text that states; "where appropriate," "where applicable," "where feasible," or similar language, the BLM and CPUC shall be consulted to determine the applicability of each measure prior to the disturbance of a covered resource. Compliance with APMs,	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine the applicability of

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	BMPs, and CMAs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM, BMP, and/or CMA conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **CMA DFA-REC-1.** Consistent with CMA DFA-REC-1, recreation setting characteristics would be retained to the extent feasible. If infeasible to do so, the Applicant shall work with the BLM and affected recreation users to mitigate the effect (i.e. placement of construction equipment, timing of construction, etc.). **CMA DFA-REC-4**. Consistent with CMA DFA-REC-4, large-scale development in DFAs shall retain approved recreation facilities, to the extent feasible. If infeasible to do so, the recreation facility shall be relocated to the same or higher standard and maintain recreation objectives and setting characteristics. **Standards for Success:** Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			each measure.
Traffic and Transportation				
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5	**APM TT-01: Traffic Coordination.** Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project. This plan would also include measures/protocols for	Verify emergency service providers are notified of construction activities. Verify implementation of a Traffic and	Pre-construction Construction	The Applicant

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
Impact TRANS-6	aviation, including helicopter use, coordination with local air traffic control, and a Congested Area Plan, pursuant to FAA regulations.	Transportation Management Plan.		
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	**BMP TT-03: Public Access, Marking, and Public Information for Closed Access.** The BLM would determine if new access routes would be retained for public access through approval of the Access Plan for the Project. If any routes of travel are not accessible and/or closed, Carsonite posts and signing would note the closures. Where routes are closed, kiosks with information panels would be posted providing public information.	Review adequacy of and implementation of Access Plan.	Pre-construction Construction	The Applicant
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	**BMP TT-04: Access Plan.** An Access Plan would be required to identify all routes where new disturbance and/or cross-country travel is proposed. Existing access would be used to the maximum extent practicable; new access would only be created when there is no other reasonable or practicable means of access.	Review adequacy of and implementation of Access Plan.	Pre-construction	The Applicant
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	**BMP TT-05: Using Open and Designated Routes.** The Access Plan for the Project would maximize use of open and designated access routes to the extent practicable.	Review adequacy of Access Plan.	Pre-construction	The Applicant
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	**BMP TT-06: Access Roads in Dune Habitat.** Access Roads would be unpaved and constructed at grade in dune habitat. No berms or application of rock would be allowed on the California public lands portion of the Project. Should adaptive access measures be required, those measures would be formulated in concert with the BLM and contained in the Access Management Plan (Appendix 2B)	Confirm access roads in dune habitat are addressed in Access Management Plan.	Pre-construction Construction	The Applicant
Impact TRANS-1	**BMP TT-07: Routes of Travel.** Routes of travel for the Project on BLM-managed lands outside established roadways would be limited to those routes	Confirm implementation	Pre-construction	The Applicant

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Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	on the approved Access Plan.	of Access Plan.	Construction	
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	**BMP TT-08: Prohibit Cross-Country Vehicle Use Outside Designated Work Areas.** Within Project boundaries, prohibit cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.	Ensure cross-country vehicle use outside of the wok area is prohibited.	Construction	The Applicant
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	**BMP TT-09: Repairs to Local Roads.** Local roads would be restored if road damage occurred as a result of Project construction.	Confirm local roads restored.	Post-construction	The Applicant
Impact TRANS-1 Impact TRANS-3 Impact TRANS-5 Impact TRANS-6	MM TRANS-CEQA-1 Implement Noise Applicant Proposed Measures and Best Management Practices. The APMs and BLM BMPs in Sections 2.17.2 and 2.17.3 above provide a suite of measures, practices, and actions that shall be implemented as part of the Project. APMs and BMPs shall be implemented prior to, or during all ground disturbance and construction related activities to avoid or minimize Project related impacts to recreation. These APMs, BMPs, and CMAs include; APM TT-01, APM TT-02, APM TT-03, APM TT-04, BMP TT-05, BMP TT-06, BMP TT-07, BMP TT-08, BMP TT-09. If an APM or BMP is subjective, such as containing text that states; “where appropriate,” “where applicable,” “where feasible,” or similar language, the BLM and CPUC shall be consulted to determine the applicability of each	The Applicant shall develop a weekly report that shall include all applicable APMs, BMPs, and CMAs and the related actions taken in order to be in compliance with these measures. These weekly reports shall be compiled and submitted to the BLM and CPUC monthly.	APMs, BMPs, and CMAs shall be implemented throughout construction activities.	The Applicant shall ensure that all APMs, BMPs, and CMAs are implemented during construction. If an APM, BMP, or CMA is subjective, the Applicant shall consult with the BLM and/or the CPUC to determine

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	measure prior to the disturbance of a covered resource. Compliance with APMs and BMPs shall be documented, and a weekly report shall be provided to the BLM and CPUC. The Applicant shall provide a synopsis of the weekly reports to the BLM and CPUC monthly. The report shall include a summary of the construction activities completed, a list of compliance actions and any remedial actions taken to correct any actions, and the status of ongoing mitigation efforts. For those instances (only) where an APM and/or BMP conflicts, or does not meet required specificity pursuant to CEQA, the following BMPs have been modified to meet CEQA requirements: **APM TT-01: Traffic Coordination.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan. **BMP TT-03: Public Access, Marking, and Public Information for Closed Access.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan. **BMP TT-04: Access Plan.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan. **BMP TT-05: Using Open and Designated Routes.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan. **BMP TT-06: Access Roads in Dune Habitat.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan. **BMP TT-07: Routes of Travel.** See MM TRANS-CEQA-2 below for the Traffic, Transportation, and Access Management Plan. **BMP TT-09: Repairs to Local Roads.** Repairs to local roads would occur in compliance with the Traffic, Transportation, and Access Management Plan developed and implemented for the Project (See MM TRANS-CEQA-			the applicability of each measure.

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	2 below). Standards for Success: Compliance with all applicable APMs, BMPS, and CMAs is achieved throughout construction of the Project.			
Impact TRANS-1 Impact TRANS-5 Impact TRANS-6	MM TRANS CEQA-2 Traffic, Transportation, and Access Management Plan. The Applicant shall develop a Traffic, Transportation, and Access Management Plan at least 30-days prior to the start of construction and work with the BLM and Riverside County to prepare and implement the Plan for roadways adjacent to and directly affected by the proposed Project facilities. The Traffic, Transportation, and Access Management Plan shall be submitted to the BLM and the County for approval prior to the start of ground disturbing activities and issuance of a County grading permit. The Traffic, Transportation, and Access Management Plan shall be implemented by the Applicant throughout all construction activities. The Traffic, Transportation, and Access Management Plan shall include, but not limited to, the following requirements: The Traffic, Transportation, and Access Management Plan shall conform to Part 6 (Temporary Traffic Control) of the California Manual on Uniform Traffic Control Devices; Identify truck routes designated by Riverside County and local jurisdictions haul routes that minimize truck traffic on local roadways; Provide sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public right-of-was Scheduling truck trips outside the peak morning and evening commute hours; Storing all equipment and materials in designated contractor staging areas	The Applicant shall monitor construction transportation and access to ensure that the Traffic, Transportation, and Access Management Plan is implemented successfully as documented in inspection logs.	The Traffic, Transportation, and Access Management Plan shall be prepared at least 30-days prior to the start of construction and shall be implemented throughout all construction activities.	The Applicant shall be responsible for ensuring that the Traffic, Transportation, and Access Management Plan is prepared and implemented throughout construction activities.

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	on or adjacent to the worksite, such that traffic obstruction is minimized; Implementing roadside safety protocols including advance "Road Wok Ahead" warning and speed control signs which shall be posted to reduce and provide safe traffic flow through the work zone; Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities and the locations of detours and lane closures. Maintain access for emergency vehicles within, and/or adjacent to roadways affected by construction activities at all times; Repairing and restoring adversely affected roadway pavements to their pre-construction condition; Damage will be documented by the Project Applicant and the applicable jurisdiction (i.e. Caltrans, County, or individual) will be notified within 24 hours. The Applicant will work with the jurisdiction affected and will repair the damage within 30 days. Coordination of individual traffic plans for the Project and nearby Projects; Coordination between the contractor and Riverside County in developing circulation and detour plans that include safety features (e.g. signage and flaggers). The circulation and detour plans shall address: Full and partial roadway closures; Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices; Bicycle detour plans, where applicable;			

IMPACT	APPLICANT PROPOSED MEASURE (APM), BEST MANAGEMENT PRACTICE (BMP), CONSERVATION AND MANAGEMENT ACTION (CMA), OR MITIGATION MEASURE (MM)	MONITORING REQUIREMENTS	TIMING	RESPONSIBLE AGENCY
	Parking along arterial and local roadways; and Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites. • Protocols for updating the Traffic, Transportation, and Access Management Plan to account for delays or changes in the schedules of individual projects The Traffic, Transportation, and Access Management Plan shall incorporate an access road siting and management plan, Congested Area Plan (pursuant to FAA regulations and APM TT-01), and a transportation plan for the transport and transmission tower components and equipment. Standards for Success: Traffic flow remains at acceptable levels, emergency access remains possible at all times, the public is reasonably notified of any road closures, delays, or lane restrictions, and the Project area remains in compliance with all applicable transportation goals, policies, and requirements.			

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Appendix 2 Tabular and Other Data for Chapter 2

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List of Tables

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2.1 INTRODUCTION

See Chapter 2.

2.2 PROPOSED ACTION AND ALTERNATIVES

2.2.1 ROW Actions

See Chapter 2.

2.2.2 Proposed Action

Table 2.2-1 provides descriptions of the individual Proposed Action segments.

Table 2.2-1 Proposed Action Segment Descriptions

SEGMENT NAME	DESCRIPTION	JURISDICTION MILES	TOTAL LENGTH
p-01	Begins at the Delaney Substation, heads north across I-10 and the Central Arizona Project (CAP), then heads generally west, crossing the CAP again and then paralleling the CAP, turning southwest, and crossing I-10 again. Crosses BLM-administered land, ASLD-managed land (Arizona state trust), and privately-owned land. Located within a utility corridor on BLM-administered land, skirts southern end of the Big Horn Mountains Wilderness Area.	BLM - 12.6 Private – 9.4 AZ State Trust – 4.7	26.7
p-02	From Segment p-01, heads southwest, across privately owned and Arizona state trust land.	Private – 0.5 AZ State Trust - 0.5	1.0
p-03	From Segment p-02, segment heads southwest across Arizona state trust and BLM-administered land within a utility corridor.	AZ State Trust – 1.1 BLM – 1.0	2.1
p-04	From Segment p-03, heads generally west through Arizona state trust and BLM-administered land, just north of Eagletail Mountains Wilderness Area.	BLM - 5.0 AZ State Trust – 0.5	5.5
p-05	From Segment p-04, segment continues generally west through BLM-administered land within a utility corridor.	BLM – 2.0	2.0
p-06	From Segment p-05, this segment continues generally west through BLM-administered land and then through the Kofa NWR. The segment is within a utility corridor on BLM-administered land that borders the Plomosa and New Water Mountains to the north and the Kofa Mountains to the south. It crosses through the northern portion of the Kofa National Wildlife Refuge (NWR).	BLM – 10.8 USFWS – 24.9	35.7

SEGMENT NAME	DESCRIPTION	JURISDICTION MILES	TOTAL LENGTH
p-07	From Segment p-06, this segment crosses BLM-administered land within a utility corridor, west of the Kofa NWR, heads west-northwest towards SR 95.	BLM – 2.2	2.2
p-08	From Segment p-07, heads west-northwest to and across SR 95 on BLM-administered land south of the BLM's La Posa Long Term Visitor Area (LTVA).	BLM – 0.6	0.6
p-09	From Segment p-08, heads west-northwest across SR 95 and through BLM-administered land within a utility corridor south of the BLM's LTVA; then aerially crosses the northeast corner and passes to the north of the Yuma Proving Ground (YPG).	BLM – 6.7 DOD – 0.2	6.9
p-10	From Segment p-09, traverses through BLM-administered land southeast of Copper Bottom Pass, which is narrow and contains steep rocky terrain.	BLM – 1.1	1.1
p-11	From Segment p-10, follows Copper Bottom Pass, southwest and upslope from the existing Devers to Palo Verde 500kV No. 1 (DPV1) line crossing BLM- and Reclamation-managed lands and within a utility corridor on BLM-administered land	BLM – 4.0 Reclamation – 0.1	4.1
p-12	From Segment p-11, heads southwest from Copper Bottom Pass through BLM- and Reclamation-managed lands.	Reclamation – 1.4 BLM – 1.1	2.5
p-13	From Segment p-12, heads southwest through BLM-administered land.	BLM – 3.5	3.5
p-14	From Segment p-13, heads southwest crossing BLM-administered land.	BLM – 0.9	0.9
p-15e	From Segment p-14, heads west-southwest through BLM-administered land and Arizona state trust land, then ends at the Colorado River.	BLM – 1.5 AZ State Trust – 1.3	2.8
p-15w	From Segment p-15e and the Colorado River, heads west. California State Lands Commission administers land submerged by the Colorado River; Colorado River itself is controlled by the State Water Resources Control Board (SWRCB) with Federal oversight.	Private – 6.6	6.6
p-16	From Segment p-15w, heads west across private agricultural land, up the bluff at the edge of the Colorado River floodplain, then onto BLM-administered land, turning northwest for a short distance.	Private – 4.2 BLM – 0.4	4.6

SEGMENT NAME	DESCRIPTION	JURISDICTION MILES	TOTAL LENGTH
p-17	From Segment p-16, heads northwest across a combination of BLM-administered land and private land along the southwest boundary of the Desert Quartzite Project. Would parallel the southwestern boundary of the proposed Desert Quartzite LLC solar facility.	Private – 0.8 BLM – 2.3	3.1
p-18	From Segment p-17, heads generally northwest toward the SCE Colorado River Substation southwest of Blythe, where it terminates. Crosses a combination of BLM-administered land and undeveloped private land. Would cross the proposed Bright Source Energy Sonoran West and Crimson Solar Facility.	Private – 1.6 BLM – 0.8	2.4

AZ = Arizona; CA = California

2.2.2.1 Amendment of the Yuma RMP

See Chapter 2.

2.2.2.2 Amendment of the CDCA Plan

See Chapter 2.

2.2.3 Alternatives and Subalternatives

Alternatives to the Proposed Action take the form of assorted segments within the Project Area that could be assembled to form a number of complete routes between the Delaney and Colorado River substations. In order to effectively evaluate route alternatives, the Action Alternative routes are divided where route segments intersect. Segments are generally numbered numerically east to west from the APS Delaney Substation to the SCE Colorado River Substation; north-south interconnects are generally numbered from north to south. A total of 45 Action Alternative segments were identified, in addition to the 19 Proposed Action segments in the Project Area. Alternative segments to the Proposed Action segments are identified as follows:

- The APS Delaney Substation segment carries the letter “d”;
- I-10 segments carry the letter “i”;
- The segment north of I-10 carries the letters “in”;
- Segments north of Quartzsite carry the letters “qn”;
- Segments south of Quartzsite carry the letters “qs”;
- Segments through the Copper Bottom Pass area carry the letters “cb”;
- East-west segments in California carry the letters “ca”;
- Cross connectors providing north-south connections roughly between the Proposed Action and east-west alternative segments carry the letter “x”; and

- Segments that break across the Colorado River carry the same segment numbering but are identified as “east” and “west”.

In addition, the route alternative segments were sited to address issues raised by land management agencies, local government, individuals, and organizations.

The following considerations were used to further evaluate alternatives:

- Would the alternative segment meet the underlying Project stated objectives for the proposed Project?
- Is the alternative segment consistent with the policy objectives for the management of the area (e.g., in conformance with land use plans) and if not, would an amendment be required?
- Is the alternative segment substantially similar in design or does it have substantially similar effects as an alternative segment that is already being analyzed?
- Would the alternative segment address and resolve resource conflicts and/or identified issues?
- Would the alternative segment cause fewer adverse environmental effects (fewer detrimental effects, less severe effects, or shorter-term effects) than the proposed route for at least some resources?

The Project Area is divided into four zones, where the segments within each zone are geographically similar and could be alternatives to each other:

- East Plains and Kofa Zone
- Quartzsite Zone
- Copper Bottom Zone
- Colorado River and California Zone

Zones were established based on the relationship of alternative segments to each other, geography, common resource issues, and interconnection points. By delineating zones, existing conditions and impacts common to all segments within a zone can be identified and then conditions and impacts specific to each zone and alternative segment can be identified. Alternative segments in a zone are alternatives to each other and can be organized into alternative routes through the zone. Alternative routes (usually made up of more than one segment) in each zone can then be connected with routes in other zones to form complete alternative routes for the Project.

All alternative segments carried forward for detailed analysis were found to meet the underlying Project stated objectives for the Project and to be consistent with the policy objectives for the management of the area. While many of the alternative segments were determined to address and resolve resources conflicts and/or identified issues, a number of alternative segments are being carried forward for detailed analysis to provide a broad range of available alternatives, should analysis in the EIS or other factors render some alternative segments infeasible.

Table 2.2-2 provides alternative segment descriptions by zone.

Table 2.2-2 Alternative Segment Descriptions

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
East Plains and Kofa Zone					
d-01	Leaving APS Delaney Substation, goes directly west through Arizona state trust and private land then turns northwest to parallel the Kinder Morgan natural gas line located in Arizona State land and within a utility corridor on BLM-administered land until it intersects with the Proposed Action.	p-01, p-02, and p-03	Avoids two crossings of I-10 and the CAP and joins with a utility corridor on BLM managed lands.	Private – 14.8 BLM – 7.3 Arizona State Trust – 3.1	25.2
i-01	From the intersection of Segments p-01 and p-02, heads west-northwest and parallels I-10 to the south, as it traverses private and Arizona state trust land, crossing the CAP two times. Portions would be within a utility corridor on BLM managed lands.	p-02, p-03, and a portion of p-04	In conjunction with other segments would avoid Segment p-06 crossing the Kofa NWR; and could be assembled with other segments to constitute a route within BLM utility corridors.	Arizona State Trust – 5.3 Private – 2.8 Reclamation – 0.1 BLM – 0.1	8.3
i-02	From the intersection of Segments i-01 and x-01, heads west-northwest and parallels I-10 to the south, as it traverses BLM-administered land, and would be wholly within utility corridors.	p-04, p-05	In conjunction with other segments would avoid Segment p-06 crossing the Kofa NWR; and could be assembled with other segments to constitute a route within BLM utility corridors.	BLM – 3.3	3.3
i-03	From the intersection of Segments i-02 and x-03, heads west-northwest and parallels I-10 to the south, as it traverses BLM-administered, private, and Arizona state trust land, crossing the CAP twice at the eastern end of the segment. It is wholly within utility corridors on BLM-administered land.	A portion of p-06 and x-04	In conjunction with other segments would avoid Segment p-06 crossing the Kofa NWR; and could be assembled with other segments to constitute a route within BLM utility corridors.	BLM –12.2 Arizona State Trust – 6.2 Private – 1.5	19.9

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
i-04	From the intersection of Segments i-03, x-04, and in-01, heads west-northwest and then generally due west as it parallels I-10 to the south, as it traverses BLM-administered land, it is wholly within utility corridors.	A portion of p-06 and in-01	In conjunction with other segments would avoid Segment p-06 crossing the Kofa NWR; and could be assembled with other segments to constitute a route within BLM utility corridors.	BLM – 10.5	10.5
in-01	From the intersection with Segments i-03 and i-04, in-01 would cross to the north side of and parallel I-10 on BLM-administered land within utility corridors.	i-04 and i-05	Would locate the transmission line north of I-10 protecting dominant scenic views of the New Water Mountain Wilderness and Kofa NWR to the south.	BLM – 13.9	13.9
x-01	From the intersection with Segment p-02, heads west then northwest paralleling the CAP to the south, ending just south of I-10. Crosses BLM-administered land and Arizona state Trust land. Within utility corridors on BLM managed lands at either end.	p-03 and p-04, i-01	Would follow the CAP and consolidate disturbance and avoid CAP crossings by Segment i-01. Would place the route farther away from the Eagletail Mountains Wilderness Area.	Arizona State Trust – 3.7 BLM – 1.0	4.7
x-02a	From the intersection with Segments i-01 and i-02, heads southeast crossing Arizona state trust land and a small portion of BLM-administered land. Not within a utility corridor.	p-04	In conjunction with a portion of Segment x-01, would provide an alternative cross-connection between the Proposed Action or Segment d-01 and segments within BLM utility corridors and avoids Segment p-06 crossing the Kofa NWR.	Arizona State Trust – 3.2 BLM – 0.1	3.2

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
x-02b	From the intersection with Segments p-03, d-01, and p-04, heads northwest crossing BLM-administered and Arizona state trust land. Begins within a utility corridor on BLM managed lands, but primarily occurs outside of one.	p-04	In conjunction with Segment x-02a, would provide an alternative cross-connection between the Proposed Action or Segment d-01 and segments within BLM utility corridors and avoids Segment p-06 crossing the Kofa NWR.	Arizona State Trust – 2.6 BLM – 0.8	3.4
x-03	From the intersection of Segments p-04 and p-05, heads northwest through BLM-administered land, terminating south of I-10. Begins and ends within utility corridors, but primarily outside of them.	x-01, x-02a, x-02b, and x-04	Would provide an alternative cross-connection between the Proposed Action and segments within BLM utility corridors and avoids Segment p-06 crossing the Kofa NWR.	BLM – 5.6	5.6
x-04	From the intersection with Segments p-05 and p-06, heads northwest through primarily BLM-administered land, terminating south of I-10. Begins and ends within utility corridors, but primarily outside of them. Crosses through a parcel of Arizona state trust land and the proposed Arizona Peace Trail.	x-01 through 03, i-03, and a portion of p-06	Would provide an alternative cross-connection between the Proposed Action and segments within BLM utility corridors and avoids Segment p-06 crossing the Kofa NWR in conjunction with other segments.	BLM – 21.6 Arizona State Trust – 1.1	22.7
Quartzsite Zone					
i-05	From the intersection of Segments i-04 and x-05, heads generally west and parallels I-10 to the south, as it traverses BLM-administered land, it is wholly within utility corridors.	p-07	In conjunction with other segments, could be assembled to constitute a route almost entirely within BLM utility corridors.	BLM – 2.8	2.8

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
qn-01	Segment that crosses I-10 at the intersection of Segments i-05 and qs-01, and in-01 and qn-02; within utility corridors, solely within BLM-administered land.	North-south portion of in-01	Would follow the existing WAPA 161kV transmission line and allow Segment in-01 to connect to Segment x-06 to avoid Quartzsite and generally parallel SR 95; or to segment qs-01 to skirt the south side of Quartzsite. Would also allow Segment i-05 to connect to Segment qn-02 to skirt Quartzsite on the north.	BLM – 0.6	0.6
qn-02	From the intersection with in-01 and qn-01, skirts to the north of Quartzsite, by traveling north, then west, then southwest. Crosses SR 95 and a utility corridor, and crosses I-10 at its western end. It begins and ends within utility corridors but is mostly outside them. Primarily within BLM-administered land but is within Arizona state trust land just west of the SR 95 crossing.	qs-01, qs-02, p-08, and p-09	Would skirt Quartzsite to the north by following the existing Western/ San Diego Gas & Electric (SDG&E) 161kV transmission line on the east and north. Avoids impacts to the northern portion of the LTVA (Segments qs-01 and qs-02).	BLM – 9.8 Arizona State Trust – 1.0	10.8

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
qs-01	From the intersection of i-05, qn-01, and x-06, heads slightly southwest of Quartzsite and within the extreme northern portion of the LTVA, ending at SR 95, within BLM-administered land. Partly within a BLM designated utility corridor.	p-08, qn-02	Would avoid Quartzsite by skirting to the southeast following the existing Western/SDG&E 161kV transmission line. In conjunction with qs-02, would be shorter than Segments qn-01 and qn-02. In addition to skirting Quartzsite, would allow a southern connection down to the Proposed Action or continue an east-west route south of I-10 within BLM utility corridors.	BLM – 3.1	3.1
qs-02	Heads slightly southwest of Quartzsite and within the extreme northwestern portion of the LTVA, beginning at SR 95, within BLM-administered land. Just south of I-10 turns westerly to parallel the south side of I-10. Partly within utility corridors on BLM managed lands. Western portion parallels I-10 to the south.	Portions of p-09 and qn-02	Would avoid Quartzsite by skirting to the southwest, generally following an existing pipeline route; but also skirting south of Q Mountain.	BLM – 4.8	4.8
x-05	From the intersection of Segments p-06 and p-07, heads north-northeast through BLM-administered land, east of the LTVA. Begins and ends within utility corridors but the segment is primarily outside of them.	x-06	Would provide an alternative cross-connection between the Proposed Action and segments within BLM utility corridors; avoids Segment p-06 crossing the Kofa NWR, Quartzsite, and the LTVA in conjunction with other segments.	BLM – 10.2	10.2

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
x-06	From the intersection of Segments p-07 and p-08, heads north-northeast through BLM-administered land, on the eastern boundary of the LTVA. Begins and ends within utility corridors but the segment is primarily outside of them.	x-05 and x-07	Would provide an alternative cross-connection between the Proposed Action and segments within BLM utility corridors; avoids Segment p-06 crossing the Kofa NWR, Quartzsite, and the LTVA in conjunction with other segments.	BLM – 9.2	9.2
x-07	From the intersection with p-08 and p-09, heads due north along SR 95, through a utility corridor on BLM-administered land.	x-05 and x-06	Would provide an alternative cross-connection between the Proposed Action and segments within BLM utility corridors; avoids Segment p-06 crossing the Kofa NWR. Would follow the existing Western/ SDG&E 161kV transmission line east of SR 95.	BLM – 7.7	7.7
Copper Bottom Zone					
cb-01	From the intersection of Segments p-09 and p-10, exits the utility corridor then turns west-northwest across BLM-administered land overtop Cunningham Peak near an existing communications site.	In conjunction with other segments, p-10, p-11, p-12, cb-02, and cb-03	Together with other segments, would avoid Copper Bottom Pass, as well as Segment cb-02 through Johnson Canyon.	BLM – 3.2	3.2
cb-02	From the intersection of Segments p-10 and p-11, exits the utility corridor, heads west-southwest through Johnson Canyon and the proposed Arizona Peace Trail. All within BLM-administered land.	In conjunction with other segments, p-11, cb-01, and cb-03	Together with other segments, would avoid Copper Bottom Pass, as well as Segment cb-01 over Cunningham Peak.	BLM – 2.2	2.2

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
cb-03	From the intersection of Segments p-10 and cb-02, heads northwest through Copper Bottom Pass, generally parallel to Segment p-11. Crosses BLM- and Reclamation-managed lands and CRIT land.	p-11	Would be within a utility corridor on BLM-administered land and partially within utility corridors. Would provide the needed separation from the existing DPV1 line, allowing compliance with CAISO requirements without requiring construction upslope of the existing DPV1.	BLM – 2.2 CRIT – 2.0 Reclamation – 0.1	4.3
cb-04	From the intersection of Segments cb-01 and cb-02, heads southwest through primarily BLM-administered land, ending in Reclamation-managed land.	In conjunction with portions of p-11, p-12, and cb-03	Together with other segments avoids Copper Bottom Pass and crossing CRIT land.	BLM – 1.7 Reclamation – 0.2	1.9
cb-05	From the intersection of Segments cb-04 and cb-06, begins in Reclamation-managed land, heads southwest through BLM-administered land then turns west to avoid interference with the YPG. Crosses the proposed Arizona Peace Trail and ends within a utility corridor on BLM managed lands.	p-13	Together with other segments avoids Copper Bottom Pass and interference with the YPG. While the segment would cross the proposed Arizona Peace Trail, it would avoid following the trail along Segment p-13.	BLM – 3.9 Reclamation – 0.5	4.4
cb-06	From the intersection of Segments cb-04 and cb-05, begins in Reclamation-managed land, heads northwest through BLM-administered land then turns slightly northwest to where it intersects with the Proposed Action. Ends within a utility corridor on BLM-administered land.	In conjunction with other segments, p-11, p-12, cb-03	Together with other segments avoids Copper Bottom Pass and crossing CRIT land.	BLM – 1.3 Reclamation – 0.6	1.9

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
i-06	From the intersection with qs-02 and qn-02, heads slightly southwest and parallels I-10 to the south as it traverses BLM- and Reclamation-managed land, CRIT, and Arizona state trust land. It is within a BLM utility corridor.	p-09 through 11; cb-01 through 03	In conjunction with other segments would avoid Copper Bottom Pass, Johnson Canyon, and Cunningham Peak; and could be assembled with other segments to constitute a route almost fully within BLM utility corridors.	BLM – 3.9 Arizona State Trust – 1.7 CRIT – 1.4 Reclamation – 0.2	7.2
i-07	From the intersection with Segments i-06 and x-08, heads southwest toward the Colorado River and parallels I-10 to the south as it traverses Reclamation-managed land and Arizona state trust land.	p-12 through 14; and portions of p-15e and cb-10	Could be assembled with other segments to constitute a route almost fully within BLM utility corridors.	Reclamation – 5.1 Arizona State Trust – 1.2	6.3
x-08	From the intersection with Segments p-11, p-12, and cb-03, heads north-northwest to connect to the alternative segments paralleling I-10 within BLM utility corridors at the junction of Segments i-06 and i-07. Crosses Reclamation-managed land.	x-05, x-06, and x-07	Would provide an alternative cross-connection between the Proposed Action and segments within BLM utility corridors; could avoid Copper Bottom Pass, Johnson Canyon, or CRIT land in conjunction with other segments.	Reclamation – 1.3	1.3
Colorado River and California Zone					
cb-10	From Segment p-14, heads west through BLM-administered land and Arizona state trust land, then ends at the Colorado River.	A portion of p-15e	Offers an alternative to the Proposed Action to connect to a more northern east-west route comprised of Segment ca-01. This segment includes land submerged by the Colorado River.	Arizona State Trust – 1.0 BLM – 0.9	1.9

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
i-08s	From the intersection with Segment i-07, heads west crossing Reclamation-managed land, Arizona state trust land that is farmed, and ends at the Colorado River.	p-15e and cb-10	Would avoid the Colorado River floodplain in proximity to the I-10 crossing where the western bank of the river is heavily developed, while also avoiding the backwater areas that are important to endangered fish species.	Reclamation – 0.9 Private – 0.2 Arizona State Trust – 0.2	1.3
ca-01	From the intersection of Segments x-10 and x-11, heads west across private agricultural land following an existing canal and two-track.	p-15w and ca-05	Offers an alternative to the Proposed Action crossing agricultural land that would not impact residences or other structures (as compared to Segment ca-05).	Private – 6.7	6.7
ca-02	From the intersection of Segments x-12 and x-13, headed west crossing private agricultural land following an existing canal, until reaching the western edge of the Colorado River floodplain, then continued west, ascending a bluff onto BLM-administered land.	p-16, ca-06, and i-09b	Mostly follows existing canal, until ascending a bluff onto BLM-administered land. Would be partially within a utility corridor and extend the ca-01 route west, as a shorter alternative to that portion of the Proposed Action route.	Private – 2.8 BLM – 0.6	3.4
ca-04	From the intersection with Segment i-08s, heads west crossing private land that is farmed.	p-15e and cb-10	Would avoid the Colorado River floodplain in proximity to the I-10 crossing where the western bank of the river is heavily developed, while also avoiding the backwater areas that are important to endangered fish species.	Private – 0.4	0.4

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
ca-05	From the intersection of Segments x-09 and x-10, heads west across private agricultural land interspersed with residences along Seeley Road.	ca-01 and a portion of p-15w	Offers an east-west route across private land that, in conjunction with other segments, could provide a route within BLM utility corridors south of I-10 avoiding Blythe.	Private – 6.6	6.6
ca-06	From the intersection of Segments ca-05 and x-12, heads west across private agricultural land interspersed with residences along Seeley Road, entering BLM-administered land on the western end. Crosses the approved Blythe Mesa Solar Project.	p-16	Offers an east-west route across private land that, in conjunction with other segments, could provide BLM utility corridor route south of I-10 avoiding Blythe.	Private – 2.6 BLM – 0.2	2.8
ca-07	From its intersection with Segment x-15, heads northwest then west crossing primarily BLM-administered land along a BLM utility corridor southern boundary, then bends west-northwest to connect at the intersection with Segment ca-09.	Portion of p-17	Offers an east-west route that, in conjunction with other segments, could provide a route within BLM utility corridors south of I-10 avoiding Blythe.	BLM – 2.5 Private – 0.5	3.0
ca-09	From the intersection with Segment ca-07, heads west along BLM-administered land in BLM utility corridors and alongside the proposed Desert Quartzite Solar Project. It is also adjacent to the south edge of the existing Blythe Mesa Solar Project.	Portions of p-17 and p-18	Offers an east-west route that extends the Seeley Road route west to connect at the substation within the southern boundary of a BLM utility corridor.	BLM – 1.6 Private – 1.0	2.6

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
x-09	From the intersection with Segment ca-04, heads south through private, rural agricultural land west of the Colorado River. Not in utility corridors.	Portion of x-11	Would connect segments i-08 or ca-04 within a BLM utility corridor route to other east-west alignments south of I-10.	Private – 0.8	0.8
x-10	From the intersection with Segments x-09 and ca-05, heads south through private agricultural land west of the Colorado River. Not in utility corridors.	x-12, x-15, and p-18	Would connect Segment x-09 with Segments x-11 and cb-10, allowing a BLM utility corridor route along I-10 to connect down to other east-west routes, avoiding Blythe or Copper Bottom Pass.	Private – 1.3	1.3
x-11	From the intersection with Segment cb-10, heads north, then northwest through rural agricultural land.	A portion of p-15e	Offers an alternative to the Proposed Action to connect to a more northern east-west route comprised of Segment ca-01.	Private – 2.1	2.1
x-12	From the intersection with Segments ca-05 and ca-06, heads south from the 14th Avenue alignment across private agricultural land west of SR 78, then heads south following a canal and two-track crossing private land.	x-10, x-15, and portions of p-17 and p-18	Would connect the east-west route comprised of ca-01 north to segments that would comprise a BLM utility corridor route. It would avoid cultural resources potentially along x-15, x-16 or p-17 and p-18; and connect south to other east-west segments.	Private – 1.3	1.3
x-13	From the intersection with x-12 and ca-01, heads south generally following a canal and two-track crossing private land.	cb-10, x-16, p-17	Would connect Proposed Action north to segments that would comprise a BLM utility corridor route; and avoid cultural resources potentially along x-15, x-16 or p-17 and p-18.	Private – 2.0	2.0

SEGMENT	DESCRIPTION	ALTERNATIVE TO	BENEFIT	JURISDICTION MILES	TOTAL LENGTH (MILES)
x-15	From the intersection with ca-06 and ca-07, heads southwest across BLM-administered land a utility corridor.	x-12 and p-18	Would provide a cross-connection between the Seeley Road alignment and other east-west routes south of Blythe that would follow or possibly be within a utility corridor. Avoids cultural resources along p-17 and p-18.	BLM – 1.4	1.4
x-16	From the intersection with Segment x-15 and ca-02, heads southwest across BLM-administered and private land within a utility corridor and intersects with Segment p-16. It forms the southeastern boundary of the approved Desert Quartzite solar project.	x-13 and p-17	Would provide a cross-connection between the east-west canal alignment (ca-01 through 03) and other east-west routes south of Blythe that would follow or possibly be within a BLM utility corridor. Avoids cultural resources along p-17 and p-18.	BLM – 2.0 Private – 0.3	2.3
x-19	From Segment ca-09, heads south along BLM-administered land starting at the southern edge of a BLM utility corridor and, continuing southwest past the Colorado River Substation, then turning west to connect with the Proposed Action route along Segment p-18, to enter and terminate at the southern end of the SCE Colorado River Substation. Crosses the approved Bright Source Energy Sonoran West Crimson Solar Facility.	Portion of x-15	Would connect the east-west route either immediately south of I-10 along the 14th Avenue alignment or the Seeley Road alignment to the SCE Colorado River Substation.	BLM – 1.0	1.0

2.2.3.1 Alternative 1: I-10 Route

Figures 2.2-1 through 2.2-3 (Appendix 7) show the five subalternatives to Alternative 1.

Alternative 1 would include the segments listed in Table 2.2-3.

Table 2.2-3 Alternative 1 Segments

SEGMENT TYPE	EAST PLAINS AND KOFA ZONE	QUARTZSITE ZONE	COPPER BOTTOM ZONE	COLORADO RIVER AND CALIFORNIA ZONE
Proposed	p-01	None	None	None
Alternative	i-01 through i-04	i-05, qs-01 and qs-02	i-06 and i-07	i-08s, ca-04. ca-05, ca-06, ca-07, ca-09, x-09 and x-19

The following subalternatives (Table 2.2-4) would also meet the objectives of Alternative 1.

Table 2.2-4 Subalternatives Under Alternative 1

SUBALTERNATIVE	SUBALTERNATIVE SEGMENTS	ALTERNATIVE ROUTE SEGMENTS REPLACED	ZONE
1A	p-02, p-03, x-02a and x-02b	i-01	East Plains and Kofa
1B	p-02, x-01, and x-02a	i-01	East Plains and Kofa
1C	in-01	i-04, i-05 (must be combined with 1D)	East Plains and Kofa
1D	qn-01	N/A (must be combined with 1C)	Quartzsite
1E	x-10, ca-01, and x-12	ca-05	Colorado River and California

Segment in-01 is the only segment located in the Lake Havasu FO. A portion of this segment crosses VRM Class II designated lands and would not conform to class objectives. An RMP amendment would be required to change the portion of this segment designated VRM Class II to Class IV within the BLM utility corridor crossing VRM Class II lands.

2.2.3.2 Alternative 2: BLM Utility Corridor Route

Figures 2.2-4 through 2.2-6 (Appendix 7) show the five subalternatives to Alternative 2. Alternative 2 would include the segments listed in Table 2.2-5.

Table 2.2-5 Alternative 2 Segments

SEGMENT TYPE	EAST PLAINS AND KOFA ZONE	QUARTZSITE ZONE	COPPER BOTTOM ZONE	COLORADO RIVER AND CALIFORNIA ZONE
Proposed	p-01	None	p-09 through p-14	p-15e, p-15w, p-16
Alternative	i-01 through i-04	i-05, qs-01, x-07	None	x-15 and x-16, ca-07, ca-09, x-19

The following subalternatives (Table 2.2-6) would also meet the objectives of Alternative 2, except Subalternative 2D would not avoid CRIT land.

Table 2.2-6 Subalternatives Under Alternative 2

SUBALTERNATIVE	SUBALTERNATIVE SEGMENTS	ALTERNATIVE ROUTE SEGMENTS REPLACED	ZONE
2A	d-01, x-02a, x-02b	p-01, i-01	East Plains and Kofa
2B	p-02, p-03, p-04, x-03	i-01, i-02	East Plains and Kofa
2C	cb-02, cb-04, cb-06	p-11, p-12	Copper Bottom
2D	cb-03	p-11	Copper Bottom
2E	x-13, ca-02	p-16, x-16	Colorado River and California

2.2.3.3 Alternative 3: Avoidance Route

Figures 2.2-7 through 2.2-10 (Appendix 7) show the twelve subalternatives to Alternative 3.

Alternative 3 would include the segments listed in Table 2.2-7.

Table 2.2-7 Alternative 3 Segments

SEGMENT TYPE	EAST PLAINS AND KOFA ZONE	QUARTZSITE ZONE	COPPER BOTTOM ZONE	COLORADO RIVER AND CALIFORNIA ZONE
Proposed	p-01 through p-04	p-07 and p-08	p-09 and p-14	None
Alternative	i-03 and i-04, x-03	x-05	cb-01, cb-04, cb-05	ca-01, ca-06, ca-07, ca-09; cb-10, x-11, x-12, x-19

The following subalternatives (Table 2.2-8) would also meet the objectives of Alternative 3.

Table 2.2-8 Subalternatives Under Alternative 3

SUBALTERNATIVE	SUBALTERNATIVE SEGMENTS	ALTERNATIVE ROUTE SEGMENTS REPLACED	ZONE
3A	d-01, x-02a, x-02b, and i-02	p-01, i-01	East Plains and Kofa
3B	i-01 and i-02	p-02, p-03, p-04, x-03	East Plains and Kofa
3C	p-05 and x-04	x-03, i-03	East Plains and Kofa
3D	in-01	i-04 (must be combined with 3F and 3G, or 3H)	East Plains and Kofa
3E	qs-01 and x-07	x-06 (must be combined with 3D and 3G or 3J)	Quartzsite
3F	x-06	x-05 (must be combined with 3D and 3G or 3J)	Quartzsite
3G	qn-01	N/A (must be combined with 3D, 3E, 3F, 3H, and/or 3J)	Quartzsite
3H	qn-02	N/A (must be combined with 3D and 3L)	Quartzsite
3J	i-05	N/A (must be combined with 3E, 3F, or 3G and 3H)	Quartzsite
3K	p-10 and cb-02	cb-01	Copper Bottom
3L	i-06, x-08, p-12, and p-13	p-09, p-10, p-11 (must be combined with 3D and 3H; or 3J, 3G and 3H)	Copper Bottom
3M	p-15e, p-15w, and x-13	cb-10, x-11, ca-01	Colorado River and California

2.2.3.4 Alternative 4: Public Lands Emphasis Route

Figures 2.2-11 through 2.2-14 (Appendix 7) show the fourteen subalternatives to Alternative 4.

Alternative 4 would include the segments listed in Table 2.2-9.

Table 2.2-9 Alternative 4 Segments

SEGMENT TYPE	EAST PLAINS AND KOFA ZONE	QUARTZSITE ZONE	COPPER BOTTOM ZONE	COLORADO RIVER AND CALIFORNIA ZONE
Proposed	p-04 and p-05	p-08	p-09, p-10, p-13, p-14	p-15e and p-15w
Alternative	d-01, in-01, x-04	qn-01, x-06	cb-02, cb-04, cb-06	ca-06, ca-07, ca-09; x-12, x-13, x-19

The following subalternatives (**Table 2.2-10**) would also meet the objectives of Alternative 4.

Table 2.2-10 Subalternatives Under Alternative 4

SUBALTERNATIVE	SUBALTERNATIVE SEGMENTS	ROUTE SEGMENTS REPLACED	ZONE
4A	p-01, p-02, and p-03	d-01	East Plains and Kofa
4B	x-03 and i-03	p-05, x-04	East Plains and Kofa
4C	i-04	N/A (must be combined with 4J or 4D)	East Plains and Kofa
4D	x-05 and p-07	i-05, x-06 (must be combined with 4C)	Quartzsite
4E	cb-01	p-10, cb-02	Copper Bottom
4F	cb-05	cb-06, p-13	Copper Bottom
4G	p-11 and p-12	cb-02, cb-04, cb-06	Copper Bottom
4H	x-08 and i-07	N/A (must be combined with p-11 and 4K)	Copper Bottom
4J	i-05	N/A (must be combined with 4C)	East Plains and Kofa
4K	i-08s, ca-04, x-09	N/A (must be combined with 4H and 4N)	Colorado River and California
4L	cb-10 and x-11	N/A (must be combined with 4M)	Colorado River and California
4M	ca-01	p-15w (must be combined with 4L)	Colorado River and California
4N	x-10	N/A (must be combined with 4H, 4K, and 4M)	Colorado River and California
4P	p-16, p-17, and p-18	x-13, x-12, ca-06, ca-07, ca-09, x-19	Colorado River and California

2.2.3.5 No Action Alternative

See Chapter 2.

2.2.4 Agency Preferred Alternative

Under the Agency Preferred Alternative, the BLM would approve a total of 79.5 miles of 200-foot wide ROW within existing designated utility corridors along the following segments:

- p-01
- i-01 through i-04
- x-05
- p-07 through p-16
- x-15 and x-16
- ca-07 and ca-09; and
- x-19.

Along the Agency Preferred Alternative route, self-supporting structures would be required for the following segments in areas of high OHV use where structures with guy lines would be replaced with self-supporting (no guy lines) four-legged tangent structures under MM-REC-02:

- i-04;
- x-05; and
- p-07 through p-13.

The Agency Preferred Alternative is comprised of segments to:

- Emphasize the use of BLM utility corridors;
- Place the transmission line approximately 1 mile east of the LTVA by utilizing Subalternative 4D, thus minimizing impacts to recreational users of the LTVA;
- Consolidate development and disturbance with existing disturbance, such as along portions of the already impacted DPV1 transmission line route and I-10 corridor;
- Avoid the Town of Quartzsite;
- Avoid the Kofa NWR;
- Avoid Johnson Canyon;
- Avoid the CRIT Reservation;
- Avoid the Ehrenberg Sandbowl area;
- Avoid residential and other development east and south of Blythe;
- Consolidate development along the existing DPV1 transmission line route across private lands in California;

- Avoid the culturally sensitive area in the vicinity of the Mule Mountains southwest of Blythe; and
- Minimize impacts to VRM Class II areas, as the majority of the route would cross VRM Class III & IV-designated BLM-administered public land.

2.2.5 Proposed Facilities, Infrastructure, and Construction

2.2.5.1 Preconstruction and Construction Activities Overview

Preconstruction Activities

DCRT intends to refine the design of the Project during the Federal and state approval processes. Final engineering surveys would determine the exact locations of structures, access roads, etc. prior to construction. Access roads and structure locations would be designed based on topographic information, aerial imagery, and other relevant information in order to reduce overall impacts to resources. Results of the pedestrian cultural survey, biological surveys, and visual impacts would also be considered when micrositing the Project structures. Technical and power system studies would determine items such as conductor sizes, substation arrangements, communications needs, and similar needs. Due to the broad scope of construction, the varied nature of the construction activities, and the geographic diversity of the Project Area, DCRT envisions that multiple construction work areas would be simultaneously utilized in different areas to complete Project work within the projected timeframe and in accordance with industry performance standards.

Preconstruction activities, including preconstruction environmental surveys, materials procurement, design, contracting, ROW acquisition, and permitting efforts would all influence the Project schedule and timing of construction activities.

DCRT would obtain a ROW through a combination of ROW grants and easements negotiated between DCRT and various Federal, state, and local governments; private companies; and private landowners. During the early stages of the Project, DCRT would coordinate with property owners and land agencies to obtain right-of-entry permissions for surveys.

Environmental Safety and Training

All construction and maintenance workers would be required to participate in an environmental education program prior to beginning work on the Project. This program would be developed by DCRT prior to the start of construction and would be submitted to BLM for review and approval prior to implementation. At a minimum, the program would include the following topics: biological, cultural, paleontological, and other environmental requirements and protection measures.

After participating in the training program, each trained worker would receive a card and hardhat sticker, indicating they are cleared for access to the ROW. The construction contractor(s) would provide the BLM's CIC with an updated list of those workers who have received the training. It is the responsibility of the construction contractor(s) to ensure that all construction personnel have received the required training. A noncompliance violation would be issued if a worker is found working on the ROW without the required environmental training.

In addition, the construction contractor(s) would be responsible for providing safety training as required. All construction, operation, maintenance, and decommissioning activities would be required to comply with Occupational Safety and Health Administration regulations. The CIC would be notified by the construction contractor(s) of any accidents that occur on public land during construction of the Project.

All construction personnel working in California would be required to complete a 4-hour Leave No Trace awareness course.

General Construction Management and Controls

Vegetation Management
Prior to beginning construction of the BLM selected route, field surveys for noxious weeds, protected plants, and habitat for special status species would be conducted within the construction work limits. Vegetation removal in short-term disturbance areas would be conducted in accordance with IB-2012-097, Cutting, Removal, or Damage of Timber, Trees, or Vegetative Resources. As specified in the Habitat Reclamation and Monitoring Plan (Appendix 2B, Section 2B.10), protected plants would be salvaged on Arizona state trust lands as required under the Arizona Native Plant Law (Arizona Revised Statutes §§ 3-901 et seq.) and on other lands as directed by the BLM and other landowners and regulatory agencies. Temporary plant nurseries would be established along or near the transmission line ROW to maintain salvaged plants until they can be used for the revegetation of disturbed areas. The Vegetation Management Plan (Appendix 2B, Section 2B.11) describes vegetation management and control measures to be applied as needed during construction, operations, maintenance, and decommissioning of the Project.

Weed Management
Throughout construction of the Project, invasive and noxious weeds would be monitored and controlled as prescribed in the Noxious Weed Control Plan (Appendix 2B, Section 2B.11). Other strategies would be implemented to prevent, monitor, and control the spread of invasive and noxious weeds in compliance with BLM's policy of preventing the spread of these species. These strategies are intended to minimize the introduction of invasive and noxious weeds to the ROW. In general, all workers would attend training on identification and control of weeds. Prior to entering the work site, all vehicles, earthmoving, and excavation equipment would be inspected and cleaned of any extraneous soil and debris. Only certified weed-free straw, seed, and other materials would be used during reclamation and for other purposes. If invasive species were detected in locations disturbed during construction, immediate action would be taken to remove the invasive species from the affected area and to prevent them from spreading. Any use of herbicides would be done in accordance with a Vegetation Management Plan, and only BLM-approved herbicides applied in a manner consistent with regulations and label directions would be used.

Lighting
Given the extreme heat in summer and the short construction schedule, construction would include night work. Therefore, lighting would be used at worksites as necessary to maintain safe working conditions. Limited lighting in the material storage yards would facilitate earlier start times and improve overall safety.

Blasting
A Blasting Plan has been developed for the Project and would be included in the final POD prior to the Notice to Proceed (NTP). Blasting would be required for areas where substantial hard rock is encountered and not able to be removed via heavy excavators. Blasting could be required for the installation of structure footings or to construct access roads. Blasting is not anticipated in sedimentary and surficial deposits, or in California.

Implosive sleeves may be used on the Project during wire stringing. Terrain and accessibility were a major consideration along with proximity to dwellings, gas lines, and existing transmission lines when deciding to use implosive fittings. Where topography allows compression sleeves would be implemented, while implosive fittings would be utilized in steep mountainous terrain or long spans. Implosive sleeves would be used throughout the BLM land instead of sleeving sites due to mountainous terrain. These sleeves would splice together where one wire wheel ends and the other begins. Implosive sleeves may be used at the puller/tensioner site and then pull the wire through. If an implosive sleeve needs to be used midspan, the wire would be lowered, and a qualified handler of the implosive sleeves would hike out to the span and attach the sleeve and detonation device and wiring.

Topsoil Management
Temporary use areas such as material staging, laydown yards, and concrete batch plants would be located in areas of lesser ecological impact and previously disturbed areas to the extent practicable. This approach would minimize adverse impacts to topsoil. Depending upon selection of the Agency Preferred Alternative, some temporary use areas may be necessary in previously undisturbed areas. In these cases, proactive measures (Appendix 2A, Section 2A.2) would be taken to preserve the local topsoil and return the sites to their pre-disturbance conditions following completion of construction activities.

For all temporary use areas, a layer of topsoil would be initially removed from the area, in conformance with the Habitat Reclamation and Monitoring Plan (Appendix 2B, Section 2B.10) and the Site Plan for Soils and Hydrology, which would be included in the final POD prior to the NTP.

In general, the need for soil removal from short-term disturbance areas is anticipated to be minimal and would ultimately depend upon local site conditions at the selected area. Limited soil removal may be required for short-term disturbance areas based on geologic conditions for the following scenarios:

- Areas with unconsolidated soils which could not support the types of vehicles required to be used, soil types would typically include sandy soils. In this scenario, a temporary rock base may be installed to support vehicle traffic, and 1 to 2 inches of sandy soil may be temporarily displaced when the temporary rock base is removed.
- Areas with soils utilized for agricultural activities. In this scenario, topsoil may be removed from sites where temporary construction activities would occur and stored in an area where contamination would be limited. Typically, 3 to 6 inches of fertile topsoil may be temporarily displaced during construction activities.

- Areas where uneven soils are present and not able to support construction of transmission structures. In this scenario, grading of 0.5 to 3 feet of topsoil may be required where terrain would not allow a usable working pad. Soil would be temporarily displaced, then graded and contoured once construction is complete.
- Areas where terrain may cause erosion during construction. In this scenario, topsoil may be disturbed to place erosion control measures in place during construction and through site reclamation.

The topsoil would be stored within the general boundary of the disturbed area and covered with durable weather-proof material to protect from erosion, contamination, or wind-blown effects, as appropriate. The stockpiled topsoil would be stored as close to the site of removal as possible to minimize the need for transporting the topsoil and ensuring that topsoil from different areas are not comingled; stockpiles would not be aggregated with topsoil from other locations.

These soils would be replaced after completion of site-specific construction activities. After completion of construction related activities, the temporary use areas would be graded to near original and original topsoil would be replaced. Necessary treatments and seeding would be applied. The Habitat Reclamation and Monitoring Plan (Appendix 2B, Section 2B.10) in conjunction with the Site Plan for Soils and Hydrology, would be included in the final POD prior to the NTP, would specify in detail the methods for topsoil salvage and soil management practices to be followed for site reclamation.

Dust Control
Dust control would be managed in accordance with the Dust Control Plan for the Project (to be provided as a part of the final POD). In order to control fugitive dust, active construction areas would be watered. Water for dust control would be obtained by the construction contractor from private wells and/or a municipal water supply. Water would be provided by three 2,000-gallon water trucks, which would water access roads twice a day. Approximately 55,789,705.3 gallons of water would be required for dust control for the Proposed Action.

2.2.5.2 Transmission Structures

Support structures are proposed to be steel lattice of various configurations or steel monopoles. Steel lattice structures include self-supporting four-legged tangent structures (i.e., structures placed where the line does not angle more than 1 degrees), guyed V structures with a single footing and four support guy wires, and two-legged H-frame structures as the primary structure types. Lattice H-frame structures are proposed for areas of active agricultural activity and self-supporting lattice structures to facilitate entrance into the two substations (Appendix 7, Figure 2.2-15). For areas of conductor tension change, angles, and phasing transpositions, self-supporting four-legged dead-end structures would be utilized. A dead-end structure is a fully self-supporting structure that is used when the circuit changes to a buried cable, or at a substation as a transition to a "slack span" entering the equipment.

Guyed-V structures are proposed to be used in areas that do not parallel the existing DPV1, including in California. Guy lines would typically be located within the ROW, would have to remain at the grade that they were installed, and would have reduced distances extending from the structure foundation for lower height guyed-V structure. Permanent guy guards/markers

would be installed on all guy wires for the guyed-V structures. In areas where the topography around guyed-V structure sites would result in anchors of a designed structure extending beyond the 200-foot ROW, self-supporting structures may be substituted to keep permanent facilities within the 200-foot ROW.

The structures would be between 72 and 195 feet in height, depending on the span length required and topography, with most being shorter than 142 feet. Span lengths between structures would vary from 400 to 2,300 feet, depending upon terrain conditions, current land use, structure type used, and to achieve site-specific mitigation objectives. However, the typical span would be approximately 1,500 feet. On average, three to eight structures would be placed per mile, depending on the structure type, topography, and angles of the route.

Additional refinements for structures shown in Figure 2.2-15 (Appendix 7) may be identified during preliminary engineering but are anticipated to result in similar design and height. Each structure type would be determined during final design and selected based on site-specific conditions or to mitigate impacts resulting from the Project.

The conductor, static wire, and OPGW would maintain a horizontal configuration for all structure types except proposed monopoles. Conductor bundles for all structure types except the proposed monopoles would be installed at the same height on the structures with approximately 34 feet of spacing between the center of each conductor bundle. The static wire and OPGW would be approximately 30 feet above the phase conductors at the top of the structures.

The proposed transmission line would be located adjacent to existing linear facilities such as transmission lines, pipelines, and roads to the extent practicable. DCRT would attempt to match the Project structure locations adjacent to existing transmission line structures to the extent practicable.

2.2.5.3 Foundations and Structure Construction

Foundation Installation

Each structure type requires specific foundation configurations. The guyed V structures require a center pier foundation and four anchors for the guy wires. The center pier would be a 9 by 9 foot by 24 foot deep precast foundation. Grouted soil, grouted rock, or helical anchors would be used to secure the guy anchors in most cases; however, 3 by 24-foot concrete piers could be utilized if dictated by engineering.

For drilled anchors, each anchor hole would be about 4 to 8 inches in diameter and range in depth from 10 to 50 feet. Helical anchors could be up to 24 inches in diameter and range in depth from 20 to 40 feet. At each grouted guy anchor, a temporary trench (approximately 3 by 8 feet, and 3 feet deep) would be dug to capture grout that is re-circulated through the top of the anchor when the guy is pumped with grout. This short-term disturbance area would be contained within the 200- by 200-foot work area. The temporary trench, containing slurry from the grouting operation, would be backfilled to a minimum depth of one foot using excavated soil, and reclaimed. Where a minimum of one foot of soil cannot be established for reclamation, the consolidated slurry would be removed and disposed of off-site.

The self-supporting tangent steel structures would consist of four, 4-foot diameter foundations, which would either be cast-in place concrete, a precast foundation, or grillage foundation. Dead-end lattice structures would have four foundations approximately 6 feet in diameter. Lattice H-Frame structures would consist of two 12-foot by 18-foot foundations, comprised of the same materials listed for self-supporting steel structures. The steel monopoles would consist of one foundation, 4 to 6 feet in diameter, which would either be cast-in-place concrete or a pre-cast foundation. Each foundation would extend approximately 2 feet above the ground level.

Foundations for supporting structures would typically be drilled piers that are excavated with a truck-mounted auger. In rocky areas, foundation holes may be excavated by drilling or blasting methods, or by installing special rock anchor or micropile type foundations.

Given the Arizona/California southwest desert conditions, the alluvial plain of the Colorado River basin typically contains 7 to 10 feet of upper soils that are generally loose sand, silt, and alluvium. In these areas, shrink-swell concerns and collapsing soils are more the rule rather than the exception (DCRT 2019). This precludes DCRT from assuming that favorable soil conditions are present for the proposed transmission line; hence, DCRT has decided to use a combination of deep foundations and spread footers.

Helicopter-only foundation construction may result in excavations that must be “hand dug” (i.e., jackhammers and shovels). Foundation dimensions increase when dug by hand due to shoring requirements, safety harness requirements, and retrieval equipment requirements. Micropile foundations are an alternative to hand-dug foundations and can mitigate some of the hazards specific to hand-dug foundations. This specialized type of foundation consists of footing anchors into bedrock and requires a much smaller overall structure work area footprint and disturbance to install. Micropile structures can be completed in extremely rugged terrain with the use of specialized equipment and helicopter assistance (typically) to fly the equipment into the site. Hand dug or micropile foundations may be an optional installation in extremely rugged terrain for the Project. For each tower leg, micropile foundations would use a group of casings that would be drilled and grouted into the ground. The exposed portion of the pile group would be encased in a reinforced concrete cap from the top of the casings to a depth determined by the geotechnical study. The use of micropile foundations could reduce the required work area. Micropile foundations size would vary, but each micropile would generally range in size from approximately 5.5 to 9.6 inches in diameter and be 10 to 50 feet in depth. Each foundation would have a cluster of 3 to 20 micropiles, and each cluster would be capped with a welded plate. This cap would be slightly larger than the size of the micropile cluster, anticipated to be up to 7 feet in diameter.

Short- and long-term disturbance associated with the Proposed Action, Action Alternative segments, and the Agency Preferred Alternative is detailed in Tables 2.2-11 through 2.2-13, respectively.

Table 2.2-11 Structure Type and Disturbance Summary by Proposed Action Segment

SEGMENT	LINE MILES	TOTAL STRUCTURES	SELF-SUPPORTED TANGENT	GUYED V	SELF-SUPPORTED DEAD-END	H-FRAME	MONO-POLE	SUBSTATION DEAD-END	S-T DIST. AREA[1] (ACRES)	L-T DIST. AREA[2] (ACRES)
Arizona										
p-01	26.7	88	82	0	5	0	0	1	96.8	10.1
p-02	1.0	4	0	3	1	0	0	0	4.4	0.3
p-03	2.1	6	0	6	0	0	0	0	6.6	0.4
p-04	5.5	15	0	14	1	0	0	0	16.5	1.0
p-05	2.0	9	0	9	0	0	0	0	9.9	0.5
p-06	35.7	120	1	103	16	0	0	0	132.0	8.1
p-07	2.2	7	0	5	2	0	0	0	7.7	0.5
p-08	0.6	2	0	2	0	0	0	0	2.2	0.1
p-09	6.9	23	3	17	3	0	0	0	25.3	1.7
p-10	1.1	5	5	0	0	0	0	0	5.5	0.6
p-11	4.1	14	13	0	1	0	0	0	15.4	1.6
p-12	2.5	8	1	6	1	0	0	0	8.8	0.6
p-13	3.5	10	0	9	1	0	0	0	11.0	0.7
p-14	0.9	3	3	0	0	0	0	0	3.3	0.3
p-15e	2.8	10	7	0	3	0	0	0	11.0	1.2
SCS Dist. Line	0.2	3[3]	0	0	0	0	3[3]	0	<0.1	0.0
California										
p-15w	6.6	24	1	0	0	23	0	0	26.4	1.7
p-16	4.6	18	3	0	0	15	0	0	19.8	1.4
p-17	3.1	12	11	0	1	0	0	0	13.2	1.4
p-18	2.4	10	8	0	2	0	0	0	11.0	1.2
Total	114.3	388	140	174	37	38	0	1	426.8	33.1

S-T: short-term; L-T: long-term. Assumptions: Short-term disturbance areas include 20 percent buffer addition for final design considerations (200’ x 200’ = 0.9 acre + 20% = 1.1 acre).

[1]Short-term disturbance assumes approximately 1.1 acres per structure site.

[2]Long-term disturbance assumes the Project structure permanent work areas as described in Section 2.2.5.3.

[3] These structures would be either wood or galvanized steel monopoles. These are not included in total.

Table 2.2-12 Structure Type and Disturbance Summary by Action Alternative Segment

SEGMENT	LINE MILES	TOTAL STRUCTURES	SELF-SUPPORTED TANGENT	GUYED V TANGENT	SELF-SUPPORTED DEAD-END	H-FRAME	MONO-POLE	SUB-STATION DEAD-END	S-T DIST. AREA (ACRES)	L-T DIST. AREA (ACRES)
East Plains and Kofa Zone										
d-01	25.2	83	0	57	4	21	0	1	91.3	5.4
i-01	8.3	27	2	24	1	0	0	0	29.7	1.8
i-02	3.3	11	1	10	0	0	0	0	12.1	0.7
i-03	19.9	64	15	49	0	0	0	0	70.4	4.6
i-04	10.5	38	6	21	9	0	0	2	41.8	3.2
in-01	13.9	53	19	21	13	0	0	0	58.3	4.9
x-01	4.7	16	0	13	3	0	0	0	17.6	1.1
x-02a	3.2	12	0	11	1	0	0	0	13.2	0.8
x-02b	3.4	10	0	10	0	0	0	0	11.0	0.6
x-03	5.6	18	0	17	1	0	0	0	19.8	1.1
x-04	22.7	73	0	72	1	0	0	0	80.3	4.4
Quartzsite Zone										
i-05	2.8	9	9	0	0	0	0	0	9.9	1.0
qn-01	0.6	3	2	0	1	0	0	0	3.3	0.3
qn-02	10.8	37	6	28	3	0	0	0	40.7	2.7
qs-01	3.1	10	0	9	1	0	0	0	11.0	0.7
qs-02	4.8	17	3	11	3	0	0	0	18.7	1.3
x-05	10.2	35	0	34	1	0	0	0	38.5	2.1
x-06	9.2	32	1	29	2	0	0	0	35.2	2.1
x-07	7.7	26	0	23	3	0	0	0	28.6	1.7

SEGMENT	LINE MILES	TOTAL STRUCTURES	SELF-SUPPORTED TANGENT	GUYED V TANGENT	SELF-SUPPORTED DEAD-END	H-FRAME	MONO-POLE	SUB-STATION DEAD-END	S-T DIST. AREA (ACRES)	L-T DIST. AREA (ACRES)
Copper Bottom Zone										
cb-01	3.2	15	13	0	2	0	0	0	16.5	1.7
cb-02	2.2	11	11	0	0	0	0	0	12.1	1.3
cb-03	4.3	17	9	0	8	0	0	0	18.7	2.0
cb-04	1.9	6	0	6	0	0	0	0	6.6	0.4
cb-05	4.4	16	0	15	1	0	0	0	17.6	1.0
cb-06	1.9	6	0	5	1	0	0	0	6.6	0.4
i-06	7.2	26	11	10	5	0	0	0	28.6	2.4
i-07	6.3	22	2	18	2	0	0	0	24.2	1.5
x-08	1.3	5	3	1	1	0	0	0	5.5	0.5
Colorado River and California Zone										
Arizona										
cb-10	1.9	8	2	3	3	0	0	0	8.8	0.8
i-08s	1.3	6	3	0	2	1	0	0	6.6	0.6
California										
ca-01	6.7	26	0	0	1	25	0	0	28.6	1.8
ca-02	3.4	13	2	0	1	10	0	0	14.3	1.0
ca-04	0.4	2	1	0	1	0	0	0	2.2	0.2
ca-05	6.6	26	0	0	1	25	0	0	28.6	1.8
ca-06	2.8	10	7	0	2	1	0	0	11.0	1.1
ca-07	3.0	11	4	7	0	0	0	0	12.1	0.9
ca-09	2.6	9	1	7	1	0	0	0	9.9	0.6
x-09	0.8	4	1	0	1	2	0	0	4.4	0.4
x-10	1.3	5	0	0	1	4	0	0	5.5	0.4
x-11	2.1	7	1	0	2	4	0	0	7.7	0.6
x-12	1.3	4	4	0	0	0	0	0	4.4	0.5

SEGMENT	LINE MILES	TOTAL STRUCTURES	SELF-SUPPORTED TANGENT	GUYED V TANGENT	SELF-SUPPORTED DEAD-END	H-FRAME	MONO-POLE	SUB-STATION DEAD-END	S-T DIST. AREA (ACRES)	L-T DIST. AREA (ACRES)
x-13	2.1	7	6	0	1	0	0	0	7.7	0.8
x-15	1.4	6	1	4	1	0	0	0	6.6	0.5
x-16	2.3	8	0	7	1	0	0	0	8.8	0.5
x-19	1.0	5	2	0	2	0	0	1	5.5	0.6
Other										
Alt SCS	N/A	1	0	0	0	0	0	0	<0.1	0.0
Alt SCS Dist. Line	3.1	55	0	0	0	0	55[1]	0	0.8	<0.1

S-T: short-term; L-T: long-term; N/A – Not Applicable.
Assumptions:
Short-term disturbance areas include 20 percent buffer addition for final design considerations (200’ x 200’ = 0.9 acre + 20% = 1.1 acre).
Short-term disturbance assumes approximately 1.1 acres per structure site.
Long-term disturbance assumes the Project structure permanent work areas as described in Section 2.2.5.3.
[1] These poles would be either wood or steel monopoles.

Table 2.2-13 Structure Type and Disturbance Summary by Agency Preferred Alternative Segment

SEGMENT	LINE MILES	TOTAL STRUCTURES	SELF-SUPPORTED TANGENTS[1]	GUYED-V	SELF-SUPPORTED DEAD-ENDS	H-FRAME STRUCTURES	SUBSTATION DEAD-ENDS	S-T DIST AREA[2] (ACRES)	L-T DIST. AREA[3] (ACRES)
Arizona									
p-01[1]	26.7	88	82	0	54	0	1	96.8	10.1
i-01	8.3	27	2	24	1	0	0	29.7	1.8
i-02	3.3	11	1	10	0	0	0	12.1	0.7
i-03	19.9	64	15	49	0	0	0	70.4	4.6
i-04	10.5	36	35	0	1	0	0	39.6	4.1
x-05	10.2	31	31	0	0	0	0	34.1	3.6
p-07[1]	2.1	10	9	0	1	0	0	11.0	1.2
p-08[1]	0.6	2	2	0	0	0	0	2.2	0.2

SEGMENT	LINE MILES	TOTAL STRUCTURES	SELF-SUPPORTED TANGENTS[1]	GUYED-V	SELF-SUPPORTED DEAD-ENDS	H-FRAME STRUCTURES	SUBSTATION DEAD-ENDS	S-T DIST AREA[2] (ACRES)	L-T DIST. AREA[3] (ACRES)
p-09[1]	6.9	24	24	0	0	0	0	26.5	2.8
p-10[1]	1.1	5	5	0	0	0	0	5.5	0.6
p-11[1]	4.1	14	13	0	1	0	0	15.4	1.6
p-12[1]	2.5	9	9	0	0	0	0	9.9	1.0
p-13[1]	3.5	11	11	0	0	0	0	12.1	1.3
p-14[1]	0.9	3	3	0	0	0	0	3.3	0.3
p-15e[1]	2.8	10	7	0	3	0	0	11.0	1.2
California									
p-15w[1]	6.6	24	1	0	0	23	0	26.4	1.7
p-16[1]	4.6	18	3	0	0	15	0	19.8	1.4
x-15	1.4	6	1	4	1	0	0	6.6	0.5
x-16	2.3	8	0	7	1	0	0	8.8	0.5
ca-07	3.0	11	4	7	0	0	0	12.1	0.9
ca-09	2.6	9	1	7	1	0	0	9.9	0.6
x-19	1.0	5	2	0	2	0	1	5.5	0.6
Totals	125.0	426	263	107	16	38	2	468.6	41.1

S-T: short-term; L-T: long-term.
Assumptions: Short-term disturbance areas include 20 percent buffer addition for final design considerations (200’ x 200’ = 0.9 acre + 20% = 1.1 acre).
[1] Self-supporting structures used where paralleling existing DPV1 transmission line
[2]Short-term disturbance assumes approximately 1.1 acres per structure site.
[3]Long-term disturbance assumes the Project structure permanent work areas as described in Section 2.2.5.3.

Foundations for supporting structures would be drilled piers. Pier foundations are placed in a hole generally made by a truck-mounted auger. Reinforced steel and anchor bolts are placed into the hole using a truck-mounted crane. The portion of the foundation above ground would be formed. The portion below ground uses the undisturbed earth of the augured hole as the form. After the foundation has been poured, the forms would be removed, the excavation would be backfilled, and the surface of the foundation dressed. First, drilled shafts would be excavated for each structure: four holes for each self-supporting structure, two holes for each H-Frame structure, and one hole for each guyed V structure and steel monopole. The holes would be drilled using a truck-mounted excavator equipped with augers of various sizes depending on the diameter and depth requirements of the hole to be drilled. Excavation spoils would be evenly spread out within the ROW in the vicinity of each structure, unless specifically prohibited by the landowner. Spoils would be crowned around the foundations to provide positive drainage away from them.

Where solid rock is encountered, blasting, rock hauling, or the use of a rock anchoring or micro-pile system may be required. The rock anchoring or micro-pile system would be used in areas where site access is limited or where adjacent structures could be damaged by blasting or rock hauling activities. Such anchoring systems may also be used where economically and technically justified. Materials used for rock anchoring or micro-pile systems would be stored in the staging areas and not on the ROW.

For helicopter-assist construction, conventional drill rigs would be used to dig out the excavation. A helicopter would then be used to set the steel reinforcement (typically anchor bolt cages reinforced with rebar, or all-rebar cages). Concrete would be flown in by a heavy-lift helicopter using buckets. To protect the public, signs would be posted indicating construction times and possible disruptions at the entrance of the canyon prior to construction. Limiting the helicopter use by utilizing conventional construction wherever possible would limit these interruptions and decrease the number of trips in and out of sites to pour concrete.

In areas where wheel-mounted access is not possible, crews would hand dig foundation holes for each structure. Crews would hand dig foundation sites utilizing both powered and non-powered digging tools to the specifications of the design. Once the foundation excavation is complete, spoils from excavation would be airlifted offsite by helicopter and be placed in an approved spoils location or laydown yard for storage or offsite disposal. The contractor would then place steel reinforcement bars into the foundations as required by the design. Once the reinforcement bar installation is completed, the contractor would have concrete airlifted to each site by helicopter and foundations would be poured using hand tools. This type of work would only be required for sites where vehicle access is not feasible.

Reinforced steel and anchor bolts would be transported to each site by truck, either as a prefabricated cage or loose pieces, which would then be fabricated into cages on the site. Concrete would be hauled to the site in concrete trucks. Water would be required for concrete mixing. Excavated material would be spread at the site or disposed of in accordance with local ordinances and per agreement. Structures and equipment would be attached to the foundations by means of threaded anchor bolts embedded in the concrete. Some equipment such as transformers may not require anchor bolts. They would be secured to the foundation by other means. Water for SCS foundation construction is included in the construction water needs.

Steel reinforcing cages and stub angles would be installed for all lattice structures. The foundations would be designed to satisfy all Federal, state, and local design codes. The lattice structure holes would be approximately 4 to 6 feet in diameter.

Concrete would be acquired as a commercial product from a supplier. Typically, concrete would be delivered directly to the site in concrete trucks with a capacity of up to 10 cubic yards. However, in areas with limited access or environmental constraints, the concrete would be placed in the excavation with either a crane and garbro bucket or pumped from a distance of several hundred feet. Each foundation would extend approximately 2 feet above the ground level.

Structure Assembly and Installation

At local assembly and staging areas, materials would be staged and subassemblies may be fabricated. From these local assembly and staging areas, material and subassemblies would be delivered to the structure sites via flatbed truck or helicopter if required. Subsequent to full or partial assembly, sections of the structure would be assembled adjacent to the structure location. Supporting steel structures would be erected on concrete foundations. These would be set with a truck-mounted crane and attached to the foundation anchor bolts by means of a steel base plate. These structures would be used to support the energized conductors and certain types of equipment. This equipment would be lifted onto the structure by means of a truck-mounted crane and bolted to the structures, and electrical connections would then be completed. Some equipment would be mounted directly to the foundations without supporting structures; again, these would be set in place by means of a truck-mounted crane. The crane would move along the ROW as structures are erected. Some of this equipment requires assembly and testing on the pad. Electrical connections to the equipment would then be completed.

Structure assembly using helicopters would use sky cranes. Due to the overall steepness of each site requiring helicopter construction, steel bodies (sections of the towers) would have to be erected in an adjacent fly yard and flown in by the sky crane to each structure site and subsequently, then each head of the tower. The heads and bodies of the towers would have to be assembled in the fly yard area and delivered the tower via sky crane to erect on the pad site. For comparison, steel erection using conventional equipment involves the lattice pieces being hauled by the bundle to the tower site and assembled on the structure pad. The steel is built in sections and then erected together using a combination of forklifts (telehandlers) and rough-terrain or all-terrain cranes.

2.2.5.4 Conductors

Conductor, shield wire, and OPGW would be placed on the transmission line support structures by a process called stringing. Conductors with a non-specular finish would be suspended from insulator assemblies. Overhead ground wires and OPGW would be located on the peaks of each transmission structure and function to intercept lightning that would otherwise strike the conductor. All structures with a single shield wire peak would have OPGW installed at the structure peak. All structures with dual shield wire peaks would have OPGW installed on one peak, and steel shield wire installed on the other. Additionally, a grounding system would be installed at the base of each transmission structure that would consist of copper ground rods

embedded into the ground in immediate proximity to the structure foundation and connected to the structure by buried copper lead.

The first step to conductor and shield wire stringing would be to install insulators and stringing sheaves. Stringing sheaves are rollers that are temporarily attached to the lower portion of the insulators at each transmission line support structure to allow conductors to be pulled along the line. A lightweight rope known as a finger line may be placed through each sheave with each end extending to the ground. Additionally, temporary clearance structures would be erected where required prior to stringing any transmission lines. The temporary clearance structures are typically vertical wood poles with cross arms and are erected at road crossings or crossings with other energized electrical lines to prevent contact during stringing activities. Bucket trucks may also be used to provide temporary clearance. Bucket trucks are trucks fitted with a hinged arm ending in an enclosed platform called a “bucket” which can be raised to let the worker in the bucket service aerial equipment.

Once the stringing sheaves and temporary clearance structures are in place, the initial stringing operation would commence. This would consist of pulling a pilot line through the sheaves, using the finger lines, along a section of the alignment. The pilot line is then attached to the hard line, which follows the pilot line as it is pulled through the sheaves. The hard line would then be attached to the conductor or shield wire to pull it through the sheaves into its final location. Pulling the pilot line may be accomplished by attaching it to a specialized vehicle or to a small helicopter that moves along the ROW.

Pulling and tensioning equipment would use a hard line to install the ground wires and achieve the correct sagging of the transmission lines between support structures. Pulling and tensioning sites would be required about every 3 miles along the ROW and would encompass approximately 2.3 to 2.8 acres to accommodate required equipment. Equipment at sites required for pulling and tensioning activities would include tractors and trailers with spooled reels that hold the conductors, and trucks with tensioning equipment. To the extent practicable, pulling and tensioning sites would be located within the ROW; any pulling and tensioning sites on Federal lands outside the ROW would require a temporary ROW authorization from the BLM. Depending on the topography, minor grading may be required at some sites to create level pads for equipment. Wire splicing sites would be located midway between each pair of pulling/tensioning sites. Finally, the tension and sag of the conductors and shield wires would be fine-tuned, the conductors would be permanently attached to the insulators at the support structures, and the stringing sheaves would be removed.

Temporary work areas for conductor, ground wire, and OPGW pulling, and snubbing sites would also be required. During stringing operations, approximately 2 to 3 drums of cable can be pulled and spliced together; meaning pulling stations would be required every 5 to 7 miles along the transmission line route. For large angles, these pulling sites may extend beyond the ROW. Pulling sites would be approximately 600 feet by 200 feet in size (2.8 acres). Snubbing sites (where a conductor is temporarily fixed or attached to the ground for conductor-sagging purposes) would be located within the ROW and are locations where conductors are spliced together approximately every 5 to 7 miles along the transmission line route. Access to both sites would be required for necessary equipment. Table 2.2-14 presents the estimated short-term disturbance associated with wire stringing.

In the Copper Bottom Pass area (CBPA), puller/tensioner and snub sites, if possible, would be deemed drive and crush with the utilization of a soil compactor to reach compaction necessary for heavy equipment to travel sufficiently without risk of roll over, spinning out, or rutting. In instances where drive and crush disturbance cannot reach a level enough plane for the stated heavy equipment necessary, then blading would have to occur in order to keep pullers, tensioners, and wire boats level for efficient and safe wire conducting activities. All blading associated with puller/tensioner and snub sites would be temporary.

All wire pulling operations at the Colorado River crossing would comply with the stipulations provided in the USACE Clean Water Act Section 404 Permit and USACE Rivers and Harbors Act Section 10 Permit. DCRT and/or their contractor would make all reasonable efforts to communicate with the U.S. Coast Guard, local marinas, commercial boat launches, and local recreational clubs and provide advanced notice of crossing operations. To protect the public, all boat traffic would be restricted from entering the wire pulling area while stringing operations (i.e., stringing of sock line, pulling back of hard line, and stringing of conductor/OPGW) are occurring. Boat traffic may be restricted using a combination of patrol boats and warning buoys on either side of the wire pulling corridor. These restrictions would be temporary in nature and boat traffic would be allowed to resume after each wire stringing subactivity (i.e., sock line stringing, hard line pull back, conductor/OPGW stringing) was completed.

Restrictions in access to the upland areas adjacent to the Colorado River implemented to maintain public safety during construction operations would be temporary in duration. Signage advising recreation users of construction activities and directing them to alternative trails or bikeways would be installed.

Tables 2.2-14 through 2.2-16 present the estimated short-term disturbance associated with wire stringing for the Proposed Action, the Action Alternative, and the Agency Preferred Alternative segments, respectively.

All short-term disturbance areas would be reclaimed as described in the Habitat Reclamation and Monitoring Plan (Appendix 2B, Section 2B.10).

Table 2.2-14 Short-term Disturbance Associated with Wire Stringing under the Proposed Action by Segment

SEGMENT	LINE MILES	SNUBBING SITE DISTURBANCE (ACRES)*	PULLING SITE DISTURBANCE (ACRES)*	TOTAL SHORT-TERM DISTURBANCE (ACRES)
Arizona				
p-01	26.7	16.5	25.8	42.3
p-02	1.0	0	0	0
p-03	2.1	2.8	2.3	5.1
p-04	5.5	5.5	4.6	10.1
p-05	2.0	2.8	2.3	5.1
p-06	35.7	24.8	23.0	47.8
p-07	2.2	0.0	3.7	3.7
p-08	0.6	0.0	0.0	0
p-09	6.9	5.5	0	5.5
p-10	1.1	0	0	0
p-11	4.1	2.8	2.3	5.1
p-12	2.5	0	0.0	0
p-13	3.5	0.0	2.3	2.3
p-14	0.9	0.0	2.3	2.3
p-15e	2.8	0	7.9	7.9
SCS Dist. Line*	0.2	0.0	0	0
California				
p-15w	6.6	5.5	1.4	6.9
p-16	4.6	2.8	5.7	8.5
p-17	3.1	0	4.6	4.6
p-18	2.4	2.8	11.5	14.3
Total	114.3	71.8	99.7	171.5

Assumptions:
Snubbing sites estimated at 2.8 acres of disturbance each located 5 miles apart along the line.
Pulling sites estimated at 2.8 acres of disturbance each at dead-end and 2.3 acres of disturbance at angles located at 5 miles apart along the line.
*Wire stringing for new distribution line associated with the SCS would be accomplished within other estimated disturbance; no additional disturbance estimate required. Line miles for distribution line not included in transmission line mileage total.

Table 2.2-15 Short-term Disturbance Associated with Wire Stringing by Action Alternative Segment

SEGMENT	LINE MILES	SNUBBING SITE DISTURBANCE (ACRES)*	PULLING SITE DISTURBANCE (ACRES)*	TOTAL SHORT-TERM DISTURBANCE (ACRES)
East Plains and Kofa Zone				
d-01	25.2	16.5	16.1	32.6
i-01	8.3	5.5	5.5	11.0
i-02	3.3	5.5	0	5.5
i-03	19.9	19.3	0	19.3
i-04	10.5	8.3	0	8.3
in-01	13.9	8.3	6.9	15.2
x-01	4.7	2.8	2.3	5.1
x-02a	3.2	2.8	2.3	5.1
x-02b	3.4	2.8	2.3	5.1
x-03	5.6	5.5	4.6	10.1
x-04	22.6	16.5	13.8	30.3
Quartzsite Zone				
i-05	2.8	0.0	0.0	0.0
qn-01	0.6	0.0	0.0	0.0
qn-02	10.8	8.3	6.9	15.2
qs-01	3.1	2.8	2.3	5.1
qs-02	4.8	2.8	4.6	7.4
x-05	10.2	8.3	3.2	11.5
x-06	9.2	5.5	9.2	14.7
x-07	7.7	5.5	4.6	10.1
Copper Bottom Zone				
cb-01	3.2	2.8	4.6	7.4
cb-02	2.2	2.8	4.6	7.4
cb-03	4.3	2.8	2.3	5.1
cb-04	1.9	0	2.3	2.3
cb-05	4.4	2.8	2.3	5.1
cb-06	1.9	0	6.9	6.9
i-06	7.2	5.5	4.6	10.1
i-07	6.3	5.5	4.6	10.1
x-08	1.3	0.0	0.0	0.0

SEGMENT	LINE MILES	SNUBBING SITE DISTURBANCE (ACRES)*	PULLING SITE DISTURBANCE (ACRES)*	TOTAL SHORT-TERM DISTURBANCE (ACRES)
Colorado River and California Zone				
Arizona				
cb-10	1.9	0	2.3	2.3
i-08s	1.3	0.0	0.0	0.0
California				
ca-01	6.7	5.5	4.6	10.1
ca-02	3.4	2.8	2.3	5.1
ca-04	0.4	0	0	0
ca-05	6.6	5.5	4.6	10.1
ca-06	2.8	0	4.6	4.6
ca-07	3.0	2.8	0	2.8
ca-09	2.6	2.8	4.0	6.8
x-09	0.8	0.0	2.3	2.3
x-10	1.3	0.0	0.0	0.0
x-11	2.1	2.8	2.3	5.1
x-12	1.3	0.0	2.3	2.3
x-13	2.0	0.0	2.3	2.3
x-15	1.4	0	4.6	4.6
x-16	2.3	2.8	3.4	6.2
x-19	1.0	0	6.9	6.9
Other				
Alt SCS Dist. Line*	3.1	0.0	2.5	2.5

Assumptions:
Snubbing sites estimated at 2.8 acres of disturbance each located 5 miles apart along the line.
Pulling sites estimated at 2.3 to 2.8 acres of disturbance each located at 5 miles apart along the line.
*Wire stringing for alternative distribution line associated with the alternative SCS.

Table 2.2-16 Short-term Disturbance Associated with Wire Stringing under the Agency Preferred Alternative by Segment

SEGMENT	LINE MILES	SNUBBING SITE DISTURBANCE (ACRES)*	PULLING SITE DISTURBANCE (ACRES)*	TOTAL SHORT-TERM DISTURBANCE (ACRES)
Arizona				
p-01	26.7	16.5	25.8	42.3
i-01	8.3	5.5	5.5	11.0
i-02	3.3	5.5	0	5.5
i-03	19.9	19.3	0	19.3
i-04	10.5	8.3	0	8.3
x-05	10.2	8.3	3.2	11.5
p-07	2.2	0	3.7	3.7
p-08	0.6	0	0	0
p-09	6.9	5.5	0	5.5
p-10	1.1	0	0	0
p-11	4.1	2.8	2.3	5.1
p-12	2.5	0	0	0
p-13	3.5	0	2.3	2.3
p-14	0.9	0	2.3	2.3
p-15e	2.8	0	7.9	7.9
Alt SCS Dist. Line*	3.1	0	2.3	2.3
California				
p-15w	6.6	5.5	1.4	6.9
p-16	4.6	2.8	5.7	8.5
x-15	1.4	0	4.6	4.6
x-16	2.3	2.8	3.4	6.2
ca-07	3.0	2.8	0	2.8
ca-09	2.6	2.8	4.0	6.8
x-19	1.0	0	6.9	6.9
Total	125.0	88.4	82.2	169.7

Assumptions:
Snubbing sites estimated at 2.8 acres of disturbance each located 5 miles apart along the line.
Pulling sites estimated at 2.8 acres of disturbance each at dead-end and 2.3 acres of disturbance at angles located at 5 miles apart along the line.
*Wire stringing for alternative distribution line associated with the alternative SCS. Line miles for distribution line not included in transmission line mileage total.

2.2.5.5 Insulators, Grounding, and Other Hardware

Other hardware not associated with the transmission of electricity may be installed as part of the Project as required by the FAA, particularly in the Colorado River crossing area. These transmission line markings may include aerial marker spheres, structure painting, or aircraft warning lighting which would be in accordance with FAA or DOD consultation and FAA regulations (Circular 70/7460) for aircraft obstruction marking, as necessary. These lights would be solar powered and would not require additional electrical interconnection. Specifically, structure proximity to airports and structure height are the main factors determining whether FAA regulations would apply, based on an assessment of wire/structure strike risk. Currently, it is anticipated that all structures would be designed to a height of 199 feet or less.

Current guidelines and methodologies (Avian Power Line Interaction Committee [APLIC] 2012, 2006) would be used to minimize the potential for raptors and other birds to collide with, or be electrocuted by, the transmission line. For example, aerial marker balls, or other appropriate visibility markers would be placed on the transmission line at and near the crossing of the Colorado River to increase visibility to birds using that flight corridor. Flight diverters would be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected would be subject to approval by BLM in coordination with USFWS and CDFW, as appropriate. Visibility markers would also be placed at other locations along the transmission line that are identified by the BLM and state wildlife agencies as having a high potential for avian collisions.

2.2.5.6 Series Compensation Station

A general layout of the SCS is shown in Figure 2.2-16 (Appendix 7).

Two alternative locations for the SCS have been identified. Both alternative locations would be on BLM-administered public land, as shown in Figure 2.2-17 (Appendix 7).

Design

A new SCS system would be needed and located under the new transmission line (or in very close proximity to the transmission line), parallel to the existing SCS associated with the DPV1 line. The SCS would be within the 200-foot wide ROW, approximately 47 miles from the APS Delaney Substation. This SCS would be equipped with switchable banks of capacitors inserted in series with a line to compensate for the voltage drop in the line, effectively allowing power transmission over greater lengths of line.

The ground surface within the fenced area of the SCS, and extending out up to 3 feet, would be covered with crushed rock. This is required for personnel safety due to grounding concerns and because of lower clearances to energized conductors within the substation as compared to transmission lines. These lower clearances are allowed by NESC 2012 because of the limited access to the SCS due to fence and gates.

A fiber optic repeater would be located in the SCS using the same distribution line for backfeed to this substation. Under the Proposed Action, the new SCS would be connected to the same APS 12kV distribution line used for the existing DPV1 SCS. This existing three-phase distribution

line would not need to be upgraded to accommodate the new SCS. The line connecting the new SCS to the distribution line would run along existing access roads and would require a 15-foot ROW along its approximately 1,000-foot length, and portions of this 15-foot ROW would likely occur within the larger 200-foot ROW for the transmission line. This line would require three new poles, either wood or galvanized steel. Each pole would be an average of 45 feet tall, would temporarily disturb approximately 0.04-acre, and would permanently disturb a 5-foot diameter area around each pole for a total long-term disturbance of less than 20 square feet per pole, or 0.0014-acre total.

The perimeter fence would be a 9-foot chain-link fence with steel posts. One foot of barbed wire would be installed at the top of the chain-link, yielding a total height of 10 feet. Locked gates would be installed at appropriate locations for authorized vehicle and personnel access.

The grounding system would consist of buried copper conductor arranged in a grid pattern and driven ground rods of adequate size, typically 8 to 10 feet in length. The ground rods and any equipment and structures would be connected to the grid conductor. The amount of conductor, size, length, and number of ground rods required would be calculated based on the fault current and soil characteristics. All metal structures and equipment would be connected to the ground grid via ground pig tails. The ground grid would extend approximately 4 feet outside of the perimeter fence to prevent unsafe reach-touch potential.

Two main types of high-voltage conductors are used in the SCS: tubular aluminum for rigid bus sections and/or stranded aluminum conductor for strain bus and connections to equipment. Rigid bus sections would be supported by porcelain insulators installed on steel supports. The bus sections would be welded together and attached to special fittings for connection to equipment. Stranded aluminum conductors would be used as flexible connectors between the rigid bus and the SCS equipment.

Clearing and Grading

Clearing of all vegetation would be required for the entire SCS area (200 feet by 315 feet), including a distance of 10 feet outside the fence for a total estimated disturbance of 1.7 acres long-term disturbance. This is required for personnel safety due to grounding concerns and because of lower clearances to energized conductors within the substation as compared to transmission lines. These lower clearances are allowed by NESC 2017 (IEEE 2016) because of the limited access to the SCS due to fence and gates.

Vegetation would be removed and a 4 to 6-inch layer of crushed rock applied to the finished surface of the SCS. The SCS would be treated with a BLM-approved and authorized soil sterilizer to prevent vegetation to ease maintenance. The entire SCS area would be graded flat, with enough slope to provide runoff of precipitation. The SCS would be graded to use existing drainage patterns to the extent possible. In some cases, drainage structures, such as ditches, culverts and sumps may be required to control runoff. The topsoil would be removed. The topsoil would be covered once stockpiled. Topsoil storage at each location is assumed to be within each site disturbance and would not increase disturbance estimates. Cleared and graded material would be disposed of in compliance with local ordinances. Material from offsite would be obtained at existing borrow or commercial sites and trucked to the SCS using existing roads and access roads.

Material Storage Yards

Construction material storage yards may include the SCS footprint or be leased by the contractor. A storage area for the SCS may be the same as or shared with transmission line crews.

Power Supply Distribution Line Connection

Under the Proposed Action, the SCS would be connected to the existing APS 12kV distribution line by a 1,000-foot connection line. Installation of the connection would be performed by APS and would take place over approximately two months. The three new poles for the line would be buried 6 feet below grade and filled with native soil. Structures would be monopoles, an average of 45 feet tall, with spans of 300 to 350 feet. Short-term construction areas for the structures would be 15-foot by 40-foot area (0.014-acre) around each pole site, for a total short-term disturbance footprint of <0.1-acre. The long-term disturbance area per structure would be 5 feet diameter.

The SCS distribution line associated with the Proposed Action along Segment p-06, parallel to the existing SCS, would be connected to the same APS 12-kV distribution line feeding the DPV1 500-kV SCS, located east of the Kofa NWR. The power required is relatively small, around 20 kW, a need to upgrade the existing 12-kV, three-phase line to accommodate the new load is not anticipated. Line distance would be approximately 1,000 feet, using three new distribution line structures.

Construction of the distribution line would take approximately two months and would be performed by a crew of three APS workers using a standard APS service truck equipped with a driller and crane. Crews would also use a bucket truck, wire puller and tensioner. Limited traffic control may be required on the access road adjacent to the line, which would consist of signage and lane closure or deviation. The traffic control would be performed in accordance with ADOT requirements. No additional material staging and laydown yards or batch plants would be required for the construction of the distribution line.

Alternative Series Compensation Station Locations

The two alternative locations for the SCS would be on BLM-administered public land near the intersection of Segments x-04 and i-03, less than 75 feet apart. Specifications for the SCS would be the same as those described under the Proposed Action.

Either alternative SCS site (i-03 or x-04) would be powered via a distribution line connecting to the existing APS 12kV distribution line in Brenda, Arizona. The associated distribution line would interconnect with APS' 12-kV system in Brenda. APS has identified a potential alignment for the proposed distribution line that would originate from the 12kV system in Brenda just south of US 60. The distribution line would extend south, generally parallel and to the east of Ramsey Mine Road for approximately 1.4 miles, breaking from Ramsey Mine Road just north of I-10 and north of the i-04 Project Segment, and be located adjacent and parallel to the I-10 ADOT ROW (Figure 2.2-17). This route would be 3.2 miles long. With a typical distribution line pole span of 300 to 350 feet, the distribution line would require approximately 55 poles. Each pole would be an average of 45 feet tall and would permanently disturb a 5-foot diameter area (<0.1 acre) around each pole. The estimated temporary construction disturbance for the connection to the distribution line would be 0.8-acre, with a long-term disturbance footprint of <0.1 acre. It would

also require the crossing of I-10, with taller than the typical 45-foot structures required on the north and south sides of the highway. These structures may also utilize guy wires at line angles or at the crossing of I-10. The crossing would be designed in accordance with the US Department of Transportation and ADOT requirements including aerial crossings and traffic control permits. APS would acquire an Encroachment Permit from ADOT and would follow all approved traffic control measures for pulling the wire across I-10. The Encroachment Permit may also include rights of ingress and egress to access the segment of line parallel to I-10 for construction purposes. No material staging, laydown yards, or batch plants would be required for the alternative distribution line.

The distribution line would be accessed using existing roads or access roads constructed for the transmission line; no new access would be required for construction of the distribution line. A crossing of I-10 would be required for the distribution line, which may require taller than average poles on either side of the crossing. The crossing would be designed in accordance with ADOT requirements, as applicable, including aerial crossings and traffic control permits.

For the SCS, up to two additional fiber optic regeneration sites would be only required if the distance from the Delaney Substation to the SCS or from the SCS to the Colorado River Substation greatly exceeds 60 miles. Locations for these additional fiber optic repeaters, if needed, would be selected minimizing the length of the distribution line.

The estimated short-term and long-term disturbance for the alternative SCS footprint would be similar to that described under the Proposed Action: the SCS would be integrated into the footprint of the transmission line with a 200-foot by 315-foot fenced area. Clearing of all vegetation would be required for the entire SCS area, including a distance of 10 feet outside the fence, for a total long-term disturbance of 1.7 acres. Each pole would be an average of 45 feet tall (except at the I-10 crossing) and would permanently disturb a 5-foot diameter area (0.0004 acre) around each pole. The estimated temporary construction disturbance for the connection to the distribution line would be 0.8-acre, with a long-term disturbance footprint of 0.02-acre.

2.2.5.7 Substation Upgrades

DCRT has completed wire-to-wire interconnection facility studies with both APS and SCE for the Project. The purpose of these studies is to identify the effects of the installation of the Project on the existing transmission grid as well as to determine the specific facilities required to effectively interconnect the Project to the Delaney and Colorado River substations. The Delaney and Colorado River substations have adequate room to accommodate all of the equipment associated with the interconnection of the TWL line. SCE and APS would perform all of the engineering, design material procurement, construction, and testing related to the interconnections of the TWL to the Colorado River and Delaney substations, respectively. It is estimated to take approximately 18-24 months to complete interconnection related work at the Delaney Substation, and approximately 27 months to complete the same task at the Colorado River Substation. DCRT anticipates the installation of the following equipment at both the substations to interconnect the TWL line to the existing 500kV buses at the respective substation:

500kV line position including -

- 500kV dead-end switchyard structure

- 3 - 500kV line drops
- 3 - 500kV coupling capacitor voltage transformers with steel pedestal support structures
- 2 - 500kV circuit breakers
- 9 - 500kV single phase disconnect switches
- 3 - 500kV single phase disconnect switches with grounding attachment
- 36 - 500kV bus support post insulators
- 1 - 500kV, 75MVAr line reactor (Colorado River Substation)
- 1 – 500kV, 136MVAr line reactor (Delaney Substation)
- 1 - 500kV sync-opening circuit breaker
- 3 - 500kV disconnect switches
- 1 - 500kV 75MVAr, 3-Phase line reactor (Delaney Substation)
- 4 - 500kV surge arresters
- 1 - 25-foot high firewall
- Installation of protection relays, fiber optic cable, lightwave, channel, and associated equipment supporting protection and supervisory control and data acquisition (SCADA) system
- Installation of new 20-foot driveway and removal of existing driveway
- Installation of one 500kV transmission structure including insulator/hardware assemblies, and two spans of conductor between the TWL´s last structure located outside the substation property line and the dead-end substation structure at the substation.

The equipment required to interconnect the Project to the Delaney and Colorado River substations is expected to be similar in type and size to the existing equipment at each substation. Exact equipment requirements would be determined after the completion of the facility studies by each interconnecting utility.

It is currently anticipated that the Project would connect to SCE’s last structure located within substation property grounds but outside the substation fence at the Colorado River Substation. For the Delaney Substation, the Project would connect to the last APS tie-in structure inside the substation fence. At both substations, installation of one 500-kV transmission structure including insulator/hardware assemblies, and two spans of wire between the Project’s last structure located outside the substation property line and the dead-end substation structure at the associated substation would be required.

CAISO requires the installation of one 75-MVAr shunt-reactor in the SCE Colorado River substation and a 136 MVAr shunt-reactor in the APS Delaney Substation – the two, existing utility-owned terminus substations of the Project. Shunt reactors are voltage modulation devices that are generally installed to provide voltage control on transmission systems, thereby enabling the power system operator to maintain the terminal voltage within specified limits to ensure

reliable operation of the bulk transmission network. There would be no new disturbance associated with these installations.

2.2.5.8 Access

Access Routes

Access routes are displayed on Figures 2.2-18 through 2.2-21 (Appendix 7).

Access to the ROW would be provided by existing roads and trails, such as those associated with the DPV1 transmission line and nearby pipelines, to the extent practicable. Access for the Project would be in accordance with an Access Road Plan included in the final POD prior to the NTP. Five types of access would be used:

Access Type A – Type A access roads would include existing public or private roads that are parallel to the ROW, or a patchwork of existing roads in the area that would provide access to or would be crossed by Project segments. These roads consist of well-maintained county dirt roads, private roads, and all paved roads. Improvements to Type A roads may include repairs to the roadbed on dirt roads without additional disturbance beyond the existing roadbed width. Surface improvements to the roadbed would only be completed to allow for safe travel conditions.

Access Type B – Type B access roads would require some level of upgrade to allow sufficient access. In conditions required for construction passage, these roads may be bladed, compacted, and widened to a maximum of 18 feet for travel surface with up to 30 feet of total disturbance overall (Table 2.2-17). This includes the 16-foot travel surface, 2-foot berms on either side, and 5 feet of material displacement on either side of the travel surface in steep terrain. In flat terrain with the exclusion of wash-crossings this total disturbance would be much less, with an approximate 18 feet of total disturbance. In moderate terrain, with the exclusion of wash-crossings, this total disturbance would be approximately 25 feet. In steep terrain with the exclusion of wash-crossings this total disturbance would be approximately 30 feet.

Access Type C – Type C access roads consist of newly bladed access roads down either side of centerline of the conductor but within the 200-foot ROW corridor as much as possible. These roads would consist of 16 to 22 feet of travel surface, 2-foot berms on either side, with a maximum of 50 feet of material displacement in steep areas (Table 2.2-17). In areas of flat terrain, except in wash crossings, disturbance would most likely not exceed 22 feet total for travel surface, berms, and material displacement. In areas of moderate terrain, except in wash crossings, disturbance would most likely not exceed 50 feet total for travel surface, berms, and material displacement. Where possible, areas that can support construction activities by drive-and-crush and/or clear-and-cut practices would be implemented.

Access Type D – Type D access spur roads would be constructed in areas where Type A, B, and C roads provide access to the vicinity of the ROW but are not adequate to provide access to structure locations. These roads would be new spur roads that would be bladed from the main access road to access the structure work areas. New spur roads would consist of native material displacement, and thus require larger disturbance areas in steeper terrain. Travel surfaces for new spur roads would range from 16 to 22 feet with 2-foot berms on either side excluding material displacement. For spur roads in flat terrain, material displacement would not exceed 3 feet on either side for a total of 22 feet if utilizing a 16-foot travel surface. For spur roads in moderate

terrain, material displacement would not exceed seven feet on either side for a total of 30 feet if utilizing a 16-foot travel surface. In steep terrain, material displacement would not exceed 76 feet of total disturbance (Table 2.2-17), this includes a 22-foot travel surface, 2-foot berms on either side, and 25 feet of cut/fill on either side. Steep terrain is defined as slopes greater than or equal to 15 percent. Long-term disturbance would consist of the cut, fill, and road base travel surface required for continued operation and maintenance of the line. Total disturbances are estimated and would be calculated during the reclamation period. Where terrain and soil conditions are suitable, non-graded overland access ("drive-and-crush") would be utilized. When drive-and-crush cannot be used, vegetation would be cleared, and roads would be cut as determined by terrain, soil, and vegetation ("clear-and-cut"). To the maximum extent possible, roads would cross drainages at grade (low-level crossing). In some cases, road cutting may be needed to drop access roads to the grade of the drainage bottom. Any material moved by road cutting would be cast upland and not deposited in washes.

Access Type E – Helicopter Access – In areas of particular biological, topographical, archaeological, and visual concerns, a helicopter may be used to assist Project construction. Areas where helicopters would be used would also include the use of the other types of access roads described above (Types B, C, and D), as possible. Roads would be used by light pick-up trucks or off-highway vehicle (OHV) for crew and tool access, and/or equipment whose tracks can adequately stay within the confines of the road disturbance boundaries without risk of roll-over or equipment failure due to stress loading of slope. However, all activities required for transmission line construction that would require large vehicles and equipment such as semi-trucks, tractor-trailers, and lo-boys would be conducted by helicopter application. Currently helicopter construction is expected for Segments p-10, p-11, cb-01, and cb-02.

Table 2.2-17 Access Types and Disturbance Widths

SLOPE	TYPE A (EXISTING MAINTAINED ROADS)	TYPE B (UPGRADED EXISTING ROADS)	TYPE C (NEW CENTERLINE ACCESS ROAD)	TYPE D (NEW ACCESS SPUR ROADS)	TYPE E (HELICOPTER)
Flat (0-7.9%)	-	18 feet	22 feet	22 feet	-
Moderate (8-14.9%)	-	25 feet	30 feet	30 feet	-
Steep (>15%)	-	30 feet	50 feet	76 feet	-

All new access roads would follow existing contours and topography to the extent practical to help blend disturbance into the surrounding geography. Roads within the ROW can meander up to 25 feet within the ROW to avoid sensitive resources, reduce disturbance, or mitigate unanticipated constructability issues in the field. Such instances would include avoidance of special status plants, unanticipated cultural resource discoveries, and unforeseen steep washes/topographic features that would require avoidance. Grading for access would be limited to the extent practicable, and unnecessary grading would not occur. Access roads would typically be located within the 200-foot ROW and be the shortest distance from structure to structure. The typical roadway approach includes a turning radius of 50 feet on either side. A 50-foot turning radius would be required at T or Y road intersections. Cross slope would be a minimum of 3

percent. The typical roadway approach includes a turning radius of 50 feet on either side for about 100 feet in length.

New access roads would also need 10-foot-wide pullouts with a total linear length of 150 feet (10-foot-wide by 100 feet with 25-foot tapers on each end). The pullouts would occur no closer than 1,000 feet on a single access road unless terrain requires less distance between them (e.g., blind corner or steep drop). The pullouts may be spaced greater than 1,000 feet apart at operator's discretion.

Permanent access roads that are located outside of the 200-foot ROW would be needed and would require additional long-term ROW. Access roads not needed for operation and maintenance of the line would be restored to their previous condition following completion of construction.

Due to steeper than average slopes, access in the CBPA poses unique challenges for the Project. There are currently no Type A roads present in the CBPA, only Type B.

Existing main access roads through the CBPA currently have an average overall disturbance width of 18 feet, allowing for 14 feet of driving surface. These roads are in relatively good condition and could be used during construction with only minor blading required within the existing footprint. Some of these access roads may require widening for construction support where the widths are not sufficient to support equipment traffic.

Type C access roads through the CBPA would consist of newly bladed or upgraded roads which would provide access to Type B and D roads.

In order to reach the proposed structure locations in the CBPA, Type D spur roads are proposed to be constructed. Some of the spur roads would be located in steep terrain with slopes that exceed 15 percent. Spur roads in steeper terrain would result in larger disturbance areas as described above. There are also several proposed Type D spur roads for tracked equipment only to some structure sites for Segment p-11. These would be in areas where full access roads cannot be developed, but it is possible to provide access to tracked equipment only with an estimated maximum width of 50 feet. These roads would be reclaimed to the fullest extent possible, as they are not suitable for use by operation and maintenance vehicles.

Estimated miles of access roads needed and estimated disturbance for the Proposed Action, Action Alternative, and the Agency Preferred Alternative segments are shown in Tables 2.2-18 through 2.2-20.

Table 2.2-18 Proposed Action Access Roads and Long-term Disturbance Summary by Segment

SEGMENT	TYPE B (WIDENED EXISTING)	TYPE C (CENTERLINE ACCESS)	TYPE D (SPUR ROADS)	PULL OUTS (10' X 150')	TURN RADIUS	LONG-TERM DISTURBANCE (ACRES)
Arizona						
p-01	38.6	0.0	13.0	3.4	2.7	57.7
p-02	1.5	1.0	0.7	0.0	0.1	3.3
p-03	3.2	2.1	1.4	0.0	0.1	6.8
p-04	8.4	5.5	3.8	0.0	0.4	18.1
p-05	3.0	2.0	1.4	0.0	0.1	6.5
p-06	54.3	35.4	24.6	0.2	2.5	117
p-07	6.5	0.0	2.6	0.6	0.4	10.1
p-08	2.8	0.6	0.8	0.2	0.1	4.5
p-09	12.5	0.6	6.5	1.1	0.7	21.4
p-10[1]	3.7	4.1	4.7	0.4	0.2	13.1
p-11[1]	17.5	4.2	9.1	1.3	0.3	32.4
p-12	13.1	0.7	2.5	0.9	0.4	17.6
p-13	15.1	0.0	2.2	1.0	0.3	18.6
p-14	3.1	1.1	0.8	0.2	0.1	5.3
p-15e	6.6	1.1	7.1	0.6	0.3	15.7
California						
p-15w	0.0	0.0	3.5	0.2	0.6	4.3
p-16	2.6	0.0	3.0	0.3	0.3	6.2
p-17	6.6	0.1	2.0	0.6	0.3	9.6
p-18	5.9	0.0	2.0	0.5	0.3	8.7

[1] Helicopter use is anticipated for these segments.
Access Types A and E would not require any additional ground disturbance.
Construction of the distribution line to the alternative SCS would be accessed via existing routes and no new access would be required.

Table 2.2-19 Alternative Segments Access Roads and Long-term Disturbance Summary by Segment

SEGMENT	TYPE B (WIDENED EXISTING)	TYPE C (CENTERLINE ACCESS)	TYPE D (SPUR ROADS)	PULL OUTS (10' X 150')	TURN RADIUS	LONG-TERM DISTURBANCE (ACRES)
East Plains and Kofa Zone						
d-01	38.4	25.0	17.4	0.1	1.8	82.7
i-01	2.1	18.5	1.8	1.3	0.2	23.9
i-02	0.0	10.9	0.0	0.6	0	11.5
i-03	2.9	50.0	4.8	3.2	0.3	61.2
i-04	19.5	16.3	7.8	2.3	0.6	46.5
in-01	21.1	13.8	9.6	0.1	1.0	45.6
x-01	7.2	4.7	3.3	0.0	0.3	15.5
x-02a	4.9	3.2	2.2	0.0	0.2	10.5
x-02b	5.2	3.4	2.4	0.0	0.2	11.2
x-03	8.6	5.6	3.9	0.0	0.4	18.5
x-04	34.4	22.4	15.6	0.1	1.6	74.1
Quartzsite Zone						
i-05	7.8	7.5	0.0	1.0	0.1	16.4
qn-01	0.9	0.6	0.4	0.0	0.0	1.9
qn-02	16.5	10.7	7.5	0.1	0.8	35.6
qs-01	4.7	3.1	2.1	0.0	0.2	10.1
qs-02	7.3	4.8	3.3	0.0	0.3	15.7
x-05	18.3	15.1	7.7	2.5	0.5	44.1
x-06	21.4	24.2	0.1	2.9	0.1	48.7
x-07	11.8	7.7	5.3	0.0	0.5	25.3

SEGMENT	TYPE B (WIDENED EXISTING)	TYPE C (CENTERLINE ACCESS)	TYPE D (SPUR ROADS)	PULL OUTS (10' X 150')	TURN RADIUS	LONG-TERM DISTURBANCE (ACRES)
Copper Bottom Zone						
cb-01[1]	0.0	0.0	15.2	0.3	0.0	15.5
cb-02[1]	0.0	0.0	0.0	0.0	0.0	0.0
cb-03	6.6	4.3	3.0	0.0	0.3	14.2
cb-04	9.5	1.3	0.8	0.6	0.2	12.4
cb-05	8.7	13.3	0.8	1.2	0.1	24.1
cb-06	6.5	6.3	0.0	0.7	0.1	13.6
i-06	11.0	7.2	5.0	0.0	0.5	23.7
i-07	9.6	6.3	4.4	0.0	0.4	20.7
x-08	2.0	1.3	0.9	0.0	0.1	4.3
Colorado River and California Zone						
Arizona						
cb-10	2.9	1.9	1.3	0.0	0.1	6.2
i-08s	2.0	1.3	0.9	0.0	0.1	4.3
California						
ca-01	10.1	6.6	4.6	0.0	0.5	21.8
ca-02	5.1	3.4	2.3	0.0	0.2	11
ca-04	0.5	0.4	0.2	0.0	0.0	1.1
ca-05	10.1	6.6	4.6	0.0	0.5	21.8
ca-06	9.0	0.0	1.3	0.6	0.3	11.2
ca-07	7.5	1.8	2.3	0.7	0.2	12.5
ca-09	5.7	0.0	2.3	0.5	0.2	8.7
x-09	1.2	0.8	0.5	0.0	0.1	2.6

SEGMENT	TYPE B (WIDENED EXISTING)	TYPE C (CENTERLINE ACCESS)	TYPE D (SPUR ROADS)	PULL OUTS (10’ X 150’)	TURN RADIUS	LONG-TERM DISTURBANCE (ACRES)
x-10	1.9	1.2	0.9	0.0	0.1	4.1
x-11	3.2	2.1	1.5	0.0	0.1	6.9
x-12	7.8	0.0	0.2	0.6	0.2	8.8
x-13	3.1	0.0	0.3	0.2	0.2	3.8
x-15	3.4	0.0	1.1	0.3	0.0	4.8
x-16	4.6	0.0	1.8	0.4	0.3	7.1
x-19	3.7	0.0	1.3	0.3	0.0	5.3

[1] Helicopter access would be required for these segments. Segments cb-01 and cb-02 are alternatives to each other. Should one of these segments be included in the Agency Preferred Alternative, one helicopter staging area of approximately 43.5 acres would be required.

Types A and E access would not require any new disturbance.

Construction of the distribution line to the alternative SCS would be accessed via existing routes and no new access would be required.

Table 2.2-20 Agency Preferred Alternative Access Roads and Long-term Disturbance Summary by Segment

SEGMENT	TYPE B (WIDENED EXISTING)	TYPE C (CENTERLINE ACCESS)	TYPE D (SPUR ROADS)	PULL OUTS (10 X 150’)	TURN RADIUS	LONG-TERM DISTURBANCE (ACRES)
Arizona						
p-01	38.6	0.0	13.0	3.4	2.7	57.7
i-01	2.1	18.5	1.8	1.3	0.2	23.9
i-02	0.0	10.9	0.0	0.6	0	11.5
i-03	2.9	50.0	4.8	3.2	0.3	61.2
i-04	19.5	16.3	7.8	2.3	0.6	46.5
x-05	18.3	15.1	7.7	2.5	0.5	44.1
p-07	6.5	0.0	2.6	0.6	0.4	10.1
p-08	2.8	0.6	0.8	0.2	0.1	4.5

SEGMENT	TYPE B (WIDENED EXISTING)	TYPE C (CENTERLINE ACCESS)	TYPE D (SPUR ROADS)	PULL OUTS (10 X 150')	TURN RADIUS	LONG-TERM DISTURBANCE (ACRES)
p-09	12.5	0.6	6.5	1.1	0.7	21.4
p-10	3.7	4.1	4.7	0.4	0.2	13.1
p-11	17.5	4.2	9.1	1.3	0.3	32.4
p-12	13.1	0.7	2.5	0.9	0.4	17.6
p-13	15.1	0.0	2.2	1.0	0.3	18.6
p-14	3.1	1.1	0.8	0.2	0.1	5.3
p-15e	6.6	1.1	7.1	0.6	0.3	15.7
California						
p-15w	0.0	0.0	3.5	0.2	0.6	4.3
p-16	2.6	0.0	3.0	0.3	0.3	6.2
x-15	3.4	0.0	1.1	0.3	0.0	4.8
x-16	4.6	0.0	1.8	0.4	0.3	7.1
ca-07	7.5	1.8	2.3	0.7	0.2	12.5
ca-09	5.7	0.0	2.3	0.5	0.2	8.7
x-19	3.7	0.0	1.3	0.3	0.0	5.3
Total	204.9	121.9	64.7	28.0	8.7	428.4

[1] Helicopter use is anticipated for these segments.
Access Types A and E would not require any additional ground disturbance.
Construction of the distribution line to the alternative SCS would be accessed via existing routes and no new access would be required.

Helicopter Access

Helicopter support is essential to the wire stringing process, as it provides a vital tool to project managers, field supervisors and crews to facilitate the construction process and to enhance the safety of the crews in the field. It is common to use a light helicopter to string the pilot line. The pilot line is attached to a hard line on the ground, which is then attached to the conductor for actual pulling of the conductor. Landing zones for helicopter operations during stringing on pilot line would be confined to previously disturbed pad sites or puller/tensioner sites throughout the line.

Also, in areas where access roads are not feasible due to particular biological, topographical, archaeological, and/or visual concerns, helicopters would be utilized for structure construction and setting (Type E). Helicopters would utilize material lay down or helicopter fly yards for concrete transfer, steel storage, assembly, and refueling. Two fly yards, one on either side of helicopter construction area, about five miles apart, would be sited in areas that need minimal grading. Duration of use for the fly yards is the same as the duration of construction activity within those segments. There would still be vehicle travel associated with helicopter use for crew and tool access under one of the other access road types described above.

Helicopter access is anticipated under the Proposed Action for Segments p-09, p-10, and p-11. Under the Proposed Action or Action Alternatives (Segments cb-01 or cb-02), in areas where crane access is not feasible, helicopters would be used to assist in foundation construction, airlift in sections of the structures, and to place structures on the poured foundations. Helicopters would pick up pre-assembled subsections of the structures, place them on the foundations, and ground crews would assemble the structures with hardware. This process would continue until the structure is erected.

DCRT or its' construction contractor(s) would ultimately decide the need for helicopter construction usage on the Project if not required by the BLM. The Helicopter Flight and Safety Plan would be included as a part of the final POD. The hours of operation and expected number of miles of structures that could be erected per day would be described in the Helicopter Flight and Safety Plan.

A MD600N type helicopter would be used for wire operations. The helicopter would be used for hauling and supporting men and equipment for the Project. It would also be used to fly sockline, crew members, ladders, baker boards, etc.

Prior to any helicopter operations, a daily tailboard meeting would be held with DCRT and/or their contractor employees, linemen, and the aviation crew. All personnel involved with the operation would clearly understand the scope of the work and the procedures that would be utilized. All persons working with the helicopter would be familiar with head and hand signals in the event of a radio malfunction or garbled reception.

Helicopter operations require helicopter fly yards, preferably one on either side of each helicopter construction area (about 5 miles apart maximum) for supporting helicopter only and helicopter assist construction:

Fly Yard 1 – Segment p-09, 5.8 acres of disturbance

Fly Yard 2 – Segment p-11, 20.0 acres of disturbance

Fly Yard 3 – Segment p-10 (and Alternative Segment cb-01), 7.6 acres of disturbance

Fly Yard 4 – Alternative Fly Yard – Segments cb-01/cb-02, 43.5 acres of disturbance

These fly yard locations were chosen because they limit the need for grading and can be fully reclaimed. Duration of use for the fly yards is the same as the duration of construction activity within the CBPA and the adjacent segments.

The ground area in the fly yards and the ROW would be kept free of any debris and watered down by DCRT and/or their contractor to maintain environmental conditions (dust control). Prior to landing, the helicopter would communicate to water truck personnel and the area would be watered for dust compliance. Personnel would perform a ground walk-through prior to beginning flight operations to identify any potential hazards to persons or property on the surface. Helicopters would use existing disturbance bladed for the Project such as construction sites along the ROW to land.

Table 2.2-19 indicates that Segments cb-01 and cb-02 would require helicopter access for construction. As these locations are situated in remote areas in Copper Bottom Pass, risk to the public from structure transportation is not high. Traffic control measures would be implemented in these remote areas during structure transportation activities.

The Erosion, Dust, and Air Quality Plan, included in the final POD prior to the NTP, would include information about the reduction of dust emissions generated from helicopter use.

2.2.5.9 Induced Currents on Adjacent Facilities

Induced currents on facilities such as metallic structures such as other transmission lines, railroads, pipelines, fences, or structures that are parallel to or cross the transmission line(s) occur to some degree during steady-state operating conditions and during a fault condition on the transmission line(s). Conducted currents on these facilities (directly to ground) occur during fault conditions. For example, during a lightning strike on the line(s), the insulators may flash over, causing a fault condition on the line(s); current would flow down the structure through the grounding system (that is, ground rod or counterpoise) and into the ground.

The magnitude of effects of the AC-induced currents on adjacent facilities is highly dependent on the magnitude of the current flows in the transmission line(s), the proximity and orientation of the adjacent facility to the line(s), and the distance (length) for which the facilities and the line(s) parallel one another in proximity.

The methods and equipment needed to mitigate these conditions would be determined through electrical studies of the specific situation prior to initiation of construction activities. As standard practice and as part of the Project design, electrical equipment and fencing at the substation would be grounded. Grounding of metallic objects outside of, but within 150 feet of the ROW, also may be implemented. These actions address most induced current effects on metallic facilities adjacent to the transmission line by shunting the induced currents to the ground through ground rods, ground mats, and other grounding systems, thus reducing the step and touch

potential a person may experience when touching a metallic object near the line (that is, reducing electric shock potential).

If additional gradient control wires were needed for existing pipelines, they are expected to be located within the existing pipeline ROW. Not knowing the level of mitigation that may be needed, there could possibly be some disturbance from installation of the gradient wires. An electrical study would be conducted once the proximity of the ROW to existing pipelines is known and prior to construction. This study would determine the extent and type of anti-corrosion mitigation that would be required. The gradient wires that may be required could be installed by different methods; trenching, ripping, or a combination of both.

Once the final route and any paralleled facilities, such as pipelines, have been determined, an induction study would also be completed for those facilities affected by the Project. Typically, a distribution supply line is needed to provide power for the compensation stations, fiber optic repeater stations, and cathodic protection equipment. The need for, and locations of, any new distribution lines would be determined as part of the detailed Project design, following issuance of the ROD.

There are two different ways to provide cathodic protection: galvanic and impressed current. The method of cathodic protection would be determined as part of the study, and the most operationally- and cost-effective method to protect the facilities would be used. A distribution line (impressed current) would be used if existing facilities were available. If distribution lines weren’t available where needed, other methods would be researched and used if feasible.

If any distribution lines were potentially required for impressed current cathodic protection, an induction study would be conducted once the Agency Preferred Alternative was selected. Disturbance estimates would be included in the final EIS.

A fiber optic repeater would be located in the SCS, using the same distribution line for backfeed to this substation. For Segment p-06 (Kofa NWR), the distribution line for the SCS would tie-in to the same distribution line used for the DPV project.

The proposed Project would intersect and parallel a Kinder Morgan Energy Partners Natural Gas existing pipeline ROW for a substantial portion of its length. While the width of ROWs varies based on anticipated maintenance needs and negotiations between utilities and landowners, typical pipelines in the region generally have permanent ROW widths of approximately 50 feet.

In the case of a longer parallel facility, such as a pipeline parallel to the Project over many miles, DCRT may undertake additional electrical studies to identify any additional mitigation measures that would need to be implemented to prevent damaging currents from flowing onto the parallel facility and to prevent electrical shock to any people who may come in contact with the parallel facility. Some of the typical MMs that could be considered for implementation, depending on the degree of mitigation needed, can include the following (National Association of Corrosion Engineers International 2014):

- **Fault Shields.** Shallow grounding conductors connected to the affected structure adjacent to overhead electrical transmission structures, poles, substations, etc. They are intended to provide localized protection to the structure and pipeline coating during a fault event from a nearby electric transmission power system.

- **Lumped Grounding.** Localized conductor or conductors connected to the affected structure at strategic locations (for example, at discontinuities). They are intended to protect the structure from both steady-state and fault AC conditions.
- **Gradient Control Wires.** A continuous and long grounding conductor or conductor installed horizontally and parallel to a structure (for example, pipeline section) at strategic lengths and connected at regular intervals. These are intended to provide protection to the structure and pipeline coating during steady-state and fault AC conditions from nearby electric transmission power systems.
- **Gradient Control Mats.** Typically used for aboveground components of a pipeline system, these are buried ground mats bonded to the structure and are used to reduce electrical step and touch voltages in areas where people may come in contact with a structure and be subject to hazardous potentials.

Permanent mats bonded to the structure may be used at valves, metallic vents, cathodic protection test stations, and other aboveground metallic and nonmetallic appurtenances where electrical contact with the affected structure is possible. In these cases, no standard solution exists to solve these issues every time. Instead, each case must be studied to determine the magnitude of the induced currents and the most appropriate mitigation given the ground resistivity, distance paralleled, steady-state and fault currents, fault clearing times expected on the transmission line, and distance between the line and paralleling facilities, to name a few of the parameters. Should the electrical studies indicate a need to install cathodic protection devices on a parallel facility, a distribution supply line interconnection may be needed to provide power to the cathodic protection equipment.

2.2.5.10 Temporary Use Areas

Material staging and laydown yards would be strategically located along the Action Alternative routes, with a total maximum disturbance of 34.5 acres. An average of one staging/crew show-up area per 20 line-miles is assumed for the Project, currently identified in Tonopah, Quartzsite, Salome, and Blythe. Material laydown areas, not to exceed four, would be within the ROW or adjacent. Locations for temporary use areas would be identified in the final POD and would generally be located on previously disturbed lands or in areas that are identified as minimizing environmental impacts. In some locations, only minimal site preparation would be required for material staging, laydown yards, and helicopter fly yard locations. Some areas may need to be scraped, which involves removing the top 6 inches of topsoil, by bulldozer and adding a layer of rock or compacting the dirt and/or applying dust palliatives/tackifier to provide an all-weather surface. It is likely that not all staging areas would be active at the same time. Construction would occur in a sequential manner with access crews, foundation crews, structure erection crews, stringing crews, and cleanup crews working in order throughout the Project. Quick road access is preferred for location selection.

Batch plant operations would be colocated with material staging/laydown yards. A crane would be used to set the batch plant equipment. If a batch plant is needed outside of planned material storage yards, an area of approximately 5 acres would be required. For purposes of disturbance estimates, material staging, material storage, and laydown areas are synonymous. The existing 500kV switchyards at the Delaney and Colorado River substations were designed and constructed to accommodate multiple transmission lines and generation interconnections, and as

such there would not be an expansion to the existing substation acreage or to the existing 500kV buses. No new disturbance would occur outside of the substation property boundaries.

These areas would be used only during construction and reclaimed following completion of construction as described in the Habitat Restoration and Monitoring Plan (Appendix 2B). The sites would be returned to their original contour and stockpiled topsoil would be spread on the surface. Vegetation reclamation would be designed and implemented with the goal to return the short-term disturbance areas to their pre-existing conditions to the extent practicable, given the desert environmental conditions.

To the extent practicable, temporary use areas would be located in previously disturbed areas to minimize impacts to the environment. A Stormwater Pollution Prevention Plan (included in the final POD prior to the NTP) would provide detailed, site-specific steps to minimize construction impacts to the natural environment.

2.2.5.11 Existing Utility Lines and ROW Crossings

A number of existing electric utility ROWs are present near the Project which would require spanning or encroachment. The CAP canal has a varied ROW in the Project vicinity; the Project would cross the canal twice near the Big Horn Mountains and parallel it in areas to the west. The Proposed Action would also cross major roadways, including I-10, Arizona SR 95, California SR 78, and local roads in Maricopa, La Paz, and Riverside Counties, where structures would need to be placed outside of existing ROWs.

Temporary clearance structures called guard structures would be erected over highways, transmission lines, structures, waterways, and other obstacles prior to conductor stringing. The guard structures are typically vertical 16 to 24-inch diameter wood poles with cross arms, on a 2xh-frame configuration (Appendix 7, Figure 2.2-22) and are erected at road crossings or crossings with other energized electric and communication lines to prevent contact during stringing activities.

Bucket trucks may also be used to provide temporary clearance. Bucket trucks are trucks fitted with a hinged arm ending in an enclosed platform called a ¨bucket¨, which can be raised to let the worker in the bucket service aerial equipment. Two crossing guard structures are required per crossing, one on each side.

All guard structures would be located within the Project ROW. The short-term disturbance associated within installation of guard structures would consist of a 50 by 200-foot work area at the base of each structure and three holes approximately 2 feet in diameter, with a total of 10,000 square feet (0.23-acre) of short-term disturbance per each side of the crossing. The installation method of the guard structures would be direct embedding with crushed rock and excavated material. All excavated material for the guard structures would be used to backfill these guard structures. As such, no excavated material would require offsite removal. All topsoil would be salvaged, stockpiled, and replaced on removal of the guard structures and initiation of reclamation activities.

A summary of the number and type of crossings and the associated short-term disturbance for the Proposed Action, Action Alternatives, and the Agency Preferred Alternative, by segment, is provided in Tables 2.2-21 through 2.2-23.

Table 2.2-21 Summary of Guard Crossings Short-term Disturbance by Proposed Action Segment

SEGMENT	ELECTRICAL CROSSINGS	ROAD AND WATER CROSSINGS	TOTAL IMPACT* (ACRES)
Arizona			
p-01	2	21	10.6
p-02	0	0	0.0
p-03	0	0	0.0
p-04	1	4	1.4
p-05	0	1	0.5
p-06	1	7	3.7
p-07	1	2	1.4
p-08	1	1	0.5
p-09	0	1	0.5
p-10	0	1	0.9
p-11	0	0	0
p-12	0	6	2.3
p-13	0	5	2.8
p-14	0	1	0.5
p-15e	0	1	1.4
California			
p-15w	4	17	7.3
p-16	1	6	7.6
p-17	3	0	0.9
p-18	1	0	0.5
Total	15	75	42.8

* Includes disturbance on each side of the crossing.

Table 2.2-22 Summary of Guard Crossings Short-term Disturbance by Alternative Segment

SEGMENT	ELECTRICAL CROSSINGS	ROAD AND WATER CROSSINGS	TOTAL IMPACT (ACRES)*
East Plains and Kofa Zone			
d-01	5	13	5.5
i-01	2	4	2.8
i-02	1	1	0.5
i-03	5	7	5.1
i-04	0	2	2.5
in-01	0	6	2.3
x-01	2	1	0.9
x-02a	0	1	0.5
x-02b	1	1	0.9

SEGMENT	ELECTRICAL CROSSINGS	ROAD AND WATER CROSSINGS	TOTAL IMPACT (ACRES)*
x-03	1	2	1.4
x-04	2	2	1.4
Quartzsite Zone			
i-05	0	1	0.5
qn-01	0	3	0.9
qn-02	3	5	2.3
qs-01	0	1	0.5
qs-02	2	5	2.5
x-05	0	11	5.5
x-06	1	7	3.7
x-07	2	3	2.1
Copper Bottom Zone			
cb-01	1	3	1.6
cb-02	0	0	0.0
cb-03	2	0	0.9
cb-04	0	0	0.0
cb-05	0	4	1.8
cb-06	0	1	0.5
i-06	0	1	0.5
i-07	0	2	0.9
x-08	1	1	0.5
Colorado River and California Zone			
Arizona			
cb-10	1	1	1.1
i-08s	0	3	0.9
California			
ca-01	8	14	6.4
ca-02	2	4	1.8
ca-04	1	3	0.9
ca-05	5	11	4.8
ca-06	2	5	2.3
ca-07	3	1	0.9
ca-09	0	0	0.0
x-09	0	2	0.5
x-10	1	2	0.7
x-11	0	3	1.6
x-12	1	4	1.8
x-13	1	4	1.8

SEGMENT	ELECTRICAL CROSSINGS	ROAD AND WATER CROSSINGS	TOTAL IMPACT (ACRES)*
x-15	0	0	0.0
x-16	0	0	0.0
x-19	1	1	0.7
Other			
Alt SCS Dist. Line	0	1	0.5

* Includes disturbance on each side of the crossing.

Table 2.2-23 Summary of Guard Crossings Short-term Disturbance by Preferred Alternative Segment

SEGMENT	ELECTRICAL CROSSINGS	ROAD AND WATER CROSSINGS	TOTAL IMPACT (ACRES)*
Arizona			
p-01	2	21	10.6
i-01	2	4	2.8
i-02	1	1	0.5
i-03	5	7	5.1
i-04	0	2	2.5
x-05	0	11	5.5
p-07	1	2	1.4
p-08	1	1	0.5
p-09	0	1	0.5
p-10	0	1	0.9
p-11	0	0	0
p-12	0	6	2.3
p-13	0	5	2.8
p-14	0	1	0.5
p-15e	0	1	0.5
California			
p-15w	4	17	7.3
p-16	1	6	7.6
x-15	0	0	0.0
x-16	0	0	0.0
ca-07	3	1	0.9
ca-09	0	0	0.0
x-19	1	1	0.7
Other			
Alt SCS Dist. Line	0	1	0.5
Total	21	90	53.4

* Includes disturbance on each side of the crossing.

2.2.5.12 Construction Water Requirements

Foundation and concrete details pertaining to water use are provided in Table 2.2-24. Water requirements for the Proposed Action, Action Alternatives, and the Agency Preferred Alternative are estimated in Tables 2.2-25 through 2.2-27.

Table 2.2-24 Foundation Details and Construction Water Requirements

STRUCTURE TYPE	CONCRETE PER PIER (CY)	NO. OF PIERS PER STRUCTURE	CONCRETE PER STRUCTURE (CY)	WATER PER STRUCTURE (GALLONS)	NO. OF STRUCTURES	TOTAL CONCRETE (CY)	TOTAL WATER (GALLONS)
Guyed V Structure (Tangent) Foundation	6.3*	4	25.1*	879.7	174	4,367.4	153,067.8
H Frame (Tangent) Foundation	6.5	8	52.4	1,832.6	38	1,991.2	69,638.8
Self-supporting Lattice Tangent Structure Foundation	39.8	4	70.7	2,476.0	138	9,756.6	341,688
Self-supporting Lattice Dead-end Structure Foundation	39.8	4	159.2	5,571.1	37	5,890.4	206,130.7
Monopole	70.7	1	70.7	2,476.0	0	0	0
Snubbing Sites	7.0	3	21.0	733.0	26	546.0	19,058.0
SCS Foundations	6.5	1	6.5	229.1	60	390.0	13,746.0
Substation Dead Ends	39.8	4	159.2	5,571.1	1	159.2	5,571.1
Substation Component Foundations	6.5	4	26.2	916.3	4	104.8	3,665.2
TOTAL						23,205.6	812,565.6

Note: No water would be required for construction of the SCS distribution line.
*Guy wire anchors would use grout not concrete; this entry captures the amount of grout and water required for guy wire anchors.

Table 2.2-25 Construction Water Requirements for the Proposed Action

SEGMENT	LINE MILES	TOTAL STRUCTURES	TOTAL SNUBBING SITES	STRUCTURES* & SNUBBING (GALLONS)	DUST CONTROL (GALLONS)	TOTAL (GALLONS)*
Arizona						
p-01	26.7	88	6	289,028.2	33,701,021.1	33,990,049.3
p-02	1.0	4	0	9,852.2	252,442,1	262,294.4
p-03	2.1	6	1	7,213.5	530,128.4	537,341.9
p-04	5.5	15	2	23,223.6	1,388,431.6	1,411,655.2
p-05	2.0	9	1	10,380.4	504,884.2	515,264.6
p-06	35.6	120	9	226,584.1	9,012,183.2	9,238,767.2
p-07	2.2	7	0	18,648.8	530,128.4	548,777.3
p-08	0.6	2	0	2,111.3	151,465.3	153,576.5
p-09	6.9	23	2	48,674.7	1,741,850.5	1,790, 525.3
p-10	1.1	5	0	14,856	277,686.3	292,542.3
p-11	4.1	14	1	46,190.6	1,035,012.6	1,081,203.2
p-12	2.5	8	0	15,990.4	631,105.3	647,095.6
p-13	3.5	10	0	16,186.1	883,547.4	899,733.5
p-14	0.9	3	0	8,913.6	227,197.9	236,111.5
p-15e	2.8	10	0	40,854.4	706,837.9	747,692.3
California						
p-15w	6.6	24	2	55,310.3	1,666,117.9	1,721,428.2
p-16	4.6	18	1	42,780.1	1,161,233.7	1,204,013.7
p-17	3.1	12	2	41,127.8	782,570.5	823,698.3
p-18	2.4	10	1	38,019.9	605,861.1	643,880.9
Other						
Substations	N/A	60**	N/A	16,493.4	N/A	16,493.4
SCS & Substation Foundations	N/A	4**	N/A	4,398.2	N/A	4,398.2
Total	114.3	421	28	976,837.4	55,789,705.3	56,766,542.6

N/A - not applicable
* Guyed V foundations would be precast; however, grout for guyed V anchors represented here.
**Not included in transmission line structure total as these are equipment foundations.
Assume the water per structure values provided in Table 2.2-24
Dust control estimated at an average of 1,051,842 gallons per mile in Maricopa County and 210,368.4 gallons per mile in all other parts of the Project, average.
No water would be required for construction of the SCS distribution line.

Table 2.2-26 Construction Water Requirements for the Action Alternative Segments

SEGMENT	LINE MILES	TOTAL STRUCTURES	TOTAL SNUBBING SITES	STRUCTURES* AND SNUBBING (GALLONS)	DUST CONTROL (GALLONS)	TOTAL (GALLONS)*
East Plains and Kofa Zone						
d-01	25.2	83	6	145,057.5	31,807,705.3	31,952,762.7
i-01	8.3	28	2	39,722.4	2,095,269.5	2,134,991.9
i-02	3.3	11	2	15,286.9	833,059.0	848,345.9
i-03	19.9	64	7	102,451.9	5,023,597.9	5,126,049.8
i-04	10.5	38	0	116,173.1	2,650,642.1	2,766,815.2
in-01	13.9	53	3	168,169.3	3,508,945.3	3,677,114.6
x-01	4.7	16	1	34,658.9	1,186,477.9	1,221,136.8
x-02a	3.3	12	1	19,177.0	807,814.7	826,991.7
x-02b	3.4	10	1	11,436.0	859,303.2	869,739.2
x-03	5.6	18	2	26,390.5	1,413,675.8	1,440,066.3
x-04	22.7	73	6	87,969.3	5,705,191.6	5,793,160.9
Quartzsite Zone						
i-05	2.8	9	0	26,740.8	706,837.9	733,578.7
qn-01	0.6	3	0	12,627.7	151,465.3	164,093.0
qn-02	10.8	37	3	70,080.0	2,726,374.7	2,796,454.7
qs-01	3.1	10	1	17,065.7	782,570.5	799,636.2
qs-02	4.8	17	1	41,461.3	1,211,722.1	1,253,183.4
x-05	10.2	35	0	45,216.0	2,574,909.5	2,620,125.5
x-06	9.2	30	2	48,714.7	2,322,467.4	2,371,182.1
x-07	7.7	26	2	46,095.0	1,943,804.2	1,989,899.2
Copper Bottom Zone						
cb-01	3.2	15	1	52,875.9	807,814.7	860,690.6
cb-02	2.2	11	1	33,562.9	555,372.6	588,935.5
cb-03	4.3	17	1	81,103.0	1,085,501.1	1,166,604.1
cb-04	1.9	5	0	6,333.8	479,640.0	485,973.8
cb-05	4.4	17	1	23,399.6	1,110,745.3	1,134,144.8
cb-06	1.9	8	0	29,165.3	479,640.0	491,603.5
i-06	7.2	26	2	78,425.5	1,817,583.2	1,896,008.7
i-07	6.3	22	2	40,073.8	1,590,385.3	1,630,459.1
x-08	1.3	5	0	16,654.6	328,174.7	344,829.3

SEGMENT	LINE MILES	TOTAL STRUCTURES	TOTAL SNUBBING SITES	STRUCTURES* AND SNUBBING (GALLONS)	DUST CONTROL (GALLONS)	TOTAL (GALLONS)*
Colorado River and California Zone						
Arizona						
cb-10	1.9	8	0	29,165.3	479,640.0	508,805.3
i-08s	1.3	6	0	24,483.4	328,174.7	352,658.1
California						
ca-01	6.7	26	2	63,422.6	1,691,362.1	1,754,784.7
ca-02	3.4	13	1	35,498.6	858,303.2	893,801.7
ca-04	0.4	2	0	9,656.52	100,976.8	110,633.3
ca-05	6.6	26	2	63,422.6	1,666,117.9	1,729,540.5
ca-06	2.8	10	0	36,368.2	706,837.9	743,206.1
ca-07	3.0	11	1	20,153.9	757,326.3	777,480.2
ca-09	2.6	9	1	17,925.7	656,349.5	674,275.2
x-09	0.8	4	0	14,054.8	201,953.6	216,008.4
x-10	1.3	5	0	15,481.8	328,174.7	343,656.5
x-11	2.1	7	1	26,018.0	530,128.4	556,146.4
x-12	1.3	4	0	11,884.8	328,174.7	340,059.5
x-13	2.0	7	0	24,512.5	504,884.2	529,396.7
x-15	1.4	6	0	13,879.1	353,419.0	367,298.1
x-16	2.3	8	1	14,954.5	580,616.8	595,571.3
x-19	1.0	5	0	25,998.4	252,442.1	278,440.5
Other						
Alt SCS and Substation Upgrades (Gallons)	N/A	N/A	1	20,891.6	N/A	20,891.6

* Guyed V foundations would be precast; however, grout for guyed V anchors represented here.
Assume the water per structure values provided in Table 2.2-24
The Alternative SCS would require the same amount of water for construction as the Proposed Action SCS.
No water would be required for construction of the SCS distribution line.

Table 2.2-27 Construction Water Requirements for the Agency Preferred Alternative

SEGMENT	LINE MILES	TOTAL STRUCTURES	TOTAL SNUBBING SITES	STRUCTURES* & SNUBBING (GALLONS)	DUST CONTROL (GALLONS)	TOTAL (GALLONS)*
Arizona						
p-01	26.7	88	6	289,028.2	33,701,021.1	33,990,049.3
i-01	8.3	27	2	39,722.4	2,095,269.5	2,134,991.9
i-02	3.3	11	2	15,286.9	833,058.9	848,345.8
i-03	19.9	64	7	102,451.9	5,023,597.9	5,126,049.8
i-04	10.5	36	0	116,173.1	2,650,642.1	2,766,815.2
x-05	10.2	31	0	45,216.0	2,574,909.5	2,620,125.5
p-07	2.1	10	0	20,153.9	757,326.3	777,480.2
p-08	0.6	2	0	2,111.3	151,465.3	153,576.5
p-09	6.9	24	2	48,674.7	1,741,850.5	1,790,525.3
p-10	1.1	5	0	14,856.0	277,686.3	292,542.3
p-11	4.1	14	1	46,190.6	1,035,012.6	1,081,203.2
p-12	2.5	9	0	15,990.4	631,105.3	647,095.6
p-13	3.5	11	0	16,186.1	883,547.4	899,733.5
p-14	0.9	3	0	8.913.6	227,197.9	236,111.5
p-15e	2.8	10	0	40,854.4	706,837.9	747,692.3
California						
p-15w	6.6	24	2	55,310.3	1,666,117.9	1,721,428.1
p-16	4.6	18	1	42,780.1	1,161,233.7	1,204,013.7
x-15	1.4	6	0	13,879.1	353,418.9	367,298.0
x-16	2.3	8	1	14,954.5	580,616.8	595,571.3
ca-07	3.0	11	1	20,153.9	757,326.3	777,480.2
ca-09	2.6	9	1	17,925.7	656,349.5	674,275.1
x-19	1.0	5	0	25,998.4	252,442.1	278,440.5
Other						
Alt SCS & Substation Upgrades	N/A	N/A	N/A	20,891.6	N/A	20,891.6
Alt SCS Dist. Line	3.1	55	0	0	0	0
Total	125.0	426	26	1,149,120.2	58,490,835.8	59,639,956.0

* Guyed V foundations would be precast; however, grout for guyed V anchors represented here.
Assume the water per structure values provided in Table 2.2-24.
The Alternative SCS would require the same amount of water for construction as the Proposed Action SCS.
Alternative SCS distribution line not included in line mile total. No water would be required for construction of the SCS distribution line.

2.2.5.13 Disposal and Cleanup

See Section 2.2.5.13 of Chapter 2.

2.2.5.14 Construction Reclamation

Cleanup

Construction sites, material storage, laydown yards, batch plants, and access roads would be kept in an orderly condition throughout the construction period in conformance with the Waste Management Plan for the Project (to be included in the final POD). Refuse and trash, including stakes and flagging, would be removed from the work areas and disposed of in local permitted landfills in accordance with local ordinances. There would be no open burning or on-site disposal of construction trash at any time during the life of the Project. Once the cleanup crew has completed a section of line, the staging area serving that portion of the line would be decommissioned and fencing around storage yards would be removed.

Soil Stabilization

Ruts and holes due to construction activities would be regraded. Disturbed surfaces would be reclaimed to as near the original contour of the land surface as possible. Permitted water diversions would be constructed along the ROW, as needed, to control surface water and minimize soil erosion. Temporary construction roads, not required for future maintenance access, would be reclaimed after construction of the Project is complete. For example, access roads to staging areas would not be required once the staging area is regraded and vegetated. Areas of soil compaction, including temporary roads and reclaimed existing roads, would be scarified as prescribed in the Habitat Restoration and Monitoring Plan (Appendix 2B). Unless directed by the landowner, the rock placed on temporary use areas (material staging, laydown, and batch plant locations, for example) would be removed from the staging area upon completion of construction, and the area reclaimed. A number of BMPs for soil stabilization would be implemented in disturbed areas. Possible stabilization methods may include reseeding, contouring of the land surface, use of water control and diversion techniques, compacting or de-compacting of underlying soil if appropriate, sediment control devices and rolled erosion control systems (RECS) because they are typically sold in rolls for ease of storage and installation and others. A detailed assessment of available stabilization procedures and technologies is included in the Habitat Restoration and Monitoring Plan for the Project.

Revegetation

Appropriate site-specific seed mixes for revegetation would be used for varying site conditions and would be specified in the Habitat Restoration and Monitoring Plan (Appendix 2B). Salvaged native plants would be used for revegetation, if appropriate, along with seeding using BLM-recommended and approved seed mixes. Preferably, seeding would occur during the months from November to January following transmission line construction. Specific details for revegetation activities would be described in the approved POD or within the Habitat Restoration and Monitoring Plan prepared for this Project. Part of the Habitat Restoration and Monitoring Plan would be the inclusion of specific success criteria that must be met to demonstrate compliance with vegetation requirements. Water requirements for revegetation would be estimated in conjunction with preparation of the Habitat Restoration and Monitoring Plan.

DCRT would adhere to Arizona's Native Plant Law, and any California legal requirements, and would work with the applicable jurisdictions to implement reclamation and reseeding of construction-disturbed areas sites, in accordance with BLM, state, and local requirements. Plants would be salvaged on state trust lands, while safeguarded and salvage restricted plants protected by the Arizona Native Plant Law would likely be salvaged on BLM and private lands, pending a decision by the BLM in accordance with the Habitat Restoration and Monitoring Plan (Appendix 2B). All plant material not salvaged could either be broken up to potentially aid in revegetation efforts and/or completely removed from the area and disposed of at an appropriate disposal facility in compliance with the Vegetation Management Plan (Appendix 2B, Section 2B.11) for the Project.

2.2.5.15 Construction Workforce and Schedule

The estimated number of workers and types of equipment required to construct the proposed transmission line are shown in Table 2.2-28 and are subject to adjustment as Project planning evolves. The estimated number of workers and types of equipment required to construct the SCS are provided in Table 2.2-29. Various phases of construction would occur at different locations throughout the construction process, and in some cases at the same time at different locations. Regular field meetings would be held with the CIC and environmental monitors to coordinate construction activities with monitoring requirements for the transmission line and ancillary facilities.

The transmission line workforce and equipment listed in Table 2.2-28 would also be used for reclamation. The workforce required for reclamation for the SCS is included in Table 2.2-29. Crew parking would be accommodated at a central staging area. Crews would then be sent out to work sites together via carpool. The central location required for crew parking would be located at one of the material storage yards closest to the work area. The most probable locations are Blythe, Quartzsite, Tonopah, and adjacent to the SCS, but the location would depend on the final route selected by the BLM. The transmission line labor force and equipment requirements provided in Table 2.2-28 is for one work front. All the following activities, except ROW survey and geotechnical investigation, would operate in up to two work fronts, simultaneously.

Table 2.2-28 Transmission Line Labor Force and Equipment Requirements

ACTIVITY	WORK DAYS	EQUIPMENT TYPE	NUMBER OF EQUIPMENT	STARTING MONTH	DURATION MONTHS*	CREW
Access Road Construction	242	Bulldozers, D6 or D8	2	1	4.5	8
	242	Graders	2	1	4.5	
	242	Backhoe	2	1	4.5	
	484	2-ton truck	4	1	4.5	
	121	Skidsteer loader	1	1	4.5	
	121	Mini excavator	1	1	4.5	
	121	Tractor with seeding equipment	1	1	4.5	
	242	Pick-up truck	2	1	4.5	
	242	Water pump	2	1	4.5	
	242	Water truck	2	1	4.5	

ACTIVITY	WORK DAYS	EQUIPMENT TYPE	NUMBER OF EQUIPMENT	STARTING MONTH	DURATION MONTHS*	CREW
Mechanics	1488	Mechanics truck (2-ton)	4	-2	16	4
	1488	Portable Power unit 20kW	4	02	16	
Foundation Installation	602	Track-mounted drill rig	2	1	12	24
	301	Excavator	1	1	12	
	301	Rock Drill Rig	1	1	12	
	301	2-axle Lo-Boy Trailer	1	1	12	
	602	Wagon drills	2	1	12	
	301	40-ton Crane	1	1	12	
	602	Portable Power Unit 20kW	2	1	12	
	602	High Pressure Grout Plant Colloidal Mixer	2	1	12	
	602	Air Compressor 185 cfm	2	1	12	
	602	Backhoe	2	1	12	
	1806	Pick-up truck	6	1	12	
	602	Boom truck 33-35T	2	1	12	
	602	Concrete truck	2	1	12	
	602	Water truck	2	1	12	
	1204	Telehandler Forklift	4	1	12	
	308	Front-end loader	2	2	7	
	602	Dump truck	2	1	12	
	602	Flatbed/ boom trucks	2	1	12	
	1806	2-ton trucks	4	2	7	
	301	Water truck	1	1	12	
	602	Water pump	2	1	12	
	105	*Chinook CH-47D Helicopter	1	7	3	
Laydown yard/receiving	262	60-ton crane	1	-2	9	8
	524	Forklifts	2	-2	9	
	524	Telehandler Forklift	2	-2	9	
	524	Pick-up Truck	2	-2	9	
Structure hauling	313	Boom truck	1	1	12	4
	626	Flatbed trailers	2	1	12	
	313	Forklift	1	1	12	
	313	Pick-up truck	1	1	12	

ACTIVITY	WORK DAYS	EQUIPMENT TYPE	NUMBER OF EQUIPMENT	STARTING MONTH	DURATION MONTHS*	CREW
Structure assembly	1565	2-ton Truck	5	1	12	20
	1252	Pick-up truck	4	1	12	
	1252	Telehandler Forklift	4	1	12	
	626	40-ton crane	2	1	12	
	626	Air Compressor 185 cfm	2	1	12	
	626	Portable Power unit 20kW	2	1	12	
	313	Water truck	1	1	12	
	313	Water pump	1	1	12	
Structure erection	626	100-ton cranes	2	1	12	20
	1252	Boom truck 33-35T	4	1	12	
	1565	2-ton trucks	5	1	12	
	1565	Pick-up truck	5	1	12	
	313	275 Ton Crane	1	1	12	
	313	Air Compressor 185 cfm	1	1	12	
	626	Telehandler Forklift	2	1	12	
	70	*Chinook CH-47D Helicopter	1	9	2	
Wire Stringing	750	Drum puller	5	6	7	34
	732	Haul trailers	4	6	7	
	300	Tensioners	2	6	7	
	242	D8 Cat/dozer/winch	2	6	7	
	300	Splicing truck	2	6	7	
	549	Portable Power Unit 20kW	3	6	7	
	366	Digger Derrick	2	6	7	
	183	100-ton Crane	1	6	7	
	549	Flatbed trailers	3	6	7	
	732	55-ton Crane	4	6	7	
	450	Morpac Spacer Carts	3	6	7	
	366	Front-end Loader	2	6	7	
	1098	Telehandler Forklift	6	6	7	
	366	Backhoe	2	6	7	
	732	Air Compressor 185 cfm	4	6	7	
	366	100-ft bucket truck	2	6	7	
	1098	2-ton truck	6	6	7	
	366	40-ton cranes	2	6	7	
	1098	Boom truck 33-35T	6	6	7	
	440	2-ton winch trucks	6	6	7	
	300	Splicing truck	2	6	7	

ACTIVITY	WORK DAYS	EQUIPMENT TYPE	NUMBER OF EQUIPMENT	STARTING MONTH	DURATION MONTHS*	CREW
Wire Stringing Cont.	183	Water pump	1	6	7	
	183	Water truck	1	6	7	
	1464	Pick-up truck	8	6	7	
	121	*MD-500D (369D) Helicopter	1	6	7	
Road/ROW Restoration	115	Bulldozers D8	1	8	6	8
	115	Excavator	1	8	6	
	230	Water Pump	2	8	6	
	115	Tractor with seeding equipment	1	8	6	
	115	Grader	1	8	6	
	345	2-ton truck	3	8	6	
	115	Mini excavator	1	8	6	
	115	Skidsteer loader	1	8	6	
	230	Backhoe	2	8	6	
	345	Pick-up truck	3	8	6	
	115	Dump truck	1	8	6	
	230	Water Pump	2	8	6	
	230	Water truck	2	8	6	
Clean up/ Reclamation	30	Flatbed truck with bucket	1	13	1	4
	60	Pick-up truck	2	13	1	

*Number of months during which this activity may occur, as work days may not be consecutive
Note: these labor force and equipment lists represent approximate requirements.

The information provided in Table 2.2-29 is for one work front. All the following activities would operate in up to two work fronts simultaneously.

Crew parking would be located at one of the material storage yards closest to the work area.

Table 2.2-29 SCS Labor Force and Equipment Requirements

ACTIVITY	WORK DAYS	EQUIPMENT TYPE	NUMBER OF EQUIPMENT	STARTING MONTH	DURATION MONTHS	CREW
Site Grading & Surfacing	50	CAT 623 Scraper	1	4	2	4
	50	CAT 140H Blade	1	4	2	
	50	Mid-size Dozer	1	4	2	
	100	2-ton truck	2	4	2	
	100	Pick-up truck	2	4	2	
	50	Sheepfoot roller	1	4	2	
	50	Smooth Drum Roller	1	4	2	
	50	Walk behind roller	1	4	2	
	50	CAT 950 Loader	1	4	2	
	50	30-ton Excavator	1	4	2	
	70	Track Mounted Drill Rig	1	6	2.5	
	140	Backhoe	2	6	2.5	
	70	Concrete truck	1	6	2.5	
	70	40-ton Crane	1	6	2.5	
	70	Telehandler Forklift	1	6	2.5	
	70	Air Compressor 185 cfm	1	6	2.5	
SCS Equipment Install & Steel Erection	80	Mini Excavator	1	8.5	6.5	10
	80	Backhoe	1	8.5	6.5	
	80	2-ton Truck	1	8.5	6.5	
	240	2-ton Truck	2	8.5	6.5	
	80	Pick-up Truck	1	8.5	6.5	
	240	Pick-up Truck	2	8.5	6.5	
	120	40-foot manlifts	1	8.5	6.5	
	120	60-foot manlifts	1	8.5	6.5	
	120	90-foot manlift	1	8.5	6.5	
	100	Skidsteer loader	1	8.5	6.5	
	80	Trencher	1	8.5	6.5	
	20	60-ton Crane	1	8.5	6.5	
	240	5-ton forklifts	2	8.5	6.5	

Equipment trip estimates for construction and reclamation are provided in Table 2.2-30.

Table 2.2-30 Equipment Transportation Estimates

ACTIVITY	SUBACTIVITY	MONTH STARTING	DURING MONTHS	VEHICLE/ TRUCK TYPE	TOTAL NUMBER OF LOADS	TOTAL MILES	NUMBER OF TRUCKS/ VEHICLES REQUIRED
Foundation installation	Concrete transport from batch plant to site	1	12	Concrete truck	2,837	35,464	5
	Aggregates transport from quarry to batch plants	1	12	Dump truck	911	119,901	3
	Water transport from well to batch plants	1	12	Water truck	553	72,784	1
	Rebar/anchor bolt transport from material storage to site	1	12	Flatbed Trailer	323	4,038	1
	Guyed V grout and precast pedestal transport from material storage to site	1	12	Flatbed Trailer	107	1,338	1
Access roads	Aggregates transport from quarry to roads	1	4.5	Dump truck	4,237	557,592	28
Dust control	Water from well to roads	1	18	Water truck	22,587	2,972,461	2
Material procurement and transport	Rebar/anchor bolt transport from factory to material storage	1	12	Flatbed Trailer	323	419,900	2
	Guyed V grout and precast pedestal transport from factory to material storage	1	12	Flatbed Trailer	107	139,100	2
	Structure transport from factory to material storage	1	3	40-foot container truck	276	689,232	26
	Conductor from factory to material storage	4	3		194	678,211	25
	OPGW and extra high strength guy strand from factory to material storage	4	1		8	29,732	3
	Insulators from factory to material storage	3	1		4	9,497	1
	Fittings, grounding, spares from manufacturer to material storage/site	10	2		14	34,462	2
	Substation material	4	8		20	2,000	1

ACTIVITY	SUBACTIVITY	MONTH STARTING	DURING MONTHS	VEHICLE/ TRUCK TYPE	TOTAL NUMBER OF LOADS	TOTAL MILES	NUMBER OF TRUCKS/ VEHICLES REQUIRED
Structure hauling	Structures from material storage to site	5	7	Flatbed trailer	551	6,888	2
Wire stringing	Conductor and OPGW from material storage to site	12	5	Wire reel trailer	405	5,057	2
ROW Survey	Workers daily commute	1	1	Pick-up truck	42	3,360	2
Access road construction		1	5		420	33,600	2
Foundation installation		2	7		1764	141,120	12
Structure hauling		6	8		336	26,880	2
Structure assembly		6	8		1344	107,520	8
Wire stringing		12	5		1050	84,000	10
Road/ROW reclamation		15	3		252	20,160	4
Clean up/Reclamation		15	3		252	20,160	4
Substation construction		6	12		2520	126,000	10

Schedule

DCRT would commence construction upon timely receipt of necessary permits and ROW approvals. Table 2.2-31 below outlines the construction task, phase, and anticipated duration.

Table 2.2-31 Construction Schedule

TASK/PHASE	DURATION (DAYS)
TRANSMISSION AND DISTRIBUTION LINE CONSTRUCTION	**934**
Project Execution Plan	11
Design and Engineering	428
Procurement	229
Construction Mobilization and Recruitment	15
Access Road construction	128
Foundations	365
Structure Erection and Assembly	363
Wire Stringing and Installation of Cables and Accessories	213
Commissioning and Testing	57
SERIES COMPENSATION STATION & SUBSTATION CONSTRUCTION	**431**
Procurement	347
Capacitor Bank	33
Protections	109
Civil Works	37
Erection and Assembly Works	33
Install Control Building and Equipment	70
Commissioning and Testing	37

2.2.5.16 Project Construction Closeout

See Chapter 2.

2.2.5.17 Estimated Disturbance Summary

See Chapter 2.

2.2.6 Project Operation and Maintenance

The anticipated operations and maintenance duration is 50 years.

The NESC (ANSI C2), which governs the design and operation of high-voltage electric utility systems, obligates the applicant to maintain reliable operation of the electrical system. The design, operation, and maintenance of the Project would meet or exceed applicable criteria and requirements outlined by NESC, FERC, WECC, Avian Power Line Interaction Committee

recommendations, and U.S. Department of Labor Occupational Safety and Health Standards for the safety and protection of landowners, their property, and the general public.

In 2005, Congress passed the Energy Policy Act of 2005, which provided a regulatory basis for implementing specific incentives (and penalties) for maintaining reliable service, among other issues. As a result of the passage of the Energy Policy Act of 2005, FERC selected NERC to act as the enforcement agency for compliance with electric utility reliability and operating standards, among other issues. DCRT is required to comply with the various reliability standards promulgated through implementation of NERC policies and procedures. Additionally, DCRT is governed by WECC standards that may be in addition to or more stringent than those put forth by NERC.

2.2.6.1 Building and Fence Grounding

To mitigate possible electric shock caused by electrostatic and electromagnetic induction, all buildings, fences, center pivot irrigation systems, and other structures with metal surfaces within 150 feet of the centerline of the ROW would be grounded to the mutual satisfaction of the parties involved. Typically, residential buildings more than 150 feet from the centerline would not require grounding. Other buildings or structures beyond 150 feet from the centerline would be reviewed in accordance with the NESC to determine grounding requirements. All metal irrigation systems and fences that parallel the transmission line for distances of 500 feet or more, within 150 feet of the centerline, would be grounded (none identified at this time). All fences that cross under the transmission line would also need to be grounded. This procedure would be included in the construction specifications and, if grounding is required outside the ROW, temporary use permits or landowner consent would be obtained, as necessary.

2.2.6.2 Inspections and Maintenance

Regular inspection of transmission lines, substations, distribution lines, and support systems is critical for the Project's safe, efficient, and economical operation. Operation and maintenance activities would include transmission line patrols, annual inspections, structure and wire maintenance, and repairs of access roads.

Transmission Line Maintenance

The transmission lines would be inspected annually or as required by using fixed-wing aircraft, helicopters, ground vehicles, all-terrain vehicles, or on foot. The transmission lines and substations would be inspected for corrosion, equipment misalignment, loose fittings, vandalism, and other mechanical problems. The need for vegetation management would also be determined during inspection patrols.

Maintenance would be performed as needed. The comfort and safety of land users and local residents would be provided for by limiting noise, dust, and the danger caused by maintenance vehicle traffic. Where access is required for nonemergency maintenance and repairs, the same precautions against ground disturbance that were taken during construction would be followed, and restrictions and MMs applicable during initial construction would be followed in areas of critical biological and cultural resource concern. Any berms or boulders that were in place also would be reclaimed after completion of the maintenance work.

Reclamation procedures following completion of repair work would be similar to those prescribed during construction (Section 2.2.5.14). Damage repair may require the same types of equipment used during construction, including power augers for hole boring, backhoes for excavation, and/or concrete trucks and cranes for structure erection. Other required equipment may include power tensioners, pullers, wire trailers, crawler tractors, and trucks and pickups for hauling materials, tools, and workers. Under certain conditions, a helicopter may be used to haul in material and erect structures or string conductor in those areas where access and/or terrain conditions preclude the use of conventional methods. If structures cannot be accessed by a permanent road, workers may access structures by helicopter, foot, or all-terrain vehicle. Any necessary temporary staging areas outside the ROW would require authorization from the applicable landowner(s). Site and access road disturbances such as ruts created during damage operations would be reclaimed to satisfactory condition using rehabilitation procedures.

A permanent work area at the base of each structure is required for long-term maintenance. While revegetation would occur in this work area, minimal contouring would be performed. If, during transmission line maintenance and monitoring, it is determined that new or reconstruction activities should be implemented, DCRT would notify BLM, property owners, and/or other regulatory agencies, and obtain proper approvals, as necessary, prior to initiating new or reconstruction.

Dust control during maintenance of the transmission line would be managed the same as during construction (Section 2.2.5.1).

Vegetation Management

When necessary and approved by the BLM, DCRT would limit the height of vegetation along the ROW according to minimum conductor clearances required for the Project. Where vegetation presents a potential hazard, trees would be trimmed or cut to prevent accidental grounding contact with conductors. The transmission line would be protected with power circuit breakers and line relay protection equipment. If a conductor failure occurs, power would be automatically removed from the line. Lightning protection would be provided by ground wires and OPGW on top of the structures.

The Vegetation Management Plan (Appendix 2B, Section 2B.11) describes measures needed to control vegetation during operation of the transmission line and at associated facilities. The goal of the Project design would be to design for conductor heights that would eliminate or minimize the need for control of height of vegetation, while assuring the Project would be in conformance with NERC guidelines and in compliance with the Arizona Native Plant Law, and any California legal requirements. Should it be required, the Vegetation Management Plan would specify controls for situations where tall vegetation such as saguaro cacti, ironwood, and paloverde growing under and immediately adjacent to the path of the conductors would need to be trimmed or removed to maintain a safe clearance and to reduce the risk of power outages, fires, and other damage. As a part of the Vegetation Management Plan, a wire zone/border zone approach would be applied (Appendix 7, Figure 2.2-23a), incorporating growth rates of tall vegetation within the Project ROW, as detailed in the Vegetation Management Plan. Extensive vegetation management is only anticipated in discrete areas within the Project Area where fast growing, tall species are present. Where necessary, saguaro cacti and other protected plants that must be

removed would be salvaged and relocated in accordance with the Arizona Native Plant Law and the Habitat Restoration and Monitoring Plan (Appendix 2B) for the Project.

The conductor's position in space at any point in time is continuously changing in reaction to a number of different loading variables. Changes in vertical and horizontal conductor positioning are the result of thermal and physical loads applied to the line. Thermal loading is a function of line current and the combination of numerous variables influencing ambient heat dissipation including wind velocity/direction, ambient air temperature and precipitation. Physical loading applied to the conductor affects sag and sway by combining physical factors such as ice and wind loading. The movement of the transmission line conductor due to wind is illustrated in Figure 2.2-23a in Appendix 7 (depending on wind conditions and conductor maximum deflection).

The NESC requires 36.25 feet clearance between the maximum point of conductor sag and the ground. The Minimum Vegetation Clearance Distance (MVCD) required by the NERC for a 500kV transmission line is 7.4 feet, at an elevation between 2,000 and 3,000 feet. Winds can blow conductors away from the transmission structures, where the conductor could connect with or arc over to nearby vegetation. The furthest point a conductor could be blown from the transmission structure is the conductor maximum deflection.

The Project would be required to be inspected annually, including the incursion of vegetation growth. Palo Verde are predicted to be the quickest growing large vegetation that could interfere with the conductor, growing an average of 36 inches per year, and could intrude on the Project either vertically or radially. The Wire Security Zone is the distance between the maximum point of conductor sag and vegetation (either vertically or radially). For estimating purposes, the Wire Security Zone would add 9 feet (3 feet for vegetation growth plus a 6-foot buffer) to the MVCD, for a total of 16 feet 5 inches beyond the point of conductor maximum sag or deflection. Therefore, the maximum height of vegetation vertically and radially from the conductors at maximum sag or deflection would be approximately 13 feet 10 inches. Border zone vegetation would be height limited at to 31 feet 7 inches, gradually increasing as the distance to the conductor increases (Appendix 7, Figure 2.2-23b). Vegetation may be required to be treated according to the Vegetation Management Plan (Appendix 2B, Section 2B.11), should design adjustments, micrositing, or other avoidance measures (Appendix 2A, Section 2A.4) not be feasible or fully resolve the situation.

DCRT would comply with agency requirements regarding management of noxious weeds and invasive species within the ROW, along access roads, and at temporary use areas (for example, cleaning equipment to prevent spread of noxious weeds and invasive species), as specified in the Noxious Weed Control Plan (Appendix 2B, Section 2B.11). Chemical treatment within or adjacent to the ROW generally would be limited only to areas with noxious weeds or invasive species, and only if absolutely necessary and in accordance with the Noxious Weed Management Plan. Should the use of herbicides or pesticides be necessary, only BLM-approved products from the approved California herbicide list would be used, and only upon prior approval of the BLM Authorized Officer or owner. A pesticide use proposal (PUP) must be completed by all persons using any chemicals on BLM-administered land. End of year reports must be turned in at the completion of every calendar year. Use of pesticides and herbicides on lands that fall under the CDCA Plan as amended by the DRECP would adhere to the CMAs regulating those activities.

Series Compensation Station Maintenance

The SCS requires minor maintenance once yearly for approximately 3 to 5 days, depending on the tasks required. A crew comprised of up to four electricians and two specialists would perform this work using a man lift.

Maintenance, patrolling, and monitoring of the SCS distribution line would include ground maintenance patrols that would review the line periodically. Routine maintenance would include replacing damaged insulators as needed and tightening nuts and bolts, as well as vegetation maintenance. Access for operation and maintenance would be traveling overland within the ROW or on adjacent roads.

Substation Maintenance

It would be the responsibility of the interconnecting utilities, SCE and APS, to perform maintenance on all equipment associated with the Project inside their respective substations (APS Delaney and SCE Colorado River Substations).

Maintenance, patrolling, and monitoring of the rest of the Project, including the SCS, would be the responsibility of DCRT and would be performed on a routine basis in accordance with industry standards and manufacturer guidelines. If a large volume of a contaminant were to leak from a piece of electrical equipment, an automated alert would notify the operations center of the problem. A trained maintenance crew would be dispatched to the substation or SCS immediately to begin repairs and clean up according to all appropriate regulations and procedures.

2.2.6.3 Long-Term Access to the ROW

Authorized access roads would be used only for maintenance purposes upon completion of construction. Where long-term access is required for maintenance and operation and authorized by the BLM or other underlying landowners/managers, DCRT would maintain the ROW in a safe, useable condition. A regular maintenance program may include, but would not be limited to, blading, ditching, culvert installation, and surfacing. Access maintenance would not be initiated prior to obtaining necessary authorization from landowners or land management agencies.

Maintenance vehicles would require access to the ROW once yearly for transmission line inspection. Where the ground is uneven at drainage crossings, special precautions would be taken to ensure equipment blades do not destroy vegetation.

2.2.6.4 Signs and Markers

Warning signs would be placed on structures and at substations, marking high-voltage danger areas in accordance with industry standards.

2.2.6.5 Energy Use During Operations and Maintenance

Strengthening the regional transmission system in Arizona and California by adding additional capacity and alleviating grid congestion would indirectly facilitate increased consumption of energy by meeting increased electricity demand (Section 1.2.2). However, increases in per capita energy use are not expected to result from implementation of the Project. Nevertheless, a direct effect of this grid congestion reduction is that the Project would improve energy reliability. The Project would also facilitate the development of new renewable energy sources. Vehicle trips and equipment use during operation would be minimal and have a negligible impact on energy consumption. Nevertheless, the Project would incorporate measures in maintenance procedures to reduce wasteful energy use during operation as well.

The conductor selected for the Project, and the increase in section allowed by the triple-bundle configuration, would reduce energy losses. Aluminum conductor steel-reinforced design (ACSR) selection allows the use of aluminum, a metal with high conductivity, while steel provides the tensile strength required.

Transmission losses are also directly proportional to the square of the power transmitted, and therefore operation of this line in parallel with the DPV1, would allow power to be distributed between both lines, and therefore reducing overall transmission losses for the same amount of power transmitted.

2.2.6.6 Radio or Television Interference

DCRT would respond to complaints of radio or television interference generated by the transmission line by investigating complaints and implementing appropriate MMs, if necessary. The transmission line would be inspected on a regular basis so that damaged insulators or other components that could cause interference are repaired or replaced. These patrols would be the same thing as routine inspections and monitoring, unless a problem is reported; then a special patrol or maintenance might be done to mitigate an issue.

2.2.6.7 Contingency Planning

A representative would be selected by DCRT to provide routine and emergency planning for situations such as power outages, equipment upgrades, and fire control. The designated representative would have the authority to receive and carry out instructions from BLM.

2.2.6.8 Emergency Procedures

In the event of an emergency, crews would be dispatched quickly to repair or replace any damaged equipment. Every attempt would be made to contact the appropriate agencies or landowners along the ROW. In the event notification cannot be made, repair operations would proceed only in the case of an emergency situation with notification occurring within 48 hours after the emergency incident. Reasonable efforts would be made to protect plants, wildlife, and other resources, and minimize ground disturbance.

Emergency response procedures would be implemented for the following potential events or similar events, in conformance with the Emergency Response Plan for the Project (to be provided in conjunction with the final POD):

- downed transmission lines, damaged structures and/or conductors, or equipment failure
- fires
- sudden loss of power
- natural disasters
- serious personal injury

2.2.6.9 Compatible Uses

After construction, compatible uses in the ROW on public land would be considered and approved (if necessary) by BLM in consultation with DCRT. Examples of compatible uses within the ROW include grazing, vehicle and pedestrian access to cross under the line, recreational use, low growing vegetation, and preexisting compatible uses. Examples of uses generally not compatible with high-voltage transmission lines include commercial or residential development and any use that requires changes in surface elevation that affect electrical clearances of existing or planned facilities. Compatible uses of the ROW on Federally managed lands would have to be approved by the appropriate agency. Compatible uses within easements on private land crossed by the transmission line would be similar to those on public land and would be consistent with the terms of the easement.

2.2.7 Termination, Reclamation, and Decommissioning

Should the ROW and facilities no longer be needed, the transmission lines and associated facilities would be decommissioned on BLM-managed land. Subsequently, conductors, insulators, concrete pads for the SCS and associated facilities, and hardware would be dismantled and removed from the ROW. Transmission structures would be removed and foundations broken off at least 2 feet below ground surface. All areas of long-term disturbance would be reclaimed in accordance with a Decommissioning Plan.

Access routes and other sites disturbed during decommissioning would be reclaimed and revegetated in accordance with a Decommissioning Plan to be approved by BLM. Implementation of this plan is intended to minimize the impacts of decommissioning activities and ensure that all areas temporarily disturbed during decommissioning are returned to their prior condition. Selected contractors would also be required to develop a stormwater pollution prevention plan (SWPPP), which would provide detailed, site-specific steps to minimize impacts to the natural environment. Soil would be de-compacted and sites would be returned to their original contour where possible, salvaged topsoil distributed, and water diversions and other erosion control measures established where necessary. A site-specific mix of native seeds would be planted using BLM-approved methods, and vegetation that had been salvaged and maintained in a nursery would be planted in accordance with the approved Habitat Restoration and Monitoring Plan provided in the Reclamation, Vegetation, and Monitoring Plan. Revegetated sites would be monitored periodically to evaluate the effectiveness of erosion control measures,

inventory and control weeds, compare the progress of vegetation recovery to predetermined reclamation success criteria, and identify any additional treatment required to achieve those criteria.

Prior to termination of the ROW, the holder shall contact the BLM Authorized Officer to arrange a joint inspection of the ROW. This inspection would be held to facilitate an acceptable Decommissioning Plan. The BLM Authorized Officer must approve the Plan in writing prior to commencement of any termination activities. The Decommissioning Plan would be reviewed and approved by the BLM Authorized Officer and would include the following information:

- what facilities and access routes are to be removed, reclaimed, and/or rehabilitated;
- how facilities and access routes would be removed and the disturbed areas reclaimed;
- time of year the facilities and access routes would be removed;
- timeline or schedule of removal and reclamation activities;
- stabilization and reclamation techniques to be used during reclamation;
- appropriate BLM approved environmental analysis of the plan;
- criteria that reclamation should meet to be considered complete;
- monitoring of the stabilization and reclamation techniques for an established time period; and
- any environmental stipulations necessary for the protection of sensitive environmental and cultural resource locations

Decommissioning would be a separate undertaking under the National Historic Preservation Act, as stipulated in the revised draft PA.

2.2.8 Applicant Proposed Measures and BLM Best Management Practices

See Chapter 2.

2.2.9 Alternative Segments Considered but Eliminated from Detailed Analysis

A summary of alternative segments not carried forward for detailed analysis is provided in Table 2.2-32 and shown on Figures 2.2-24 through 2.2-27 (Appendix 7).

2.3 COMPARISON OF ALTERNATIVES

A comparison of impacts by segment and subalternatives is provided in Tables 2.2-33a-b, 2.2-34a-b, 2.2-35a-c, and 2.2-36a-d; and Tables 2.2-37 through 2.2-41, respectively.

Table 2.2-32 Alternative Segments Eliminated from Detailed Analysis

ALTERNATIVE/ SEGMENT (LENGTH IN MILES)	SEGMENT DESCRIPTION	ALTERNATIVES SCREENING CRITERIA				REASON ELIMINATED FROM DETAILED ANALYSIS
		CONSISTENT WITH PURPOSE AND NEED?	TECHNICALLY FEASIBLE?	ECONOMICALLY FEASIBLE?	ENVIRONMENTALLY SUPERIOR?	
East Plains & Kofa Zone						
ASLD-A (21.4)	Alternative to Segment p-06, x-04. Connects the Proposed Action to segments paralleling I-10; avoids the Kofa NWR. Suggested by ASLD to avoid Arizona state trust land parcels near I-10 Follows existing Kinder Morgan–El Paso Natural Gas pipeline; could share access to reduce disturbance.	Yes	Yes	Yes	No, would have similar impacts to Segment x-04, but slightly longer/less direct. Segment x-04 would better utilize existing access along the gas pipeline road.	Segment x-04 would be superior.
BLM-1 (21.8)	Alternative to Segments p-01, d-01 Parallels I-10 on south side Almost entirely on Arizona state trust and private land; within utility corridor on BLM-administered land.	Yes	Yes	Yes	No, although this segment would be shorter and would have 2 less crossings of I-10 and the CAP than the Proposed Action (p-01), it would require more new disturbance and new access as compared to the Proposed Action (p-01) and d-01, which parallel existing linear utilities with existing access. Also, this segment would require an unreasonable amount of negotiations with numerous private landowners, as well as ASLD; thus, it is not considered superior to the corresponding segments of the Proposed Action.	Segment p-01 or d-01 would be superior since they parallel existing utilities.

ALTERNATIVE/ SEGMENT (LENGTH IN MILES)	SEGMENT DESCRIPTION	ALTERNATIVES SCREENING CRITERIA				REASON ELIMINATED FROM DETAILED ANALYSIS
		CONSISTENT WITH PURPOSE AND NEED?	TECHNICALLY FEASIBLE?	ECONOMICALLY FEASIBLE?	ENVIRONMENTALLY SUPERIOR?	
BLM-4 (32.3)	Alternative to Segments p-02 through a portion of p-06; i-01 through i-03. Parallels I-10 on north side; within utility corridor on BLM-administered lands.	Yes	Yes	Yes	No, would avoid impacts to scenic views looking south from I-10 toward Courthouse Rock, the New Water Mountains Wilderness, and the Kofa NWR. Views along I-10 are more scenic to the south than the north and travelers on I-10 tend to look to the south; would parallel the CAP, which is prominent linear feature visible to the north. Would place the Alternative Series Compensation Station north of I-10, which could save a future I-10 crossing to connect to the Brenda SEZ. However, would cross both Category 2 and 3 Sonoran desert tortoise habitat, while Segment i-03 south of and parallel to I-10 would only cross Category 3 habitat. AGFD stated there is more sensitive habitat on the north side and prefers this segment not go forward.	Would impact higher quality tortoise habitat and impact other sensitive habitat more than other alternatives. La Paz County adamantly requires the line to be sited on the south side of I-10, due to their economic feasibility issues on record.
Quartzsite Zone						
XA (9.6)	Alternative to Segments i-05, qn-01 and a portion of qn-02; qs-01 and qs-02. Developed as conceptual route around north side of the Town of Quartzsite; replaced by qn-02.	Yes	Yes	Yes	No, qn-02 follows the existing WAPA 161kV transmission line and would reduce impacts by co-locating facilities and sharing access.	Replaced by Segment qn-02.
XB (2.0)	Alternative to Segment p-09, qn-02. Originally part of Segment qs-02, but qs-02 revised to dip south to avoid Quartzsite developed area.	Yes	Yes	Yes	No, the segment would have visual and land use impacts to densely developed areas on the southwest side of Quartzsite, including residential areas, as well as popular OHV routes and dispersed camping areas immediately south.	Replaced by eastern portion of Segment qs-02 on BLM lands.

ALTERNATIVE/ SEGMENT (LENGTH IN MILES)	SEGMENT DESCRIPTION	ALTERNATIVES SCREENING CRITERIA				REASON ELIMINATED FROM DETAILED ANALYSIS
		CONSISTENT WITH PURPOSE AND NEED?	TECHNICALLY FEASIBLE?	ECONOMICALLY FEASIBLE?	ENVIRONMENTALLY SUPERIOR?	
XC (5.5)	Alternative to Segments x-07, x-08 Within designated but as-yet undeveloped utility corridor; corridor is currently under review regarding whether it will continue as a corridor.	Yes	Yes	Yes	No, due to very steep and rugged topography, would result in impacts to vegetation and topography in this undisturbed area. Also, there are numerous mining claims in the area which may make route infeasible. Segments x-07 or x-08 would provide easier connection between the Proposed Action route and an I-10 route with less impacts and more certainty.	Segments x-07 or x-08 would be superior.
Copper Bottom Zone						
BLM-3 (1.6)	Alternative to Segment x-08 Connector between the I-10 and Proposed Action routes without right angle turns.	Yes	Yes	Yes	No, challenging terrain would incur more impacts to the natural topography, soils, etc. Segment x-08 offers a shorter route with less challenging terrain and portions of which are in previously disturbed areas, resulting in fewer impacts to vegetation and topography.	Segments x-08 would be superior.
cb-07 (2.8)	Alternative to Segments p-10/p-11/p-12; cb-01, cb-02	Yes	Yes	Yes	Avoids crossing Cunningham Peak, Johnson Canyon, and Copper Bottom Pass, but the terrain is challenging and would result in more impacts than Proposed Action. Also, this segment could negatively impact the YPG mission by placing road and structures near YPG boundary.	Segments dropped through coordination between BLM and YPG management due to potential national security impacts.
cb-08 (3.0)	Alternative to Segments p-10/p-11/p-12; cb-04	Yes	Yes	Yes	Avoids crossing Cunningham Peak, Johnson Canyon, and Copper Bottom Pass, but the terrain is challenging and would result in more impacts than Proposed Action. Also, this segment could negatively impact the YPG mission by placing road and structures near YPG boundary.	Segments dropped through coordination between BLM and YPG management due to potential national security impacts.
cb-09 (7.7)	Alternative to Segments p-13, cb-05	Yes	Yes	Yes	Avoids crossing Cunningham Peak, Johnson Canyon, and Copper Bottom Pass, but the terrain is challenging and would result in more impacts than Proposed Action or cb-05. Also, this segment could negatively impact the YPG mission by placing road and structures near YPG boundary.	Segments dropped through coordination between BLM and YPG management due to potential national security impacts.

ALTERNATIVE/ SEGMENT (LENGTH IN MILES)	SEGMENT DESCRIPTION	ALTERNATIVES SCREENING CRITERIA				REASON ELIMINATED FROM DETAILED ANALYSIS
		CONSISTENT WITH PURPOSE AND NEED?	TECHNICALLY FEASIBLE?	ECONOMICALLY FEASIBLE?	ENVIRONMENTALLY SUPERIOR?	
XD (4.0)	Attach transmission line to existing DPV1 structures through Copper Bottom Pass.	No, the segment would not meet the CAISO requirement of a 250-foot separation from DPV1.	Yes	Yes	Yes, would eliminate disturbance from new structures and eliminate or substantially reduce disturbance for new access routes.	Eliminated because it would not meet the CAISO requirements for the Project, to maintain separation between the Project and the existing DPV1 Transmission Line.
XF (1.6)	Alternative to Segment x-08	Yes	Yes	Yes	No, Segment x-08 would be shorter, with fewer impacts, and be easier to construct.	Segment x-08 would be superior.
Colorado River and California Zone						
ca-03 (3.5)	Alternative to Segments p-17, ca-07/ca-08/ca-09	Yes	Unknown at this time; would require negotiation with Desert Quartzite Solar Project, could adversely impact the solar project's planned operations. Desert Quartzite Solar Project is presently under environmental analysis by the BLM.	Yes	Yes, partially within a utility corridor and would cross lands already dedicated to industrial facility, reducing new disturbance/impacts. But would require Desert Quartzite Solar Facility to revise planned facility layout, negatively affecting operations.	Due to uncertainty with solar facility, would not be superior to Proposed Action or ca-07/ca-08/ca-09.
ca-08a (1.4)	Alternative to Segments p-17/p-18, ca-07	Yes	No, crosses through the existing NRG Blythe solar facility; there is not sufficient space for the ROW.	No, would require extensive redesign of the NRG Blythe solar facility to accommodate the power line.	Yes, partially within a utility corridor and crosses industrialized area.	Replaced by ca-07 once conflict with existing NRG Blythe solar facility was identified.
ca-08b (2.9)	Alternative to Segments p-17/p-18, ca-09	Yes	No, would conflict with gen-tie lines for proposed/approved solar facilities in the area; there is not sufficient space for the ROW.	Yes	Yes, partially within a utility corridor and crosses industrialized area.	Eliminated because of technical and safety conflicts with solar facility gen-tie lines. Replaced by ca-09.
i-08e (0.8)	Alternative to Segments p-15e, i-08s Adjacent to I-10, offset to south; east of Colorado River	Yes	No, there is not sufficient space for the ROW.	Yes	No, would require relocation of residences. Existing pipeline crossing and related appurtenances, RV park, and a residential community limits available area. There are three other river crossings that would have fewer impacts to existing development.	Eliminated due to insufficient space for the ROW.
i-08wa (0.3) **i-08wb** (0.9)	Alternative to Segments p-15e, i-08s, i-08sw, ca-04, x-09 Adjacent to I-10, offset to south; west of Colorado River	Yes	No, there is not sufficient space for the ROW.	Yes	Yes	Eliminated due to insufficient space for the ROW.
i-08sw (0.7)	Alternative to Segment i-08s	No, segment was stranded after elimination of segments i-08e and i-08wa.	Yes	Yes	Yes	Eliminated because it became stranded with the elimination of connecting segments.

ALTERNATIVE/ SEGMENT (LENGTH IN MILES)	SEGMENT DESCRIPTION	ALTERNATIVES SCREENING CRITERIA				REASON ELIMINATED FROM DETAILED ANALYSIS
		CONSISTENT WITH PURPOSE AND NEED?	TECHNICALLY FEASIBLE?	ECONOMICALLY FEASIBLE?	ENVIRONMENTALLY SUPERIOR?	
i-09a (1.2)	Alternative to Segments i-08s/ca-04/x-09	No, segment was stranded after elimination of Segments XGa and i-09b.	Yes	Yes	Yes	Eliminated because it became stranded with the elimination of connecting segments.
i-09b (1.6)	Alternative to Segments p-16, ca-02, and ca-06	Yes	No, is within the Blythe Airport Influence Area, where structure heights are limited.	Yes	Yes	Eliminated due to technical infeasibility.
i-09c (0.3)	Connector between i-09a and i-10 or x-14	Yes	No, is within the Blythe Airport Influence Area, where structure heights would be limited, rendering the route infeasible.	Yes	N/A	Eliminated due to technical infeasibility.
i-10 (3.6)	Alternative to Segments p-17/p-18, ca-07/ca-09	Yes	No, would require crossing existing transmission lines, going above some lines and under others, in a manner that would not be technically feasible, and given consideration for safety. Additionally, the route would be located within the Blythe Airport Influence Area, where some structure heights would be limited, rendering the route infeasible.	Yes	N/A	Eliminated due to technical infeasibility.
i-11 (3.7)	Alternative to Segments p-17/p-18, ca-09	Yes	No, would require crossing multiple existing transmission lines, going above some lines and under others, in a manner that would not be technically feasible.	Yes	N/A	Eliminated due to technical infeasibility.
i-12a (1.4)	Alternative to Segments p-17, ca-07	No, segments i-09b, i-09c, i-11, and x-18 were eliminated, leaving the segment stranded.	No, portions would be within the Blythe Airport Influence Area, where structure heights would be limited, rendering the route infeasible.	Yes	N/A	Eliminated due to technical infeasibility and because connecting segments were eliminated.
i-12b (1.1)	Alternative to Segment XGb	No, segments i-12a and i-12c were eliminated, leaving the segment stranded.	No, portions would be within the Blythe Airport Influence Area, where structure heights would be limited, rendering the route infeasible.	Yes	Yes	Eliminated due to technical infeasibility and because connecting segments were eliminated.
i-12c (1.8)	Alternative to Segments p-17, ca-07	No, because Segments i-09b, i-09c, i-11, i-12a, i-12b, and x-18 were eliminated, leaving the segment stranded.	Segment may also have failed due to structure height limitations within the Blythe Airport Influence Area.	Yes	Yes	Eliminated because connecting segments were eliminated.

ALTERNATIVE/ SEGMENT (LENGTH IN MILES)	SEGMENT DESCRIPTION	ALTERNATIVES SCREENING CRITERIA				REASON ELIMINATED FROM DETAILED ANALYSIS
		CONSISTENT WITH PURPOSE AND NEED?	TECHNICALLY FEASIBLE?	ECONOMICALLY FEASIBLE?	ENVIRONMENTALLY SUPERIOR?	
XGa (6.6)	Alternative to Segments p-15w, ca-01, ca-05	No, Segments i-08wb and x-21 were eliminated, leaving the segment stranded.	Yes	Yes	No, segment would cross through the congested Blythe business district along I-10. High density areas are more challenging: more infrastructure, safety clearance issues, and angle structures are required.	Eliminated because connecting segments were eliminated. Replaced by alternative segments further south of and following the I-10 corridor that would have fewer adverse impacts.
XGb (1.0)	Alternative to Segment i-12b	Yes	No, would be within the Blythe Airport Influence Area, where structure heights would be limited, rendering the route infeasible.	Yes	N/A	Eliminated due to technical infeasibility.
x-14 (1.4)	Alternative to Segments i-08s/ca-04/x-09	No, it became stranded with the elimination of Segments i-09b and i-09c, and i-10.	Yes	Yes	Yes	Eliminated because connecting segments were eliminated.
x-17a (0.4) **x-17b** (1.3) **x-17c** (0.4)	Alternative to Segments x-14 and x-18a & b	Yes	No, Segment x-17b conflicts with the existing NRG Blythe solar facility operations that wasn't identified until after the segment was sited.	Yes	Yes	Eliminated due to technical infeasibility.
x-18a (0.9) **x-18b** (0.2)	Together, alternative to Segments i-08s, x-14 and i-11	No, eliminated because it became stranded with the elimination of Segments i-10, i-11, and i-12a, b, and c.	Yes	Yes	Yes	Eliminated because connecting segments were eliminated.
x-20 (1.2)	Alternative to Segment x-19	No, eliminated because it became stranded with the elimination of Segment i-11	Yes	Yes	Yes	Eliminated because connecting segments were eliminated.
x-21 (1.5)	Alternative to i-08s/ca-04/x-09	No, eliminated because it became stranded with the elimination of Segments i-08wa & b	Yes	Yes	Yes	Eliminated because connecting segments were eliminated.

Table 2.2-33a East Plains and Kofa Zone Comparison of Impacts by Segment – p and d Segments

CHARACTERISTIC OR RESOURCE IMPACT		p-01	p-02	p-03	p-04	p-05	p-06	d-01
Segment length (miles)		26.7	1.0	2.1	5.5	2.0	35.7	25.2
Land ownership (miles)	BLM	12.6	-	1.0	5.0	2.0	10.8	7.3
	Reclamation	-	-	-	-	-	-	-
	USFS	-	-	-	-	-	24.9	-
	Arizona State Trust	4.7	0.5	1.1	0.5	-	-	3.1
	Private	9.2	0.7	-	-	-	-	14.8
Ground disturbance	Short-term Acres	149.7	4.4	11.7	28.0	15.5	183.5	129.4
	Long-term Acres	67.8	3.6	7.2	19.0	7.0	125.1	88.1
BLM Yuma RMP conformance	VRM	Compliant	Compliant	Compliant	Compliant	Compliant	Amendment included	Compliant
	Corridors	Conform	Conform	Conform	Conform	Conform	Conform	Conform
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	Yes	No - Not an appropriate use for Kofa NWR	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.							
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible.	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01
Paleontological Resources	Potential Fossil Yield Classification	Low to unknown	Low	Low to unknown	Low to unknown	Very low to unknown	Very low, unknown, and high	Low to unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Segment already impacted by I-10, agriculture, transmission lines, and canal, so negligible additional impact. Short-term impact to desert bighorn sheep via avoidance of Big Horn Mountains #5 wildlife water and disruption of dispersal corridor between Burnt Mountain and Big Horn Mountains.	Additional disturbance would be indistinguishable from current conditions.	Additional disturbance would be indistinguishable from current conditions.	Permanent potential habitat degradation for Sonoran desert tortoise and other wildlife.		Potential temporary habitat alteration for Gila monster, elf owl, gilded flicker, Le Conte's thrasher, and Lucy's warbler. Temporary disruption and desert bighorn sheep and Sonoran pronghorn. Permanent impact to desert bighorn sheep and Sonoran desert tortoise habitat. Golden eagle disturbance. Construction activities could have significant direct and indirect impacts on the management of Kofa NWR for wildlife. These impacts would be major,	Areas already impacted by agriculture and development. Permanent habitat loss possible for Sonoran desert tortoise, Gila monster, and Le Conte's thrasher could be lost. Permanent impact to 187 acres of desert vegetation and wildlife habitat.

CHARACTERISTIC OR RESOURCE IMPACT		p-01	p-02	p-03	p-04	p-05	p-06	d-01
							with both short- and long-term effects, and cannot be mitigated. The USFWS states the construction of a new transmission line across the Kofa NWR should not be considered as a viable alternative.	
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains	Known NRHP-eligible sites or sites requiring NRHP evaluation: 9 (cultural resources survey coverage: 46.7%). Known site density: 3.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 19. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 13.5%). Known site density: 85.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 14. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	No previous Class III cultural resources survey has been conducted in the 200-foot analysis corridor. No sites have been recorded in the corridor. As a result, no meaningful evaluation of potential site density or direct effect can be made. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 26.0%). Known site density: 23.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 12. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 17.9%). Known site density: 24.8 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 11. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 17 (cultural resources survey coverage: 23.8%). Known site density: 8.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 71. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 5.7%). Known site density: 5.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 35. One NRHP-listed site potentially sensitive to indirect visual impacts is within the indirect effects analysis area. Analysis of potential visual impacts to this historic property would be required as part of the indirect effects analysis.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	No known concerns to Indian tribes.	No known concerns to Indian tribes	No known concerns to Indian tribes	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance

CHARACTERISTIC OR RESOURCE IMPACT		p-01	p-02	p-03	p-04	p-05	p-06	d-01
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations.	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations.	See Proposed Action and Alternatives 3, 1A, 2A, and 4A	See Proposed Action and Alternatives 3, 4, and 2A	See Proposed Action and Alternatives 4 and 3C	Same as p-01	Crosses more farmland than other segments and all of the NRCS-designated farmland in the East Plains and Kofa Zone (minor, short- and long-term effects).
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	Two stock tanks to which access may be temporarily impeded during construction. Impact reduced to negligible with MM GR-1.	See Proposed Action and Alternatives 3, 1A, 1B, 2A, and 4A	See Proposed Action and Alternatives 3, 1A, 2A, and 4A	See Proposed Action and Alternatives 3, 4, and 2A	See Proposed Action and Alternatives 4 and 3C	Same as p-01	One stock tank to which access may be temporarily impeded during construction. Impact reduced to negligible with MM GR-1.
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Proposed Action and Alternatives 1, 2, 3, and 4A	See Proposed Action and Alternatives 3, 1A, 1B, 2A, and 4A	See Proposed Action and Alternatives 3, 1A, 2A, and 4A	See Proposed Action and Alternatives 3, 4, and 2A	See Proposed Action and Alternatives 4 and 3C	See Proposed Action	See Proposed Action and Alternatives 4, 2A, and 3A
Special Designations	Conflict with goals, objectives & resources an area is designated to protect.	See Proposed Action and Alternatives 1, 2, 3, and 4A	See Proposed Action and Alternatives 3, 1A, 1B, 2A, and 4A	See Proposed Action and Alternatives 3, 1A, 2A, and 4A	See Proposed Action and Alternatives 3, 4, and 2A	See Proposed Action and Alternatives 4 and 3C	See Proposed Action	See Proposed Action and Alternatives 4, 2A, and 3A
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No Noise Sensitive Receptors (NSR) present. See Proposed Action and Alternatives 1, 2, 3, and 4A.	No NSR present. See Proposed Action and Alternatives 3, 1A, 1B, 2A, and 4A	No NSR present. See Proposed Action and Alternatives 3, 1A, 2A, and 4A	No NSR present. See Proposed Action and Alternatives 3, 4, and 2A	No NSR present. See Proposed Action and Alternatives 4 and 3C.	No NSR present. See Proposed Action.	See Proposed Action and Alternatives 4, 2A, and 3A.

CHARACTERISTIC OR RESOURCE IMPACT		p-01	p-02	p-03	p-04	p-05	p-06	d-01
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01
Socioeconomics & Environmental Justice	Not available at this scale							
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation.	All risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01	Same as p-01
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Segment p-01 would conform to BLM VRM class objectives. The visual environment would benefit from changing the proposed guyed V structures to self-supporting lattice to match the existing DPV1 transmission infrastructure, which would reduce contrast and visual clutter. Minor addition to the view, marginally increasing the sense of development and visual clutter.	Same as p-01	Segment p-03 would conform to BLM VRM class objectives. Same as p-01.	Segment p-04 would conform to BLM VRM class objectives. Same as p-01.	Segment p-05 would conform to BLM VRM class objectives. Same as p-01.	Segment p-06 would conform to BLM VRM class objectives. Same as p-01.	Same as p-01

CHARACTERISTIC OR RESOURCE IMPACT		p-01	p-02	p-03	p-04	p-05	p-06	d-01
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts. Crossings of high-risk floodplains associated with Centennial Wash, likely greater than a single span (negligible long-term effect).	Except where floodplains are too extensive to be spanned between structures impacts should be negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as p-02	Same as p-02	Same as p-02	Crossings of high-risk floodplains associated with Bouse Wash, likely greater than a single span (negligible effect). Otherwise the same as p-02.	Crossings of high-risk floodplains associated with Centennial Wash, likely greater than a single span (negligible effect). Otherwise the same as p-02.

Table 2.2-33b East Plains and Kofa Zone Comparison of Impacts by Segment – i and x Segments

CHARACTERISTIC OR RESOURCE IMPACT		i-01	i-02	i-03	i-04	in-01	x-01	x-02a	x-02b	x-03	x-04
Segment length (miles)		8.3	3.3	19.9	10.5	13.9	4.7	3.3	3.4	5.6	22.7
Land ownership (miles)	BLM	0.1	3.3	12.2	10.5	13.9	1.0	0.1	0.8	5.6	21.6
	Reclamation	0.1	-	-	-	-	-	-	-	-	-
	Arizona State Trust	5.3	-	6.2	-	-	3.7	3.2	2.6	-	1.1
	Private	2.8	-	1.5							
Ground disturbance	Short-term Acres	44.6	18.1	94.8	52.3	75.8	23.6	18.8	17.0	31.3	112.0
	Long-term Acres	25.7	12.2	65.8	49.7	50.5	16.6	11.3	11.8	19.6	78.5
BLM YFO or Lake Havasu (in-01 only) RMP conformance	VRM	Compliant	Compliant	Optional for ROW	Amendment included	Amendment included	Compliant	Compliant	Compliant	Compliant	Compliant
	Corridors	Conform	Conform	Amendment included	Conform	Conform	Conform	Conform	Amendment included	Amendment included	Amendment included
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.										

CHARACTERISTIC OR RESOURCE IMPACT		i-01	i-02	i-03	i-04	in-01	x-01	x-02a	x-02b	x-03	x-04
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible.	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01
Paleontological Resources	Potential Fossil Yield Classification	Low	Low to unknown	Low to unknown	Very low to unknown	Very low to unknown	Low	Low	Low	Low	Low to unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Little additional effect from development of Project segment.	Little additional effect from development of Project segment.	Little additional effect from development of Project segment.	Minimal Project impacts due to ongoing influence of I-10 on wildlife in the area.	Minimal Project impacts due to ongoing influence of I-10 on wildlife in the area.	Additional disturbance would be indistinguishable from current conditions.	Additional disturbance would be indistinguishable from current conditions.	Additional disturbance would be indistinguishable from current conditions.	Minor disturbance and impacts to common wildlife species using Sonoran desert scrub habitat.	Temporary relocation of Gila monster, Le Conte's thrasher, and kit fox using Sonoran desert scrub. Long-term impacts to biological resources associated with the Sonoran desert scrub.

CHARACTERISTIC OR RESOURCE IMPACT		i-01	i-02	i-03	i-04	in-01	x-01	x-02a	x-02b	x-03	x-04
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 21.2%). Known site density: 9.4 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 19. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	No previous Class III cultural resources survey has been conducted in the 200-foot analysis corridor. No sites have been recorded in the corridor. As a result, no meaningful evaluation of potential site density or direct effect can be made. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 4 (cultural resources survey coverage: 4.2%). Known site density: 19.4 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 95. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Only 2.0 percent of the 200-foot analysis corridor has been subjected to Class III survey. No sites have been recorded in the corridor. As a result, no meaningful evaluation of potential site density or direct effect can be made. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 2.0%). Known site density: 30.3 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 102. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 2.0%). Known site density: 100.0 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	No previous Class III cultural resources survey has been conducted in the 200-foot analysis corridor. No sites have been recorded in the corridor. As a result, no meaningful evaluation of potential site density or direct effect can be made. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Only 4.4 percent of the 200-foot analysis corridor has been subjected to Class III survey. No sites have been recorded in the corridor. As a result, no meaningful evaluation of potential site density or direct effect can be made. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Only 1.7 percent of the 200-foot analysis corridor has been subjected to Class III survey. No sites have been recorded in the corridor. As a result, no meaningful evaluation of potential site density or direct effect can be made. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 4.4%). Known site density: 14.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 23. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment regarding new access and intrusion on pristine landscapes; Intrusion on pristine landscape.

CHARACTERISTIC OR RESOURCE IMPACT		i-01	i-02	i-03	i-04	in-01	x-01	x-02a	x-02b	x-03	x-04
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Crosses state trust land (minor to moderate, long-term effect). Crosses the CAP but would not infringe on the utility.	Does not cross residential land; crosses state trust land (minor to moderate, long-term effect).	Crosses state trust land (minor to moderate, long-term effect). Crosses the CAP but would not infringe on the utility.	Does not cross residential land.	Does not cross residential land.	Crosses state trust land (minor to moderate, long-term effect).	Crosses state trust land (minor to moderate, long-term effect).	Crosses state trust land (minor to moderate, long-term effect).	Does not cross residential land.	Crosses state trust land (minor to moderate, long-term effect).
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	One stock tank to which access may be temporarily impeded during construction. Impact reduced to negligible with MM GR-1.	None	None	None	None	One stock tank to which access may be temporarily impeded during construction. Impact reduced to negligible with MM GR-1.	None	None	None	None
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Alternatives 1, 2, and 3B	See Alternatives 1, 2, 3A, and 3B	See Alternatives 1, 2, 3, and 4B	See Alternatives 1, 2, 3, and 4C	See Alternatives 4, 1C and 3D	See Alternative 1B	See Alternatives 1A, 1B, 2A, and 3A	See Alternatives 1A, 2A, and 3A	See Alternatives 3, 2A, 4B	See Alternatives 4 and 3C
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Alternatives 1, 2, and 3B	See Alternatives 1, 2, 3A, and 3B	See Alternatives 1, 2, 3, and 4B	See Alternatives 1, 2, 3, and 4C	Negligible loss of acreage to lands with wilderness characteristics Polygon 34.	See Alternative 1B	See Alternatives 1A, 1B, 2A, and 3A	See Alternatives 1A, 2A, and 3A	See Alternatives 3, 2A, 4B	See Alternatives 4 and 3C
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Alternatives 1, 2, and 3B	No NSR present. See Alternatives 1, 2, 3A, and 3B	No NSR present. See Alternatives 1, 2, 3, and 4B	No NSR present. See Alternatives 1, 2, 3, and 4C	No NSR present. See Alternatives 4, 1C, and 3D	No NSR present. See Alternative 1B	No NSR present. See Alternatives 1A, 1B, 2A, and 3A	No NSR present. See Alternatives 1A, 2A, and 3A	No NSR present. See Alternatives 3, 2A, 4B	No NSR present. See Alternatives 4 and 3C

CHARACTERISTIC OR RESOURCE IMPACT		i-01	i-02	i-03	i-04	in-01	x-01	x-02a	x-02b	x-03	x-04
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01
Socioeconomics & Environmental Justice	Not available at this scale										
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as i-01	Same as i-01	Same as i-01. Safety risk to AGFD aerial surveys reduced to minor by MM-TT-02.	Same as i-01. Safety risk to AGFD aerial surveys reduced to minor by MM-TT-02.	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01

CHARACTERISTIC OR RESOURCE IMPACT		i-01	i-02	i-03	i-04	in-01	x-01	x-02a	x-02b	x-03	x-04
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Same as p-01	Segment i-02 would conform to BLM VRM class objectives. Same as p-01.	Segment i-03 would conform to BLM VRM class objectives. Same as p-01. Should some combination of Segments i-03, i-04, and/or x-04 be part of the selected alternative, the Alt. SCS location would be used. The segments and Alt. SCS site would moderately contrast with the existing setting but would not be dominant in views. The Alt. SCS would conform with VRM class objectives.	OHV users would be in close proximity to the Project. Guyed V structures would pose an unacceptable human health and safety risk to OHV users; self-supporting lattice structures or monopoles would replace the guyed V structures as mitigation to eliminate the hazards. Level of development would be a major modification to the visual environment and dominate the view. VRM Class III objectives would not be met. See i-03 for Alt. SCS.	The Project along the portion of in-01 within the YFO would outsize surrounding landforms and be a major modification that dominates the view; an amendment of the Yuma RMP included to change the VRM Class from III to IV. The portion within the Lake Havasu FO would cross lands designated VRM Class II and VRM Class IV. It would not meet VRM Class II objectives. An amendment of the Lake Havasu RMP would be included.	Segment x-01 would conform to BLM VRM class objectives. Same as p-01.	Segment x-02a would conform to BLM VRM class objectives. Same as p-01.	Segment x-02b would conform to BLM VRM class objectives. Same as p-01.	Segment x-03 would conform to BLM VRM class objectives. Same as p-01.	Segment x-04 would conform to BLM VRM class objectives. Same as p-01. See i-03 for Alt. SCS.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as i-01	Crossings of high-risk floodplains associated with Bouse Wash, likely greater than a single span (negligible effect). Otherwise the same as i-01.	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Same as i-01	Crossings of high-risk floodplains associated with Bouse Wash, likely greater than a single span (negligible effect). Otherwise the same as i-01.

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible sites or sites of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP-ineligible sites.

Table 2.2-34a Quartzsite Zone Comparison of Impacts by Segment – p and i Segments, and qn-01 and 02

CHARACTERISTIC OR RESOURCE IMPACT		p-07	p-08	i-05	qn-01	qn-02
Segment length (miles)		2.2	0.6	2.8	0.6	10.8
Land ownership (miles)	BLM	2.2	0.6	2.8	0.6	9.8
	Reclamation	-	-	-	-	
	Arizona State Trust	-	-	-	-	1.0
	Private	-	-	-	-	
Ground disturbance	Short-term Acres	12.8	2.7	10.4	4.2	58.2
	Long-term Acres	10.6	4.0	17.4	2.2	438.3
BLM Yuma RMP conformance	VRM	Amendment included	Amendment included	Compliant	Compliant	Compliant
	Corridors	Conform	Conform	Conform	Conform	Amendment included
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	No – crosses a Tier III growth area, LTVA, and designated 14-day camping area (Town of Quartzsite General Plan)
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.					
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible.	Same as p-07	Same as p-07	Same as p-07	Same as p-07
Paleontological Resources	Potential Fossil Yield Classification	Unknown	Unknown	Unknown	Unknown	Very low to unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	No new impacts to biological resources.		Additional disturbance associated with the Project would be indistinguishable from current conditions.		Localized site-specific impacts where farthest from human activities to common wildlife species, Gila monster, Le Contes' thrasher, kit fox, various desert amphibians, and Lucy's warbler.

CHARACTERISTIC OR RESOURCE IMPACT		p-07	p-08	i-05	qn-01	qn-02
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains	Known NRHP-eligible sites or sites requiring NRHP evaluation: 5 (cultural resources survey coverage: 14.6%). Known site density: 34.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 18. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 5.6%). Known site density: 17.9 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 36.3%). Known site density: 4.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 89.6%). Known site density: 22.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 4 (f cultural resources survey coverage: 56.6%). Known site density: 4.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 7. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	Places of elevated spiritual importance.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	See Proposed Action and Alternatives 3 and 4D	See Proposed Action and Alternatives 3 and 4	See Alternatives 1, 2, 3J, and 4J	See Alternatives 4, 1D, 3G	Contains residential land; crosses Tier III growth area (minor. long-term impact). Crosses state trust land (negligible to minor, long-term impact).
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Proposed Action and Alternatives 3 and 4D	See Proposed Action and Alternatives 3 and 4	See Alternatives 1, 2, 3J, and 4J	See Alternatives 4, 1D, 3G	See Alternative 3H

CHARACTERISTIC OR RESOURCE IMPACT		p-07	p-08	i-05	qn-01	qn-02
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Proposed Action and Alternatives 3 and 4D	See Proposed Action and Alternatives 3 and 4	See Alternatives 1, 2, 3J, and 4J	See Alternatives 4, 1D, 3G	Crosses La Posa LTVA and Dome Rock Camping Area (moderate to major, long-term effect).
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Proposed Action and Alternatives 3 and 4D	See Proposed Action and Alternatives 3 and 4	See Alternatives 1, 2, 3J, and 4J	See Alternatives 4, 1D, 3G	Negligible loss of acreage to lands with wilderness characteristics Polygon 35_SW.
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Proposed Action and Alternatives 3 and 4D	No NSR present. See Proposed Action and Alternatives 3 and 4	No NSR present. See Alternatives 1, 2, 3J, and 4J	No NSR present. See Alternatives 4, 1D, 3G	80 NSR are present, including residences and Quartzsite Alliance Church in Quartzsite. See Alternative 3H.
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as p-07	Same as p-07	Same as p-07	Same as p-07
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as p-07	Same as p-07	Same as p-07	Same as p-07
Socioeconomics & Environmental Justice	Not available at this scale					

CHARACTERISTIC OR RESOURCE IMPACT		p-07	p-08	i-05	qn-01	qn-02
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as p-07	Same as p-07	Same as p-07	Same as p-07
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Because guyed V structures would pose an unacceptable human health and safety risk to OHV users, self-supporting lattice structures or monopoles would replace the guyed V structures as mitigation to eliminate the hazards associated with guy wires. Level of development would be a major modification to the visual environment and dominate the view. Thus, VRM Class III objectives would not be met. Because of the presence of the large self-supporting lattice structures of the DPV1 transmission line, the addition of the Project structures would be a relatively minor addition.	Same as p-07	Same as p-07	VRM Class III objectives would not be met	Segment qn-02 would conform to BLM VRM class objectives. Moderate to major impact on views of private landowners in this area.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as p-07	Same as p-07	Same as p-07	Same as p-07

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible or site of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP ineligible sites.

Table 2.2-34b Quartzsite Zone Comparison of Impacts by Segment – qs and x Segments

CHARACTERISTIC OR RESOURCE IMPACT		qs-01	qs-02	x-05	x-06	x-07
Segment length (miles)		3.1	4.8	10.2	9.2	7.7
Land ownership (miles)	BLM	3.1	4.8	10.2	9.2	7.7
	Reclamation	-	-	-	-	-
	Arizona State Trust	-	-	-	-	-
	Private	-	-	-	-	-
Ground disturbance	Short-term Acres	16.6	28.6	55.5	51.4	40.8
	Long-term Acres	10.7	38.3	46.2	50.8	27.0
BLM Yuma RMP conformance	VRM	Amendment included	Amendment included	Compliant	Amendment included	Amendment included
	Corridors	Partially conforms - Amendment included	Partially conforms - Amendment included	Amendment included	Amendment included	Conform
Other Plan conformance (Federal, county, municipal)	Plan Conformance	No – crosses an LTVA and designated 14-day camping area (Town of Quartzsite General Plan)	No – crosses an LTVA and designated 14-day camping area (Town of Quartzsite General Plan)	Yes	Yes	No – crosses an LTVA and designated 14-day camping area (Town of Quartzsite General Plan)
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.					
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as qs-01	Same as qs-01	Same as qs-01	Same as qs-01
Paleontological Resources	Potential Fossil Yield Classification	Unknown	Very low to unknown	Very low to unknown	Unknown	Unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Additional disturbance associated with the Project would be indistinguishable from current conditions.		Golden eagle, Gila monster, elf owl, gilded flicker, and Lucy's warbler maybe impacted by segment development.	Due to existing development the Project would have minimal impact on wildlife species in these segments.	

CHARACTERISTIC OR RESOURCE IMPACT		qs-01	qs-02	x-05	x-06	x-07
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 94. %1). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 38.4%). Known site density: 11.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 1.0%). Known site density: 41.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 104. Due to the low percentage sample of existing survey coverage, the projected number of sites may be misrepresented. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 5 (cultural resources survey coverage: 23.7%). Known site density: 11.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 21. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 15.4%). Known site density: 32.5 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 6. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Places of elevated spiritual importance.	Native infrastructure and the interconnectedness of the cultural and natural environment; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Trails have been recorded on or within 0.5- mile of Segment x-07. Trails are of significance to Indian tribes as part of traditional native infrastructure associated with the interconnectedness of the cultural and natural environment.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations.	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations.	See Alternatives 3 and 4D	See Alternatives 4 and 3F	See Alternatives 2 and 3E
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Alternatives 1, 2, and 3E	See Alternative 1	See Alternatives 3 and 4D	See Alternatives 4 and 3F	See Alternatives 2 and 3E
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Crosses La Posa LTVA and Dome Rock Camping Area (moderate to major, long-term effect).	Crosses La Posa LTVA and Dome Rock Camping Area (moderate to major, long-term effect).	See Alternatives 3 and 4D	See Alternatives 4 and 3F	Crosses La Posa LTVA and Dome Rock Camping Area (moderate to major, long-term effect).

CHARACTERISTIC OR RESOURCE IMPACT		qs-01	qs-02	x-05	x-06	x-07
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Alternatives 1, 2, and 3E	See Alternative 1	See Alternatives 3 and 4D	See Alternatives 4 and 3F	See Alternatives 2 and 3E
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	251 NSR are present, including residences including La-Z Daze Trailer Park, Rice Ranch RV Park, Church of Jesus Christ of Latter-Day Saints, and LTVAs in Quartzsite.	54 NSR present, including residences associated with the Desert Gardens RV Park and Super 8 Hotel.	No NSR present. See Alternatives 3 and 4D	Variable NSR; thousands per year as it is adjacent to La Posa LTVA. See Alternatives 4 and 3F	Variable NSR; thousands per year as it is through La Posa LTVA. See Alternatives 2 and 3E
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as qs-01	Same as qs-01	Same as qs-01	Same as qs-01
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as qs-01	Same as qs-01	Same as qs-01	Same as qs-01
Socioeconomics & Environmental Justice	Not available at this scale					
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as qs-01	Same as qs-01	Same as qs-01	Same as qs-01
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Existing infrastructure begins to outsize the surrounding landscape features and dominate the view, and the Project would add to visual clutter. Guyed V structures would be replaced with monopoles to eliminate potential hazards to OHV recreation and reduce the contrast between the Project and the existing WAPA 161kV monopole structures. With monopole structures, it would have a moderate to major impact to the views of RV park residents by increasing the sense of development and visual clutter.	Guyed V structures would be replaced with monopoles to eliminate potential hazards to OHV recreation and reduce the visual clutter of the guy wires in the view. With monopole structures, it would have a negligible to minor impact to the views of RV park residents as the vertical structures would blend well with the other single pole vertical elements in the view.	Segment x-05 would conform to BLM VRM class objectives.	VRM Class III objectives would not be met. Segment x-06 would be primarily viewed from within the LTVA; as well as the access road paralleling the DPV1 or other OHV routes east of SR 95 and the LTVA. Views would be most impacted from the outer eastern edge of the LTVA. The Project would be a major modification to the visual environment.	VRM Class III objectives would not be met. Same as Segment x-06.

CHARACTERISTIC OR RESOURCE IMPACT		qs-01	qs-02	x-05	x-06	x-07
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Crossings of high-risk floodplains associated with La Cholla Wash, likely greater than a single span (negligible effect). Otherwise the same as qs-01.	Same as qs-01	Same as qs-01	Same as qs-01

Table 2.2-35a Copper Bottom Zone Comparison of Impacts by Segment – p Segments

CHARACTERISTIC OR RESOURCE IMPACT		p-09	p-10	p-11	p-12	p-13	p-14
Segment length (miles)		6.9	1.1	4.1	2.5	3.5	0.9
Land ownership (miles)	BLM	6.7	1.1	4.1	1.1	3.5	0.9
	Reclamation	-	-	<0.1	1.4	-	-
	Arizona State Trust	-	-	-	-	-	-
	DOD	0.2	-	-	-	-	-
	Private	-	-	-	-	-	-
Ground disturbance	Short-term Acres	37.1	14.0	40.5	11.1	16.1	6.1
	Long-term Acres	23.1	13.7	34.0	18.2	19.2	4.5
BLM Yuma RMP conformance	VRM	Amendment included	Amendment included	Amendment included	Amendment included	Amendment included	Compliant
	Corridors	Conform	Conform	Conform	Conform	Conform	Conform
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.						
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as p-09	Same as p-09	Same as p-09	Same as p-09	Same as p-09

CHARACTERISTIC OR RESOURCE IMPACT		p-09	p-10	p-11	p-12	p-13	p-14
Paleontological Resources	Potential Fossil Yield Classification	High to unknown	Very low to high	Very low	Very low to unknown	Unknown	Unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	The impacts of Project development would be additive to the existing habitat fragmentation for Lucy's warblers and desert toads through the narrow Copper Bottom Pass.		The impacts of Project development would be additive to the existing habitat fragmentation for desert bighorn sheep through the narrow Copper Bottom Pass.	Project development would add disturbance to a remote area in very harsh desert conditions with large areas of desert pavement.		
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 77.4%). Known site density: 1.5 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 62.9%). Known site density: 5.6 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 61.4%). Known site density: 3.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 9.8%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 97.5%). Known site density: 7.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2. An NRHP-eligible intaglio site has been recorded within the 200-foot analysis corridor. Analysis of potential visual impacts to this historic property would be required as part of the indirect effects analysis.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 75.2%). Known site density: 23.1 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance.	Native infrastructure and the interconnectedness of the cultural and natural environment.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	See Proposed Action and Alternatives 2, 3, and 4	See Proposed Action and Alternatives 2, 4, and 3K	Crosses CRIT land (would require an easement)	See Proposed Action and Alternatives 2, 3L, and 4G	See Proposed Action and Alternatives 2, 4, and 3L	See Proposed Action and Alternatives 2, 3, and 4

CHARACTERISTIC OR RESOURCE IMPACT		p-09	p-10	p-11	p-12	p-13	p-14
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; fragmentation of allotments Degradation of range quality	Negligible to minor short-term disturbance to wild horses, burros, and livestock from helicopters; potential fugitive dust affects to grazing forage in the vicinity of the fly yard. See Proposed Action and Alternatives 2, 3, and 4.	Negligible to minor short-term disturbance to wild horses, burros, and livestock from helicopters; potential fugitive dust affects to grazing forage in the vicinity of the fly yard. See Proposed Action and Alternatives 2, 4, and 3K.	Negligible to minor short-term disturbance to wild horses, burros, and livestock from helicopters; potential fugitive dust affects to grazing forage in the vicinity of the fly yard. See Proposed Action and Alternatives 2 and 4G.	See Proposed Action and Alternatives 2, 3L, and 4G	See Proposed Action and Alternatives 2, 4, and 3L	See Proposed Action and Alternatives 2, 3, and 4
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Proposed Action and Alternatives 2, 3, and 4	See Proposed Action and Alternatives 2, 4, and 3K	See Proposed Action and Alternatives 2 and 4G	See Proposed Action and Alternatives 2, 3L, and 4G	See Proposed Action and Alternatives 2, 4, and 3L	See Proposed Action and Alternatives 2, 3, and 4
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Negligible loss of acreage to lands with wilderness characteristics Polygon 23.	See Proposed Action and Alternatives 2, 4, and 3K	See Proposed Action and Alternatives 2 and 4G	See Proposed Action and Alternatives 2, 3L, and 4G	See Proposed Action and Alternatives 2, 4, and 3L	See Proposed Action and Alternatives 2, 3, and 4
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present.	No NSR present.	No NSR present.	No NSR present.	No NSR present.	No NSR present.
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as p-09	Same as p-09	Same as p-09	Same as p-09	Same as p-09

CHARACTERISTIC OR RESOURCE IMPACT		p-09	p-10	p-11	p-12	p-13	p-14
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as p-09	Same as p-09	Same as p-09	Same as p-09	Same as p-09
Socioeconomics & Environmental Justice	Not available at this scale						
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as p-09	Same as p-09	Same as p-09	Same as p-09	Same as p-09
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Structures would outsize the landscape features and portions would be skylined. The Project, in conjunction with the DPV1 infrastructure, would be a major modification to the landscape and would dominate the view, thus not conforming to VRM Class III objectives. Would require change from VRM Class III to VRM Class IV.	Same as p-09. Change to VRM Class IV limited to the viewshed where both the Project and DPV1 would be visible, while the rest of the BLM utility corridor would remain VRM Class III.	Same as p-09. Change to VRM Class IV limited to the viewshed where both the Project and DPV1 would be visible, while the rest of the BLM utility corridor would remain VRM Class III.	Same as p-09	Same as p-09	Conforms to VRM Class III standards and no RMP amendment or additional mitigation would be required.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as p-09	Same as p-09	Same as p-09	Same as p-09	Same as p-09

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible or site of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP ineligible sites.

Table 2.2-35b Copper Bottom Zone Comparison of Impacts by Segment – cb-1 through 6

CHARACTERISTIC OR RESOURCE IMPACT		cb-01	cb-02	cb-03	cb-04	cb-05	cb-06
Segment length (miles)		3.2	2.1	4.3	1.9	4.4	1.9
Land ownership (miles)	BLM	3.2	2.1	2.2	1.7	3.9	1.3
	Reclamation	-	-	0.1	0.2	0.5	0.6
	Arizona State Trust	-	-	-	-	-	-
	CRIT	-	-	2.0	-		-
Ground disturbance	Short-term Acres	69.0	63.0	24.7	7.8	25.6	16.2
	Long-term Acres	17.2	1.3	16.2	12.8	25.1	14.0
BLM Yuma RMP	VRM	Amendment included	Amendment included	Amendment included	Amendment included	Amendment included	Amendment included
Conformance	Corridors	Amendment included	Amendment included	Conform	Amendment included	Amendment included	Amendment included
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.						
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01
Paleontological Resources	Potential Fossil Yield Classification	Very low	Very low	Very low	Very low to unknown	Unknown	Unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Project development may impact important bighorn sheep use area.	Temporary impact from reduced access by desert bighorn sheep and mule deer to reliable water sources and limit use of favored habitat areas during critical time period, including bighorn sheep lambing. Permanent disruption of near-pristine desert, mountain, and desert wash habitats for Gila monster, Sonoran desert tortoise, and Lucy's warbler.	The impacts of Project development would be additive to the existing habitat fragmentation for desert bighorn sheep through the narrow Copper Bottom Pass.	Temporary impact from reduced access by desert bighorn sheep and mule deer to reliable water sources and limit use of favored habitat areas during critical time period, including bighorn sheep lambing area. Permanent disruption of near-pristine desert, mountain, and desert wash habitats for Gila monster, Sonoran desert tortoise, and Lucy's warbler.	Project development would add disturbance to a remote area in very harsh desert conditions with large areas of desert pavement. Project development would add disturbance to a remote area.	

CHARACTERISTIC OR RESOURCE IMPACT		cb-01	cb-02	cb-03	cb-04	cb-05	cb-06
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 4.8%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 38.5%). Known site density: 3.2 sites per 100 acres.[1] Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 15.6%). Known site density: 12.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 6. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 45.2%). Known site density: 14.6 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 7. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 8.7%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 0.3%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment; intrusion on pristine landscapes; places of elevated spiritual importance; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	See Alternatives 3 and 4E	See Alternatives 4, 2C, and 3K	Crosses CRIT land (would require an easement)	See Alternatives 3, 4, and 2C	See Alternatives 3 and 4F	See Alternatives 4 and 2C
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	Negligible to minor short-term disturbance to wild horses, burros, and livestock from helicopters; potential fugitive dust affects to grazing forage in the vicinity of the fly yard. See Alternatives 3 and 4E.	Negligible to minor short-term disturbance to wild horses, burros, and livestock from helicopters; potential fugitive dust affects to grazing forage in the vicinity of the fly yard. See Alternatives 4, 2C, and 3K.	See Alternative 2D	See Alternatives 3, 4, and 2C	See Alternatives 3 and 4F	See Alternatives 4 and 2C

CHARACTERISTIC OR RESOURCE IMPACT		cb-01	cb-02	cb-03	cb-04	cb-05	cb-06
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Alternatives 3 and 4E	See Alternatives 4, 2C, and 3K	See Alternative 2D	See Alternatives 3, 4, and 2C	See Alternatives 3 and 4F	See Alternatives 4 and 2C
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Major long-term impacts to lands with wilderness characteristics Polygon 23, reducing it to less than 5,000 acres, which does not meet the criteria for WAs.	Major long-term impacts to lands with wilderness characteristics Polygon 23, reducing it to less than 5,000 acres, which does not meet the criteria for WAs.	See Alternative 2D	Major long-term impacts to lands with wilderness characteristics Polygon 23, reducing it to less than 5,000 acres, which does not meet the criteria for WAs.	See Alternatives 3 and 4F	See Alternatives 4 and 2C
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Alternatives 3 and 4E	No NSR present. See Alternatives 4, 2C, and 3K	No NSR present. See Alternative 2D	No NSR present. See Alternatives 3, 4, and 2C	No NSR present. See Alternatives 3 and 4F	No NSR present. See Alternatives 4 and 2C
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01
Socioeconomics & Environmental Justice	Not available at this scale						

CHARACTERISTIC OR RESOURCE IMPACT		cb-01	cb-02	cb-03	cb-04	cb-05	cb-06
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Structures outsize landscape features and portions would be skylined. It would be a new visual addition in a heavily used, relatively scenic, and visually sensitive area. The Project would be a major modification to the landscape and would dominate the view, thus not conforming to VRM Class II objectives. RMP amendment to VRM Class IV limited to the viewshed where segment would be visible, while the rest of the BLM utility corridor unaffected by the Project would remain VRM Class III.	Same as cb-01	Structures would outsize the surrounding landscape features and portions may be skylined. Viewed in the context of DPV1, and taken together, it would be a major modification to the landscape and would dominate the view, thus not conforming to VRM Class III objectives. RMP amendment to VRM Class IV limited to the viewshed where segment would be visible, while the rest of the BLM utility corridor unaffected by the Project would remain VRM Class III.	Same as cb-01	Predominantly open panoramic views heavily used for OHV recreation. Proposed guyed V structures would be replaced with self-supporting lattice structures to eliminate potentially hazardous guy wires and reduce contrast with the existing DPV1 infrastructure, where viewed in conjunction with the Project. VRM Class III objectives would not be met.	Same as cb-05. VRM Class II objectives would not be met.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01	Same as cb-01

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible or site of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP ineligible sites.

Table 2.2-35c Copper Bottom Zone Comparison of Impacts by Segment – i segments

CHARACTERISTIC OR RESOURCE IMPACT		i-06	i-07	x-08
Segment length (miles)		7.2	6.3	1.3
Land ownership (miles)	BLM	3.9	-	-
	Reclamation	0.2	5.1	1.3
	Arizona State Trust	1.7	1.2	-
	CRIT	1.4	-	-
Ground disturbance	Short-term Acres	39.2	35.2	6.0
	Long-term Acres	26.1	22.2	4.8
BLM Yuma RMP conformance	VRM	Amendment included	Compliant	Compliant
	Corridors	Conform	Conform	Conform
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.			
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as i-06	Same as i-06
Paleontological Resources	Potential Fossil Yield Classification	Very low to unknown	Unknown	Very low to unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Project development of segments adjacent to I-10 would have minimal impact due to the on-going influence I-10 has on wildlife in the area.		Project development would add disturbance to a remote area in very harsh desert conditions with large areas of desert pavement. Project development would add disturbance to a remote area.
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 37.7%). Known site density: 1.5 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 33.3%). Known site density: 7.8 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 9. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 23.5%). Known site density: 13.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 4. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.

CHARACTERISTIC OR RESOURCE IMPACT		i-06	i-07	x-08
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Crosses CRIT land (would require an easement); crosses state trust land	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations. Crosses state trust land (moderate long-term impact).	See Alternatives 3L and 4H
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Alternatives 1 and 3L	See Alternatives 1 and 4H	See Alternatives 3L and 4H
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Bisects Dome Rock Camping Area (major long-term effect).	See Alternatives 1 and 4H	See Alternatives 3L and 4H
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Alternatives 1 and 3L	See Alternatives 1 and 4H	See Alternatives 3L and 4H
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Alternatives 1 and 3L	No NSR present. See Alternatives 1 and 4H	No NSR present. See Alternatives 3L and 4H
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as i-06	Same as i-06
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as i-06	Same as i-06
Socioeconomics & Environmental Justice	Not available at this scale			
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	See i-06, except MM-TT-02 not necessary.	See i-06, except MM-TT-02 not necessary.

CHARACTERISTIC OR RESOURCE IMPACT		i-06	i-07	x-08
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	I-10 viewers would be in close proximity. Change the VRM Class III to Class IV within the BLM utility corridor.	I-10 viewers would be in close proximity.	I-10 viewers would be in close proximity.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Crossings of high-risk floodplains associated with Ehrenberg and Cinnabar Washes, likely greater than a single span (negligible effect). Otherwise the same as i-06.	Same as i-06

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible or site of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP ineligible sites.

Table 2.2-36a Colorado River and California Zone Comparison of Impacts by Segment – p segments and cb-10

CHARACTERISTIC OR RESOURCE IMPACT		p-15e (Arizona)	p-15w (California)	p-16 (California)	p-17 (California)	p-18 (California)	cb-10 (Arizona)
Segment length (miles)		2.8	6.6	4.6	3.1	2.4	1.9
Land ownership (miles)	BLM	1.5	-	0.4	2.3	0.8	1.0
	Reclamation	-	-	-	-	-	-
	Arizona State Trust	1.3	-	-	-	-	0.9
	Private	-	6.6	4.2	0.8	1.6	-
Ground disturbance	Short-term Acres	20.3	41.5	35.9	18.7	25.8	12.2
	Long-term Acres	16.8	6.0	7.6	11.0	9.8	7.0
BLM RMP conformance	VRM	Compliant	Not applicable	Not applicable	Not applicable	Not applicable	Compliant
	Corridors	Conform	Not applicable	Not applicable	Not applicable	Not applicable	Conform
	RMP Amendments & Conformance	Not applicable	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.						

CHARACTERISTIC OR RESOURCE IMPACT		p-15e (Arizona)	p-15w (California)	p-16 (California)	p-17 (California)	p-18 (California)	cb-10 (Arizona)
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as p-15e	Same as p-15e	Negligible impact to sand dunes and sand transport corridor during construction and operation.	Negligible impact to sand dunes and sand transport corridor during construction and operation.	Same as p-15e
Paleontological Resources	Potential Fossil Yield Classification	Unknown	Unknown	High to unknown	Unknown	High to unknown	Unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Colorado River crossing open water spanned to avoid direct impacts to aquatic habitat, but 3-4 structures in river corridor would affect riparian vegetation. Reduced collision hazard to migratory birds along river corridor due to matching structure spacing and heights.	Spanned floodplain and canals west of the Colorado River but could be risk of avian mortality due to collision with towers and lines.	Spanned floodplain and canals west of the Colorado River but could be risk of avian mortality due to collision with towers and lines. Long-term impact to less than 0.1 acre of honey mesquite Alliance on non-BLM lands.	Permanent impacts to 2-3 acres of wash habitat for blue paloverde-ironwood. Potential impact to suitable habitat for Mojave desert tortoise near Mule Mountains.		Colorado River crossing, open water spanned to avoid direct impacts to aquatic habitat, but 3-4 structures in river corridor would affect riparian vegetation. Greater collision hazard to migratory birds along river corridor due to not adjacent to existing line.
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 68.5%). Known site density: 14.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 10. One NRHP-listed intaglio site is within the indirect effects analysis area. Analysis of potential visual impacts to this historic property would be required as part of the indirect effects analysis.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 32.4%). Known site density: 15.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 25. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 5 (cultural resources survey coverage: 14.6%). Known site density: 47.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 34. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 9 (cultural resources survey coverage: 100%). Known site density: 35.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 9. One NRHP-listed archaeological district is within the 200-foot analysis corridor. Analysis of potential visual impacts to this historic property would be required as part of the indirect effects analysis.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 8 (cultural resources survey coverage: 100%). Known site density: 22.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 8. The Palo Verde Mesa is considered a culturally sensitive area of great importance and may contain classes of archaeological sites considered to be sensitive to visual effects.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 14.1%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.

CHARACTERISTIC OR RESOURCE IMPACT		p-15e (Arizona)	p-15w (California)	p-16 (California)	p-17 (California)	p-18 (California)	cb-10 (Arizona)
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance; Colorado River.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance; Colorado River.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance; Colorado River.	Places of elevated spiritual importance.	Native infrastructure and the interconnectedness of the cultural and natural environment; Colorado River.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Crosses state trust land (moderate, long-term impact).	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations. Includes NRCS-classified farmland (negligible impact).	See Proposed Action and Alternatives 2 and 4P	See Proposed Action and Alternative 4P	Within or adjacent to existing or approved but not yet constructed solar energy facilities (minor short-term impacts).	Crosses state trust land (moderate, long-term impact).
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Proposed Action and Alternatives 2, 4, and 3M	See Proposed Action and Alternatives 2, 4, and 3M	See Proposed Action and Alternatives 2 and 4P	See Proposed Action and Alternative 4P	See Proposed Action and Alternative 4P	See Alternatives 3 and 4L
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Proposed Action and Alternatives 2, 4, and 3M	See Proposed Action and Alternatives 2, 4, and 3M	See Proposed Action and Alternatives 2 and 4P	See Proposed Action and Alternative 4P	See Proposed Action and Alternative 4P	See Alternatives 3 and 4L
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Proposed Action and Alternatives 2, 4, and 3M	See Proposed Action and Alternatives 2, 4, and 3M	See Proposed Action and Alternatives 2 and 4P	See Proposed Action and Alternative 4P	See Proposed Action and Alternative 4P	See Alternatives 3 and 4L
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Proposed Action and Alternatives 2, 4, and 3M	8 NSR are present, including rural residential area near Ripley, CA. See Proposed Action and Alternatives 2, 4, and 3M	No NSR present. See Proposed Action and Alternatives 2 and 4P	No NSR present. See Proposed Action and Alternative 4P	No NSR present. See Proposed Action and Alternative 4P	No NSR present. See Alternatives 3 and 4L

CHARACTERISTIC OR RESOURCE IMPACT		p-15e (Arizona)	p-15w (California)	p-16 (California)	p-17 (California)	p-18 (California)	cb-10 (Arizona)
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as p-15e	Same as p-15e	Same as p-15e	Same as p-15e	Same as p-15e
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as p-15e	Same as p-15e	Same as p-15e	Same as p-15e	Same as p-15e
Socioeconomics & Environmental Justice	Not available at this scale						
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as p-15e	Same as p-15e	Same as p-15e	Same as p-15e	Same as p-15e
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required. The main impact to viewers would be added visual clutter, which would be a negligible to moderate impact.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Crossings of high-risk floodplains associated with the Colorado River, likely greater than a single span (negligible impact). Otherwise the same as p-15w.	Same as p-15e	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as p-16	Same as p-16	Crossings of high-risk floodplains associated with the Colorado River, likely greater than a single span (negligible impact). Same as p-15e.

Table 2.2-36b Colorado River and California Zone Comparison of Impacts by Segment – i and ca Segments

CHARACTERISTIC OR RESOURCE IMPACT		i-08s (Arizona)	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
Segment length (miles)		1.3	6.7	3.4	0.4	6.6	2.8	3.0	2.6
Land ownership (miles)	BLM	-	-	0.6	-	-	0.2	2.5	1.6
	Reclamation	0.9		-	-				
	Arizona State Trust	0.2	-	-	-	-	-	-	-
	Private	1.3	6.7	3.4	0.4	6.6	2.8	3.0	2.6
Ground disturbance	Short-term Acres	7.5	45.1	21.2	3.1	43.5	17.9	15.8	16.7
	Long-term Acres	4.9	23.6	12.0	1.3	23.6	12.3	13.4	9.3
BLM RMP conformance	VRM	Compliant	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Corridors	Conform	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	RMP Amendments & Conformance	Not applicable	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)	Amendment included (CDCA Plan)
Other Plan conformance (Federal, county, municipal	Plan Conformance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.								
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Negligible to minor impact on sand transport corridor and dunes during construction and operation.	Negligible to minor impact on sand transport corridor and dunes during construction and operation.
Paleontological Resources	Potential Fossil Yield Classification	Low to unknown	Unknown	Unknown to high	Unknown	Unknown	Unknown to high	Unknown to high	Unknown

CHARACTERISTIC OR RESOURCE IMPACT		i-08s (Arizona)	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
Biological Resources (Vegetation Resources Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Colorado River crossing not adjacent to existing lines or development adding additional collision risk for birds moving along the river corridor. Open water crossing spanned so no direct impact to aquatic habitats; Reduced potential loss of riparian vegetation due to narrower crossing.	Spanned floodplain and canals west of the Colorado River, now agricultural, used by foraging and migrating birds but risk of avian mortality due to collision with towers and lines.	Spanned floodplain and canals west of the Colorado River, now agricultural, used by foraging and migrating birds but risk of avian mortality due to collision with towers and lines. Permanent impact to 0.9 acre of honey mesquite Alliance and 0.9 acre of big galleta Alliance.	West of the Colorado River in historic floodplain, now agricultural, used by foraging and migrating birds. Risk of avian mortality due to collision with towers and lines.	Spanned floodplain and canals west of the Colorado River, now agricultural, used by foraging and migrating birds but risk of avian mortality due to collision with towers and lines.	Spanned floodplain and canals west of the Colorado River, now agricultural, used by foraging and migrating birds but risk of avian mortality due to collision with towers and lines. Less than 0.1 acre of arrowweed Alliance impacted on BLM land and 0.2 acre of honey mesquite Alliance on non-BLM land.	Potential long-term impact to active windblown sand depositional areas with resulting potential impact to Harwood's eriastrum and Mojave fringe-toed lizard. Impact to blue paloverde-ironwood along wash crossing on 1 acre in ca-07. Potential impacts to 1.2 acres of big galleta Alliance.	Potential long-term impact to active windblown sand depositional areas with resulting potential impact to Harwood's eriastrum and Mojave fringe-toed lizard.
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 28.9%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 9 (cultural resources survey coverage: 2.0%). Known site density: 272.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 442. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 10.1%). Known site density: 35.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 30. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 21.3%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0.0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 6 (cultural resources survey coverage: 3.4%). Known site density: 109.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 177. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 33.1%). Known site density: 4.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 70.4%). Known site density: 3.8 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 100%). Known site density: 3.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.

CHARACTERISTIC OR RESOURCE IMPACT		i-08s (Arizona)	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Places of elevated spiritual importance; Colorado River.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	Places of elevated spiritual importance; Colorado River	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Crosses state trust land (moderate, long-term impact).	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations. Crosses NRCS-classified farmland (negligible impact).	See Alternatives 2 and 2E	See Alternatives 1 and 4K	Minor, short-term effects to residential land during construction. Minor, long-term effects to residential land during operations. Crosses NRCS-classified farmland (negligible impact).	Within or adjacent to existing or approved but not yet constructed solar energy facilities (minor, short-term impact).	Within or adjacent to existing or approved but not yet constructed solar energy facilities (minor, short-term impact).	Within or adjacent to existing or approved but not yet constructed solar energy facilities (minor, short-term impact).
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Alternatives 1 and 4K	See Alternatives 3, 1E, and 4M	See Alternatives 2 and 2E	See Alternatives 1 and 4K	See Alternative 1	See Alternatives 1, 3, and 4	See Alternatives 1, 2, 3, and 4	See Alternatives 1, 2, 3, and 4
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Crosses a portion of the Ehrenberg Sandbowl OHV Area (minor long-term impact).	See Alternatives 3, 1E, and 4M	See Alternatives 2 and 2E	See Alternatives 1 and 4K	See Alternative 1	See Alternatives 1, 3, and 4	See Alternatives 1, 2, 3, and 4	See Alternatives 1, 2, 3, and 4
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Alternatives 1 and 4K	See Alternatives 3, 1E, and 4M	See Alternatives 2 and 2E	See Alternatives 1 and 4K	See Alternative 1	See Alternatives 1, 3, and 4	See Alternatives 1, 2, 3, and 4	See Alternatives 1, 2, 3, and 4

CHARACTERISTIC OR RESOURCE IMPACT		i-08s (Arizona)	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Alternatives 1 and 4K	8 NSR are present in rural residential area south of Blythe, CA. See Alternatives 3, 1E, and 4M	No NSR present. See Alternatives 2 and 2E	No NSR present. See Alternatives 1 and 4K	21 NSR present in rural residential area near the Cyr Airfield near Blythe, CA. See Alternative 1	3 NSR present in rural residential area near Blyther, CA. See Alternatives 1, 3, and 4	No NSR present. See Alternatives 1, 2, 3, and 4	No NSR present. See Alternatives 1, 2, 3, and 4
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s
Socioeconomics & Environmental Justice	Not available at this scale								
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as i-08s	Same as i-08s	Same as i-08s	Same as i-08s. Risk to Cyr Aviation Airport reduced to minor to moderate by MM-TT-01.	Same as i-08s	Same as i-08s	Same as i-08s

CHARACTERISTIC OR RESOURCE IMPACT		i-08s (Arizona)	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required. The impact to viewers would be negligible for Segment ca-01.	Conforms to VRM class objectives no additional mitigation would be required. The impact to viewers would be negligible for Segment ca-02.	Conforms to VRM class objectives no additional mitigation would be required. The Project would be proportional to the surrounding landscape, thus would not dominate or be a major modification; however, because it would be a new development added to a view that contains very little development, it would be a moderate to major impact on the views of nearby residents.	Conforms to VRM class objectives no additional mitigation would be required. The impact to would be minor to major for Segment ca-05 for local viewers.	Conforms to VRM class objectives no additional mitigation would be required. The Project would be a major new addition to the view that would be a moderate to major impact for local viewers.	Conforms to VRM class objectives no additional mitigation would be required. The Project would be a negligible to minor addition to the landscape but would likely reach a moderate to major level for closer viewers.	Conforms to VRM class objectives no additional mitigation would be required. The Project would be a negligible to minor addition to the landscape but would likely reach a moderate to major level for closer viewers and add to visual clutter.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as p-15e	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as p-15e	Same as p-15e	Same as ca-01	Same as ca-01	Same as ca-01	Same as ca-01

Table 2.2-36c Colorado River and California Zone Comparison of Impacts by Segment – x Segments East, Located in California

CHARACTERISTIC OR RESOURCE IMPACT		x-09	x-10	x-11	x-12	x-13
Segment length (miles)		0.8	1.2	2.1	1.3	2.0
Land ownership (miles)	BLM	-	-	-	-	-
	Reclamation	-	-	-	-	-
	Arizona State Trust	-	-	-	-	-
	Private	0.8	1.2	2.1	1.3	2.0
Ground disturbance	Short-term Acres	7.2	6.2	14.4	8.5	11.8
	Long-term Acres	3.0	4.5	7.5	9.3	4.6

CHARACTERISTIC OR RESOURCE IMPACT		x-09	x-10	x-11	x-12	x-13
CDCA Plan	VRM	Compliant	Compliant	Compliant	Compliant	Compliant
	Corridors	Conform	Conform	Conform	Conform	Conform
	Plan Conformance	Amendment included	Amendment included	Amendment included	Amendment included	Amendment required
Other Plan (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.					
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as x-09	Same as x-09	Same as x-09	Same as x-09
Paleontological Resources	Potential Fossil Yield Classification	Unknown	Unknown	Unknown	Unknown	Unknown
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Spanned floodplain and canals west of the Colorado River, now agricultural, used by foraging and migrating birds, but risk of avian mortality due to collision with towers and lines.				

CHARACTERISTIC OR RESOURCE IMPACT		x-09	x-10	x-11	x-12	x-13
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 30.3%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 60.8%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 1.5%). Known site density: 125.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 65. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 4.9%). Known site density: 133.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 3.3%). Known site density: 62.5 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 30. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	Colorado River	No known concerns to Indian tribes.	No known concerns to Indian tribes.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	See Alternatives 1 and 4K	See Alternatives 1E and 4N	See Alternatives 3 and 4L	See Alternatives 3, 4, and 1E	See Alternatives 4, 2E, and 3M
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Alternatives 1 and 4K	See Alternatives 1E and 4N	See Alternatives 3 and 4L	See Alternatives 3, 4, and 1E	See Alternatives 4, 2E, and 3M
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Alternatives 1 and 4K	See Alternatives 1E and 4N	See Alternatives 3 and 4L	See Alternatives 3, 4, and 1E	See Alternatives 4, 2E, and 3M

CHARACTERISTIC OR RESOURCE IMPACT		x-09	x-10	x-11	x-12	x-13
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Alternatives 1 and 4K	See Alternatives 1E and 4N	See Alternatives 3 and 4L	See Alternatives 3, 4, and 1E	See Alternatives 4, 2E, and 3M
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	2 NSR present, residences along Colorado River in Blythe, CA.	63 NSR present, all residences along the Colorado River in Blythe, CA.	8 NSR present, all residences along the Colorado River in Blythe, CA.	2 NSR present, rural residential area southwest of Blythe, CA.	2 NSR present, rural residential area near Blythe, CA.
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as x-09	Same as x-09	Same as x-09	Same as x--09
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	With worker education programs, adherence to BMPS and APMs, risks for adverse impacts would be negligible to minor for all receptors. Impacts to public health and safety due to EMF during operations would be long-term negligible to minor.	Same as x-09	Same as x-09	Same as x-09	Same as x-09
Socioeconomics & Environmental Justice	Not available at this scale					
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as x-09	Same as x-09	Same as x-09	Same as x-09
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required. The Project would be proportional to the surrounding landscape, thus would not dominate or be a major modification; however, because it would be a new development added to a view that contains very little development, it would be a moderate to major impact on the views of nearby residents.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.

CHARACTERISTIC OR RESOURCE IMPACT		x-09	x-10	x-11	x-12	x-13
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Except where floodplains are too extensive to be spanned between structures impacts should be long-term negligible using BMPs, APMs, or avoidance through design and placement of structures. Otherwise must comply with 404 permitting or Section 10 permitting to minimize impacts.	Same as x-09	Same as x-09	Same as x-09	Same as x-09

Table 2.2-36d Colorado River and California Zone Comparison of Impacts by Segment – x Segments West, Located in California

CHARACTERISTIC OR RESOURCE IMPACT		x-15	x-16	x-19
Segment length (miles)		1.4	2.3	1.0
Land ownership (miles)	BLM	1.4	2.0	1.0
	Reclamation	-	-	-
	Arizona State Trust	-	-	-
	Private	-	0.3	-
Ground disturbance	Short-term Acres	11.2	15.0	13.1
	Long-term Acres	5.3	7.6	5.9
CDCA Plan	VRM	Compliant	Compliant	Compliant
	Corridors	Conform	Conform	Conform
	Plan Conformance	Amendment included	Amendment included	Amendment included
Other Plans (Federal, county, municipal)	Plan Conformance	Yes	Yes	Yes
Air Quality and Climate Change	Air Quality Emissions are proportional to the Proposed Action based on length of each segment. Due to the length of each segment, the impact of individual segments on air quality may be negligible to minor. However, the cumulative impact of all Project segments might have large total emissions, but the emissions are distributed across a long linear area. Climate Change is not available at this smaller scale.			
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Earthquake risk long-term negligible; no mapped active faults. No active mines; negligible short-term potential for preclusion of access; Soil loss/erosion risk negligible to minor, short-term to long-term; adherence to APMs & BMPs reduces risks to negligible. Negligible disruption of sand transport or dunes during construction and operation.	Same as x-15	Negligible to minor impact on sand transport corridor and dunes during construction and operation
Paleontological Resources	Potential Fossil Yield Classification	High to unknown	High to unknown	Unknown

CHARACTERISTIC OR RESOURCE IMPACT		x-15	x-16	x-19
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	Potential long-term impact to active windblown sand depositional areas with resulting potential impact to Harwood's eriastrum. Potential impacts to 2.7 acres of big galleta Alliance on BLM land.	Potential long-term impact to active windblown sand depositional areas with resulting potential impact to Harwood's eriastrum.	Potential long-term impact to active windblown sand depositional areas with resulting potential impact to Harwood's eriastrum.
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 62.9%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 13.3%). Known site density: 26.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 16. Cultural resources potentially sensitive to visual considerations are located within the 1-mile corridor. No known indirect visual impacts to known historic properties from structures along this segment.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 100.0%). Known site density: 16.5 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. No known historic properties sensitive to visual considerations. No known indirect visual impacts to known historic properties from structures along this segment.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of spiritual importance; Colorado River	Native infrastructure and the interconnectedness of the cultural and natural environment.	No known concerns to Indian tribes.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	See Alternative 2	See Alternative 2	Within or adjacent to existing or approved but not yet constructed solar energy facilities (minor short-term impact).
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	See Alternative 2	See Alternative 2	See Alternatives 1, 2, 3, and 4
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	See Alternative 2	See Alternative 2	See Alternatives 1, 2, 3, and 4
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	See Alternative 2	See Alternative 2	See Alternatives 1, 2, 3, and 4
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	No NSR present. See Alternative 2	No NSR present. See Alternative 2	No NSR present. See Alternatives 1, 2, 3, and 4
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Negligible risk with adherence to Federal, state, and local laws and regulations; BMPs, APMs, and a HMMP; and the Hazardous Materials Mitigation Sequence.	Same as x-16	Same as x-16
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	Same as x-09	Same as x-09	Same as x-09
Socioeconomics & Environmental Justice	Not available at this scale			

CHARACTERISTIC OR RESOURCE IMPACT		x-15	x-16	x-19
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	All traffic and transportation risks reduced to negligible to minor with adherence to APMs, BMPs, and MMs TT-1 and TT-2.	Same as x-15	Same as x-15
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.	Conforms to VRM class objectives no additional mitigation would be required.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as x-09	Same as x-09	Same as x-09

Table 2.2-37 Alternative 1 and Subalternative Impact Summary

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 1	1A	1B	1C	1D	1E
Land ownership (miles)	BLM	58.8	-	-	-	-	-
	Reclamation	6.4	-	-	-	-	-
	Arizona State Trust	19.4	-	-	-	-	-
	Private	25.6	-	-	-	-	-
	Indian Lands	1.4	-	-	-	-	-
	Total Length	111.6	9.9	9.1	13.9	0.6	9.2
Ground disturbance	Short-term Acres	648.3	51.9	46.8	75.8	4.2	59.8
	Long-term Acres	390.3	33.8	31.5	50.5	2.2	37.3
BLM RMP conformance	VRM	Amendment included for 1 segment	Amendment included for 2 segments	Amendment included for 1 segment	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
	Corridors	Except 1 segment	Except 2 segments	Except 2 segments	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
	RMP Amendments & Conformance	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, Lake Havasu, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan
Air Quality and Climate Change	Criteria Air Pollutants – Construction	Same as Proposed Action	Same as Proposed Action				
	CO	36.0 tpy	Proportional to Total Length				
	NO_x	98.0 tpy	Proportional to Total Length				
	PM_{10}	47.8 tpy	Proportional to Total Length				
	$PM_{2.5}$	9.0 tpy	Proportional to Total Length				
	SO_2	0.2 tpy	Proportional to Total Length				
	VOC	8.6 tpy	Proportional to Total Length				
	CO_{2e}	32,500 tpy	Proportional to Total Length				

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 1	1A	1B	1C	1D	1E
	GHGs – Construction CO_{2e}	Same as Proposed Action	Same as Proposed Action				
	Criteria Air Pollutants – O&M	Would not exceed NAAQS or CAAQS	Would not exceed NAAQS or CAAQS				
	GHGs – SF_6 – O&M	Same as Proposed Action	Same as Proposed Action				
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Uses segments ca-07, ca-09, and x-19 which would have negligible to minor impact on sand transport and dunes during construction and operation	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Paleontological Resources	Potential damage to known paleontological resources or formations with potential to contain paleontological resources	Same as Proposed Action	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native wildlife habitat and designated management areas; and Migratory birds.	In areas where no linear facilities and few roads exist these impacts would be moderate. Protected microphyll washes and up to 0.3 acre of total wash habitat would be crossed but would be spanned through micrositing. Negligible to minor long-term impacts in undeveloped areas due to facilitating increased abundance of non-native plants, especially in dune habitats. APMs and BMPs would reduce impact. Project would cross 3.5 miles of Harwood's eriastrum habitat; measures would protect individuals and maintain sand transport. Disturbance could occur on 23 acres of suitable habitat. Minor to moderate impact with APMs and BMPs. The collision risk at the Colorado River crossing is higher than under the Proposed Action because the crossing is not adjacent to existing facilities. Negligible impacts to bighorn sheep. Negligible long-term impacts to wildlife and habitats by facilitating increased recreational access to remote areas. Project would cross only a minor amount of mostly degraded	Slightly greater, but still negligible impact to native vegetation communities and general wildlife habitat compared to Alternative 1.	Slightly greater, but still negligible impact to native vegetation communities and general wildlife habitat compared to Alternative 1.	Impacts to wildlife and vegetation the same as for Alternative 1.	Impacts to wildlife and vegetation the same as for Alternative 1.	Impacts to wildlife and vegetation the same as for Alternative 1.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 1	1A	1B	1C	1D	1E
		habitat for Sonoran desert tortoise and is not within Sonoran pronghorn habitat. Negligible impacts to bighorn sheep. Minor short- and long-term impact to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts on 4 miles of habitat. Would not cross Kofa NWR. Additional hazard at the Colorado River crossing because there are no existing structures to match.					
Cultural Resources	Damage or loss of a cultural site or potential site under federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 23 (cultural resources survey coverage: 30.7%). Known site density: 5.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 75. Key resources projected to occur include trails and intaglios.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 7.6%). Known site density: 16.6 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 26. Subalternative 1A would result in a reduced visual impact and less potential to affect cultural resources by ground disturbance compared to Alternative 1.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 2.5%). Known site density: 54.1 sites per 100 acres1. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 82. Subalternative 1B results in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared to Alternative 1.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 2.0%). Known site density: 30.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 102. Subalternative 1C results in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared to Alternative 1.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 89.6%). Known site density: 22.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2. Subalternative 1D would result in a reduced visual impact and less potential to affect cultural resources by ground disturbance compared to Alternative 1.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 10.6%). Known site density: 46.4 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 104. Subalternative 1E results in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared to Alternative 1.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment, places of elevated spiritual importance, and the Colorado River.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	No known concerns to Indian tribes.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 1	1A	1B	1C	1D	1E
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Same as Proposed Action except Alternative 1 would avoid the Kofa NWR and the YPG, would cross through more ASLD land, would affect more residential land and NRCS-classified farmland in California, and affect more solar facilities. It would not be consistent with Town of Quartzsite or La Paz County plans. In California, it would not be in compliance with the CDCA Plan so would require an amendment.	One additional RMP ROW amendment and one additional VRM amendment than Alternative 1.	One additional RMP ROW amendment than Alternative 1.	One additional VRM amendment than Alternative 1.	Same as Alternative 1	Same as Alternative 1
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	Would impede access to three stock tanks versus two under the Proposed Action. Otherwise the Same as Proposed Action. No helicopter fly yards and no measurable impact to grazing from helicopter use.	Same as Proposed Action	Same as Proposed Action with MM GR-1 mitigation	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Greater impacts to long-term recreation where route varies from Proposed Action as power lines would be new and may impact the quality of the recreation experience. Minor to major effects to La Posa LTVA, Dome Rock Camping Area, and the Ehrenberg Sandbowl OHV area. Kofa NWR would not be crossed. Otherwise the Same as Proposed Action.	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Same as Proposed Action	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	Although there would be a difference in number of NSR, impacts would be the same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 1	1A	1B	1C	1D	1E
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Socioeconomics & Environmental Justice	Employment; Tax collection & revenue; Population or population displacement; Non-market values and ecosystem services; Revenue from recreation sector; Local economy; Reductions in property values; EJ Populations; disproportionate adverse impacts to EJ populations	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	Alternative 1 would be within 0.3-mile of the Cyr Aviation Airport. The aviation safety risk associated with the Cyr Aviation Airport would be reduced to minor to moderate. Structures and lines in the Plomosa or Dome Rock Mountains would pose a minor to moderate long-term aviation hazard to AGFD aircraft; with MM-TT-02 this impact would be reduced to minor and long-term.	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Proposed Action

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 1	1A	1B	1C	1D	1E
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Impacts to viewers along I-10 would be minor to moderate. Additionally, there are larger areas of higher scenic quality south of I-10 than there are to the north, meaning that viewers along I-10 attracted to the distant scenic views to the south would be viewing these areas with the Project in the intervening landscape. In areas of moderate impact, the visibility of distant scenic quality A areas may further increase the adverse visual impact of the Project, notably Segment i-04. Addition of the transmission line would add a visible and, in many cases, noticeable development. However, most of the areas crossing BLM-managed public land would meet established VRM class objectives.	Subalternative 1A would further remove the Project from proximity to I-10 viewers and reducing visual impacts.	Subalternative 1B would further remove the Project from proximity to I-10 viewers and reducing visual impacts.	Impacts would be similar to Alternative 1 with two additional crossings of I-10, increasing impacts in those locations.	Under Subalternative 1D, impacts to I-10 travelers would be minor.	Subalternative 1E would be further south of I-10 reducing the visual impacts.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as Proposed Action	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible or site of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP ineligible sites.

Table 2.2-38 Alternative 2 and Subalternatives Impact Summary

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
Land ownership (miles)	BLM	80.1	-	-	-	-	-
	Reclamation	1.7	-	-	-	-	-
	DOD	0.2	-	-	-	-	-
	Arizona State Trust	17.6	-	-	-	-	-
	Private	26.2	-	-	-	-	-
	Indian Lands	-	-	-	-	-	-
	Total Length	125.8	32.0	13.5	6.0	4.3	5.4
Ground disturbance	Short-term Acres	754.8	165.2	75.4	85.9	24.7	33.0
	Long-term Acres	462.8	111.1	49.4	28.0	16.2	16.6

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
BLM RMP conformance	VRM	Amendments included for five segments	Amendments included for eight segments	Amendments included for six segments	Amendments included for eight segments	Amendments included for six segments	Amendments included for nine segments.
	Corridors	Except one segment	Except two segments	Except two segments	Except four segments	Same as Alternative 2	Same as Alternative 2
	RMP Amendments & Conformance	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan
Air Quality and Climate Change	Criteria Air Pollutants – Const.	Same as Proposed Action	Same as Proposed Action				
	CO	39.6	Proportional to Total Length				
	NO_x	107.8	Proportional to Total Length				
	PM_{10}	52.6	Proportional to Total Length				
	$PM_{2.5}$	9.9	Proportional to Total Length				
	SO_2	0.2	Proportional to Total Length				
	VOC	9.5	Proportional to Total Length				
	CO_{2e}	35,747	Proportional to Total Length				
	GHGs – Construction CO_{2e}	Same as Proposed Action	Same as Proposed Action				
	Criteria Air Pollutants – O&M	Would not exceed NAAQS or CAAQS	Would not exceed NAAQS or CAAQS				
	GHGs – SF_6 – O&M	Same as Proposed Action	Same as Proposed Action				
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Uses segments ca-07, ca-09, and x-19 which would have negligible to minor impact on sand transport and dunes during construction and operation	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Paleontological Resources	Potential damage to known paleontological resources or formations with potential to contain paleontological resources	Potentially increased impacts from Proposed Action with three segments having high to very high PFYC – negligible to minor long-term impacts with mitigations	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	In areas where no linear facilities and few roads exist these impacts would be moderate. Protected microphyll washes and up to 0.8 acre of total wash habitat would be crossed but would be spanned through micrositing Minor long-term impacts in undeveloped areas due to facilitating increased abundance of non-native plants, especially in dune habitats. APMs and BMPs would reduce impact. Project would cross 7 miles of Harwood's eriastrum habitat; measures would protect individuals and maintain sand transport. Predation potential and electrocution risk similar to the Proposed Action. Displacement similar to the Proposed Action. Negligible long-term impacts to wildlife and habitats by facilitating increased recreational access to remote areas. Minor impact on Sonoran desert tortoise habitat, and negligible impact on Sonoran pronghorn. Avoids Mojave desert tortoise habitat. Passes through Cunningham Peak, a bighorn sheep lambing area. Impacts to wildlife habitats minimized through use of APMs and BMPs. Avoids the Kofa NWR. Migratory birds similar to Proposed Action. Increased, minor short- and long-term impact to Mojave fringe-toed lizard due to possible mortality by Project activities and habitat impacts on 4 miles of habitat.	Subalternative 2 would avoid potential disturbance associated with Segment p-01 at a developed wildlife water in the Big Horn Mountains that may be used by bighorn sheep; and avoid crossing a bighorn sheep dispersal corridor between Burnt Mountain and the Big Horn Mountains.	Overall substantially similar to Alternative 2	The increased human presence associated with constructing and operating the line could interfere with wildlife use of the developed wildlife water in Johnson Canyon. Development of Subalternative 2C could increase public access into remote habitats and could permanently alter the character and function of the area for wildlife. Subalternative 2C would result in substantially more impacts to biological resources than Alternative 2, which is parallel to existing development through Copper Bottom Pass.	Overall substantially similar to Alternative 2	Overall substantially similar to Alternative 2

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 50 (cultural resources survey coverage: 32.5%). Known site density: 7.8 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 150. Key resources projected to occur include trails and intaglios. Areas of Indian Tribal concern (NRHP-listed Ripley Intaglio Site and Limekiln Wash Intaglio Site) are in the vicinity of this alternative route. Continued consultation with Indian Tribes and/or other interested parties potentially may identify additional resources of concern.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 5.4%). Known site density: 4.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 37. Subalternative 2A would result in a greater visual impact but a comparable amount of ground disturbance compared to Alternative 2.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 5 (cultural resources survey coverage: 12.7%). Known site density: 23.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 40. Subalternative 2B would result in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared with Alternative 2.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 29.9%). Known site density: 7.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 10. Subalternative 2C has a higher potential to affect cultural resources based on projected site counts and the disturbance footprint, as compared to Alternative 2.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 15.6%). Known site density: 12.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 6. Subalternative 2D would result in a greater visual impact but a reduced potential to affect cultural resources by ground disturbance compared to Alternative 2.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 7.6 (cultural resources survey coverage: 7.6%). Known site density: 40.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 53. Subalternative 2E would result in a greater potential to affect cultural resources by ground disturbance compared to Alternative 2.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment, places of elevated spiritual importance, and the Colorado River.	Native infrastructure and the interconnectedness of the cultural and natural environment; places of elevated spiritual importance.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment.	Native infrastructure and the interconnectedness of the cultural and natural environment.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Same as the Proposed Action except inconsistent with La Paz County Zoning Plan and possibly the Quartzsite General Plan. Avoids the Kofa NWR. Affects greater number of solar facilities. One ROW RMP amendment required and five VRM RMP amendments. In California, it would not be in compliance with the CDCA Plan so would require an amendment.	Passes through renewable energy development avoidance area and include more NRCS-classified farmland in CA. Would require two RMP ROW amendments and eight VRM RMP amendments. Otherwise similar to Alternative 2.	Would require two RMP ROW amendments and six VRM RMP amendments. Otherwise similar to Alternative 2.	Would require four RMP ROW amendments and eight VRM RMP amendments. Otherwise similar to Alternative 2.	Would require six VRM RMP amendments. Otherwise similar to Alternative 2.	Would require nine VRM RMP amendments and two RMP ROW amendments.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
Grazing and Rangeland	Access to range or improvements; Loss of range relative to UMs; Fragmentation of allotments; Degradation of range quality	Same as Alternative 1	No impediments to any stock tanks. Otherwise the Same as Proposed Action.	Same as Proposed Action.	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Long-term recreation quality similar to Proposed Action except in Quartzsite Zone where powerline would be new to the landscape (negligible to minor). Two Alternative 2 segments would cross the La Posa LTVA (minor to moderate impact), but, by comparison to Alternative 1, Dome Rock Camping Area would not be crossed by Alternative 2. Otherwise similar to the Proposed Action.	Same as Alternative 2	Same as Alternative 2	Route would go through Johnson Canyon rather than the Copper Bottom Area, where the powerline would be a new feature of the landscape and may detract from the experience. Otherwise the same as Alternative 2.	Same as Alternative 2	Same as Alternative 2
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Same as for Proposed Action	Same as Alternative 2	Same as Alternative 2	Includes segments cb-02 and cb-04, which would have major long-term impacts on lands with wilderness characteristics Polygon 23 (would not meet lands with wilderness characteristics criteria).	Same as Alternative 2	Same as Alternative 2
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	Although there would be a difference in number of NSR, impacts would be the same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Socioeconomics & Environmental Justice	Employment; Tax collection & revenue; Population or population displacement; Non-market values and ecosystem services; Revenue from recreation sector; Local economy; Reductions in property values; EJ Populations; disproportionate adverse impacts to EJ populations	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	Structures and lines in the Plomosa or Dome Rock Mountains would pose a minor to moderate long-term aviation hazard to AGFD aircraft; with MM-TT-02 this impact would be reduced to minor and long-term.	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 2	2A	2B	2C	2D	2E
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Impacts along the eastern portion (Segments i-01 through i-05) would be the same as Alternative 1. The large lattice H-frame structures would be a major modification and would dominate the views for travelers on SR 95, particularly in conjunction with the existing utility infrastructure. An additional RMP amendment would change the VRM class within the corridor to VRM Class IV.	Subalternative 2A would move the location of the Project south away from I-10, which would reduce the visual impacts.	Subalternative 2B would move the location of the Project south away from I-10, which would reduce the visual impacts.	Subalternative 2C would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 2D would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 2E would move the location of the Project north, roughly mid-way between the Proposed Action route and I-10; however, because of the predominate agricultural use and limited sensitive viewers, there would be no discernable change in visual impacts.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as for Proposed Action	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2

Table 2.2-39 Alternative 3 Subalternative Impacts

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Land ownership (miles)	BLM	82.6	-	-	-	-	-	-	-	-	-	-	-	-
	Reclamation	0.7	-	-	-	-	-	-	-	-	-	-	-	-
	DOD	0.2	-	-	-	-	-	-	-	-	-	-	-	-
	Arizona State Trust	14.0	-	-	-	-	-	-	-	-	-	-	-	-
	Private	25.5	-	-	-	-	-	-	-	-	-	-	-	-
	Indian Lands	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Length	123.0	35.4	11.9	25.4	13.9	10.8	9.2	0.6	10.8	2.8	3.3	14.5	11.4
Ground disturbance	Short-term Acres	768.1	183.3	61.1	127.5	75.8	57.4	53.6	4.2	58.2	10.4	77.0	72.4	72.7
	Long-term Acres	466.4	123.3	37.9	85.5	50.5	37.8	50.8	2.2	38.3	17.4	14.9	68.4	27.4

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
BLM RMP conformance	VRM	6 segments include amendments	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	7 segments include amendments	Same as for Alternative 3	Same as for Alternative 3
	Corridors	Except 5 segments	Except 6 segments	Same as for Alternative 3	Except 4 segments	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Except 6 segments	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3	Same as for Alternative 3
	RMP Amendments & Conformance	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, Lake Havasu)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments required (YFO, CDCA Plan)	Amendments required (YFO, CDCA Plan)	Amendments required (YFO, CDCA Plan)
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan and Town of Quartzsite General Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan
Air Quality and Climate Change	Criteria Air Pollutants – Construction	Same as Proposed Action	Same as Proposed Action											
	CO	38.0	Proportional to Total Length											
	NO_x	103.6	Proportional to Total Length											
	PM_{10}	50.5	Proportional to Total Length											
	$PM_{2.5}$	9.5	Proportional to Total Length											
	SO_2	0.2	Proportional to Total Length											
	VOC	9.1	Proportional to Total Length											
	CO_{2e}	34,331	Proportional to Total Length											
	GHGs – Cons. CO_{2e}	Same as Proposed Action	Same as Proposed Action											
	Criteria Air Pollutants – O&M	Would not exceed NAAQS or CAAQS	Would not exceed NAAQS or CAAQS											
	GHGs – SF_6 – O&M	Same as Proposed Action	Same as Proposed Action											
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Uses segments ca-07, ca-09, and x-19 which would have negligible to minor impact on sand transport and dunes during construction and operation.	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Paleontological Resources	Potential damage to known paleontological resources or formations with potential to contain paleontological resources	Same as Proposed Action	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Slightly higher potential for impacts than Alternative Route 3	Same as Alternative 3	Same as Alternative 3	Slightly higher potential for impacts than Alternative 3	Same as Alternative 3
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	In areas where no linear facilities and few roads exist these impacts would be moderate. Much of this route is in pristine condition, therefore the loss of native habitat/communities is greater than the other alternatives. Moderate long-term impacts due to facilitating spread and increased abundance of non-native plants into new areas, especially into the Dome Rock Mountains and dune habitats. Project would cross 0.6 mile of Harwood's eriastrum habitat. Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities. Moderate impact with APMs and BMPs. The collision risk at the Colorado River crossing is higher than under the Proposed	Same as Alternative 3	Same as Alternative 3	Subalternative 3C would result in substantially greater impacts than Alternative 3, where habitats have been degraded adjacent to I-10.	Subalternative 3D would result in substantially greater impacts than Alternative 3, where habitats have been degraded adjacent to I-10.	Same as Alternative 3	Subalternative 3F would result in a reduction of impacts to vegetation and wildlife resources.	Same as Alternative 3	Subalternative 3H would result in a reduction of impacts to plant and wildlife resources by not utilizing Alternative 3 Segment x-05, which passes close to the Plomosa Mountains through good quality desert scrub habitat where several special status species may be present, and the area has not been impacted by linear facilities and developments.	Same as Alternative 3	Subalternative 3K passes through the remote, rugged slopes at Cunningham Peak and Johnson Canyon in the Dome Rock Mountains. The consequence of either option is the same—major adverse impacts to bighorn sheep and other wildlife in this near-pristine area.	Impacts to wildlife, especially to bighorn sheep, would be reduced by moving the Project out of Copper Bottom Pass, which is important to bighorn sheep	Potential impacts to biological resources from Subalternative 3M and Alternative 3 are very similar through the agricultural area just west of the Colorado River. At the river crossing, Subalternative 3M would cross adjacent to an existing utility line, where matching conductor height and structures could reduce potential collision by birds, affording a benefit to migratory birds.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
		Action because the crossing is not adjacent to existing facilities. Major long-term impacts to bighorn sheep in the Dome Rock Mountains by degrading nearly pristine habitat. Major long-term impacts to bighorn sheep in the Dome Rock Mountains by facilitating increased recreational access to remote areas. Minor impact on Sonoran desert tortoise habitat, and negligible impact on Sonoran pronghorn. Passes through Cunningham Peak, a bighorn sheep lambing area. Impacts to wildlife habitats minimized through use of APMs and BMPs. Avoids the Kofa NWR. Minor short- and long-term impacts to migratory birds due to potential collision hazard with structures, conductors, and guy lines, and additional hazard at the Colorado River.												

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 35 (cultural resources survey coverage: 24.4%). Known site density: 9.4 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 134. Key resources projected to occur include trails.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 5.0%). Known site density: 4.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 41. Subalternative 3A would result in a greater visual impact and a greater potential to affect cultural resources compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 7.5%). Known site density: 9.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 19. Subalternative 3B would result in less ground disturbance and visual impact compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 5.9%). Known site density: 11.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 34. Subalternative 3C would result in a comparable visual impact and a lower potential to affect cultural resources by ground disturbance compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 2 (cultural resources survey coverage: 2.0%). Known site density: 30.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 102. Subalternative 3D would result in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared to Alternative 3	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 29.0%). Known site density: 9.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 21. Subalternative 3E would result in a comparable visual impact but a greater potential to affect cultural resources by ground disturbance compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 23.7%). Known site density: 11.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 21. Subalternative 3F would result in a comparable visual impact but less potential to affect cultural resources by ground disturbance compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 89.6%). Known site density: 22.2 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2. Subalternative 3G demonstrates a low sensitivity for cultural resources in the 200-foot analysis corridor compared to Alternative 3. The potential effect to cultural resources by Subalternative 3G must be further evaluated in conjunction with the pairing of Subalternative 3G with Subalternatives 3D, 3E, 3F, 3H, and/or 3J.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 56.6%). Known site density: 4.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 7. The potential effect to cultural resources by Subalternative 3H must be further evaluated in conjunction with the pairing of Subalternative 3H with Subalternatives 3D and 3L compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 36.2%). Known site density: 4.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. The potential effect to cultural resources by Subalternative 3J must be further evaluated in conjunction with the pairing of Subalternative 3J with Subalternatives 3E, 3F, or 3G and 3H compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 44.8%). Known site density: 4.6 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2. Subalternative 3K would result in a greater visual impact but less potential to affect cultural resources by ground disturbance compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 45.5%). Known site density: 4.9 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 7. Subalternative 3L would result in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared to Alternative 3.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 12 (cultural resources survey coverage: 27.0%). Known site density: 15.8sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 65. Subalt 3M would result in a comparable visual impact but a greater potential to affect cultural resources by ground disturbance compared to Alternative 3.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the cultural and natural environment; the Colorado River; intrusion on pristine landscapes.	Native infrastructure and the interconnected ness of the cultural and natural environment; places of elevated spiritual importance.	No known concerns to Indian tribes.	Native infrastructure and the interconnected ness of the cultural and natural environment; intrusion on pristine landscapes.	No known concerns to Indian tribes.	Native infrastructure and the interconnected ness of the cultural and natural environment.	Native infrastructure and the interconnected ness of the cultural and natural environment.	No known concerns to Indian tribes.	Native infrastructure and the interconnected ness of the cultural and natural environment; places of elevated spiritual importance.	No known concerns to Indian tribes.	Native infrastructure and the interconnected ness of the cultural and natural environment; intrusion on pristine landscapes.	Native infrastructure and the interconnected ness of the cultural and places of elevated spiritual importance.	Native infrastructure and the interconnected ness of the cultural and places of elevated spiritual importance; the Colorado River.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Avoids Kofa NWR. Inconsistent with La Paz County Zoning Plan. Would affect more NRCS-classified farmland and solar energy facilities than Proposed Action. One amendment to Yuma RMP for ROW and six for VRM. In California, it would not be in compliance with the CDCA Plan so would require an amendment.	Passes avoidance area for renewable energy development. More ASLD & NRCS-class farmland. Two RMP ROW amendments. Otherwise same as Alternative 3.	More ASLD land. Otherwise same as Alternative 3.	More ASLD land; no ROW amendments to RMP. Otherwise same as Alternative 3.	One additional VRM amendment than Alternative 3.	Passes through La Posa LTVA which may be inconsistent with Quartzsite General Plan. Otherwise same as Alternative 3.	Same as Alternative 3	Same as Alternative 3	Passes Tier III growth area. Two ROW amendments to RMP. Otherwise same as Alternative 3. Otherwise same as Alternative 3.	Same as Alternative 3	Seven segments would require amendments to RMP for VRM. Otherwise same as Alternative 3.	Same as Alternative 3	Same as Alternative 3
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	Same as the Proposed Action	Removes impediments to 2 tanks under the Proposed Action but impedes access to another tank. Otherwise the same as Alternative 3	Impediments to 3 stock tanks total; negligible impact with MM GR-1. Otherwise the same as Alternative 3.	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3, except no helicopter fly yards, and no measurable impacts from helicopters.	Same as Alternative 3

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Long-term recreation quality similar to Proposed Action except where powerline would be new to the landscape (negligible to minor). Would not cross the La Posa LTVA, Dome Rock Camping Area, Kofa NWR, Copper Bottom Pass, or Johnson Canyon. Otherwise similar to the Proposed Action.	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Would go through La Posa LTVA. Otherwise the same as Alternative 3.	Adjacent to La Posa LTVA. Otherwise the same as Alternative 3.	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Route would go through Johnson Canyon – minor impact with mitigation. Otherwise the same as Alternative 3.	Route would go through Dome Rock Camping Area. Otherwise the same as Alternative 3.	Same as Alternative 3
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Includes segment cb-01 and cb-04 with major long-term effect to lands with wilderness characteristics Polygon 23 (would not meet lands with wilderness characteristics criteria).	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	Although there would be a difference in number of NSR, impacts would be the same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Socioeconomics & Environmental Justice	Employment; Tax collection & revenue; Population or population displacement; Non-market values and ecosystem services; Revenue from recreation sector; Local economy; Reductions in property values; EJ Populations; disproportionate adverse impacts to EJ populations	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 3	3A	3B	3C	3D	3E	3F	3G	3H	3J	3K	3L	3M
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	Structures and lines in the Plomosa or Dome Rock Mountains would pose a minor to moderate long-term aviation hazard to AGFD aircraft; with MM-TT-02 this impact would be reduced to minor and long-term.	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Under Alternative 3, impacts to the I-10 corridor in the eastern portion of the Project Area would be the same as the Proposed Action. Alternative 3 would avoid any impacts to the SR 95 corridor. Impacts to the remainder of this route would the same as Alternative 2.	Subalternative 3A would reduce the effect on visual resources as viewed from I-10.	Subalternative 3B would have the same impact to this portion of the I-10 as described for Alternative 1.	Subalternative 3C would shift the Project nearly 5 miles south of I-10, virtually eliminating visual impacts in that area. Visual impacts would slowly increase as the Project approaches I-10.	Impacts from Subalternative 3D would be the same as those described for Subalternative 1C.	Subalternative 3E would have minor impacts to the views of I-10 travelers who would see the Project paralleling the WAPA 161kV transmission line; however, impacts to nearby residents would be moderate to major.	Subalternative 3F would place the Project in closer proximity to I-10, with impacts as described under Alternative 1.	Subalternative 3G would have the same impacts as described for Subalternative 1D.	Subalternative 3H would have impacts to I-10 travelers similar to Alternative 3, the addition of other segments along I-10 west of Quartzsite would increase the visual impacts, as compared to Alternative 3.	Subalternative 3J would use Segment i-05 in conjunction with other segments. See analysis of Subalternative 3F.	Subalternative 3K would have no impacts as viewed within the I-10 corridor.	Subalt 3L would move the Project along I-10 for this segment; see analysis of impacts from this segment under Alternative 1.	Subalt 3M would have no effect on visual resource impacts as viewed within the I-10 corridor.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as Proposed Action	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3	Same as Alternative 3

Table 2.2-40 Alternative 4 Subalternative 4A through 4H Impacts

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
Land ownership (miles)	BLM	84.6	-	-	-	-	-	-	-	-
	Reclamation	0.8	-	-	-	-	-	-	-	-
	Arizona State Trust	0.2								
	DOD	6.0	-	-	-	-	-	-	-	-
	Private	28.7	-	-	-	-	-	-	-	-
	Total Length	120.3	29.7	25.6	10.5	12.5	3.2	4.4	6.6	7.7
Ground disturbance	Short-term Acres	760.4	165.8	126.1	52.6	68.3	69.0	24.5	51.6	41.2
	Long-term Acres	468.1	78.5	85.5	49.7	56.9	17.2	25.1	52.2	27.0
BLM RMP conformance	VRM	7 Segments include amendments	8 Segments include amendments	Same as Alternative 4	Same as Alternative 4	8 Segments include amendments	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
	Corridors	Except 5 segments	Same as Alternative 4	Except 6 segments	Same as Alternative 4	Except 6 segments	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
	RMP Amendments & Conformance	Amendments included (YFO Lake Havasu, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO)	Amendments required (YFO)	Amendments required (YFO)
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan
Air Quality and Climate Change	Criteria Air Pollutants – Construction	Same as Proposed Action	Same as Proposed Action							
	CO	38.7 tpy	Proportional to Total Length							
	NO_x	105.4 tpy	Proportional to Total Length							
	PM_{10}	51.4 tpy	Proportional to Total Length							
	$PM_{2.5}$	9.7 tpy	Proportional to Total Length							
	SO_2	0.2 tpy	Proportional to Total Length							
	VOC	9.3 tpy	Proportional to Total Length							
	CO_{2e}	34,943 tpy	Proportional to Total Length							
	GHGs – Cons. CO_{2e}	Same as Proposed Action	Same as Proposed Action							
	Criteria Air Pollutants – O&M	Would not exceed NAAQS or CAAQS	Would not exceed NAAQS or CAAQS							
	GHGs – SF_6 – O&M	Same as Proposed Action	Same as Proposed Action							

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/ Mining (access to known resources or claims) Soils	Uses segments ca-07, ca-09, and x-19 which would have negligible to minor impact on sand transport and dunes during construction and operation	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Paleontological Resources	Potential damage to known paleontological resources or formations with potential to contain paleontological resources	Same as Proposed Action but less than Alternative 2	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Biological Resources (Vegetation Resources. Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	In areas where no linear facilities and few roads exist these impacts would be moderate. Moderate long-term impacts due to facilitating spread and increased abundance of non-native plants into new areas, especially into the Dome Rock Mountains and dune habitats. Project would cross 0.6 mile of Harwood's eriastrum habitat. Moderate short- and long-term impacts of ground disturbance on protected and special status plants and plant communities. Moderate impact with APMs and BMPs. Predation potential and electrocution	Slight increase of impacts to wildlife compared to Alternative 4 due in part to coming close to a wildlife water that may be used by desert bighorn sheep and mule deer.	Minor reduction of impacts from Alternative 4, crossing less desert habitat in moderate to good condition.	Parallels I-10 and would not contribute to any substantial new impacts.	Greater impacts than for Alternative 4 as special status species may occur in desert scrub habitat within the corridor, mostly in the Plomosa Mountains.	As with Alternative 4, major adverse impacts to bighorn sheep and other wildlife in near-pristine area.	Slightly less impact to biological resources than Alternative 4 because it impacts approximately one mile less.	Impacts substantially less than for Alternative 4 by staying in an existing corridor through Copper Bottom Pass.	Fewer impacts than Alternative 4.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
		risk same as Proposed Action. Major long-term impacts to bighorn sheep in the Dome Rock Mountains by degrading nearly pristine habitat. Route would be close to a wildlife water in Johnson Canyon. Major long-term impacts to bighorn sheep in the Dome Rock Mountains by degrading nearly pristine habitat and facilitating increased recreational access to remote areas. Minor impact on Sonoran desert tortoise and Sonoran pronghorn habitat. Passes through Cunningham Peak, a bighorn sheep lambing area. Impacts to wildlife habitats minimized through use of APMs and BMPs. Avoids the Kofa NWR. Migratory birds similar to Proposed Action.								
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access	Known NRHP-eligible sites or sites requiring NRHP evaluation: 41 (cultural resources survey coverage: 23.2%). Known site density: 10.3 sites per 100 acres. Projected NRHP-eligible sites or sites	Known NRHP-eligible sites or sites requiring NRHP evaluation: 11 (cultural resources survey coverage: 43.2%). Known site density: 4.3 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 33.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 3.6%). Known site density: 17.5 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 111.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 2.0%). Known site density: 18.5 sites per 100 acres[1]. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 6 (cultural resources survey coverage: 5.7%). Known site density: 38.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 122.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 4.8%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 8.7%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 43.7%). Known site density: 2.8 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 2.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 31.6%). Known site density: 8.4 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 12.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
	leading to potential vandalism; disturbance of human remains.	requiring NRHP evaluation: 170. Key resources projected to occur include trails. Areas of tribal concern (NRHP-listed Ripley Intaglio Site, NRHP-listed Eagletail Petroglyph Site, and Limekiln Wash Intaglio Site) are in the vicinity of this alternative route. Continued consultation with Indian tribes and/or other interested parties potentially may identify additional resources of concern.	Subalternative 4A would result in a greater visual impact and a greater potential to impact cultural resources by ground disturbance compared to Alternative 4.	Subalternative 4B would result in a greater visual impact and a greater potential to affect cultural resources by ground disturbance compared to Alternative 4.	The potential effect to cultural resources by Subalternative 4C must be further evaluated in conjunction with the pairing of Subalternative 4C with Subalternatives 4D or 4J.	Subalternative 4D would result in a comparable visual impact and a lower potential to affect cultural resources by ground disturbance compared to Alternative 4.	Subalternative 4E would result in the same visual impact as Alternative 4.	Subalternative 4F would result in the same visual impact but a lower potential to impact cultural resources by ground disturbance compared to Alternative 4.	Subalternative 4G would result in a comparable visual impact but a lower potential to affect cultural resources by ground disturbance compared to Alternative 4.	The potential effect to cultural resources by Subalternative 4H must be further evaluated in conjunction with the pairing of Subalternative 4H with Subalternatives 4G and 4K.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	Native infrastructure and the interconnectedness of the landscape; places of elevated spiritual importance; the Colorado River; intrusion on pristine landscapes.	No known concerns to Indian tribes.	Native infrastructure and the interconnectedness of the landscape.	No known concerns to Indian tribes.	Native infrastructure and the interconnectedness of the landscape; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the landscape; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the landscape; places of elevated spiritual importance; intrusion on pristine landscapes.	Native infrastructure and the interconnectedness of the landscape.	Native infrastructure and the interconnectedness of the landscape.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Would not cross Kofa NWR. Inconsistent with La Paz County Zoning Plan. Affects more NRCS-class farmland & solar facilities than Proposed Action. Five RMP amends for ROW and VRM for seven segments. In California, it would not be in compliance with the CDCA Plan so would require an amendment.	Amendments for 8 segments for VRM. Otherwise the same as Alternative 4.	Crosses more ASLD land. Six ROW amendments to RMP. Otherwise the same as Alternative 4.	Same as Alternative 4	Six RMP amendments for ROW and eight for VRM. Otherwise the same as for Alternative 4.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	Access impediment to one stock tank; impact reduced to negligible with MM GR-1.	Access to one additional stock tank vs Alternative 4; impact reduced to negligible with MM GR-1.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Long-term recreation quality similar to Proposed Action except where powerline would be new to the landscape (negligible to minor). Would run adjacent to the La Posa LTVA but would avoid Dome Rock Camping Area and Kofa NWR. Would run through Johnson Canyon. Otherwise similar to the Proposed Action.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4 except that the route would cross Cunningham Peak, thus avoiding Johnson Canyon.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Includes segments cb-2 and cb-04 with major long-term impacts to lands with wilderness characteristics Polygon 23 (would not meet lands with wilderness characteristics criteria).	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Would not include segments cb-02 and cb-04, and therefore would not have the impact to lands with wilderness characteristics Polygon 23.	Same as Alternative 4
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	Although there would be a difference in number of NSR, impacts would be the same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
Socioeconomics & Environmental Justice	Employment; Tax collection & revenue; Population or population displacement; Non-market values and ecosystem services; Revenue from recreation sector; Local economy; Reductions in property values; EJ Populations; disproportionate adverse impacts to EJ populations	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	Structures and lines in the Plomosa or Dome Rock Mountains would pose a minor to moderate long-term aviation hazard to AGFD aircraft; with MM-TT-02 this impact would be reduced to minor and long-term.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring	Alternative 4 would remain south of and not impact the visual resources along the I-10 until Segment i-04; impacts were previously described as follows: Segment in-01 – Subalternative 1C Segments ca-06, ca-07, ca-09, x-19 – Alternative 3. All other segments would not impact views along I-10.	Subalternative 4A would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 4B would place the Project in closer proximity to I-10 with impacts as described for Alternative 2.	Subalternative 4C would have the same impacts as described for Subalternative 3C.	Subalternative 4D would have the same impacts as described for Subalternative 3F and the Proposed Action.	Subalternative 4E would have no effect on the I-10 corridor.	Subalternative 4F would have no effect on the I-10 corridor.	Subalternative 4G would have no effect on the I-10 corridor.	Subalternative 4H would place the Project along I-10 in a narrow canyon area west of the Dome Rock Mountains that opens up to broad, panoramic views. It would impact visual resources similar to impacts in the eastern portion of the Project Area.

CHARACTERISTIC OR RESOURCE IMPACT		ALTERNATIVE 4	4A	4B	4C	4D	4E	4F	4G	4H
	an RMP Amendment.									
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as Proposed Action	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4

[1]Site density calculations include sites that have been previously determined or recommended as ineligible for the NRHP. In cases where the projected counts of NRHP-eligible or site of unknown NRHP eligibility are 0 and the site density is greater than 0, the site density calculation includes NRHP ineligible sites.

Table 2.2-41 Alternative 4 Subalternative 4J through 4P Impacts

CHARACTERISTIC OR RESOURCE IMPACT		4J	4K	4L	4M	4N	4P
Land ownership (miles)	BLM	-	-	-	-	-	-
	Reclamation	-	-	-	-	-	-
	Arizona State Trust	-	-	-	-	-	-
	Private	-	-	-	-	-	-
	Total Length	2.8	2.4	4.0	6.7	1.2	10.1
Ground disturbance	Short-term Acres	10.4	17.8	26.6	45.1	6.2	80.4
	Long-term Acres	17.4	9.2	14.5	23.6	4.5	28.4
BLM RMP conformance	VRM	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
	Corridors	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
	RMP Amendments & Conformance	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments included (YFO, CDCA Plan)	Amendments Included (YFO, CDCA Plan)
Other Plan conformance (Federal, county, municipal)	Plan Conformance	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan	Not consistent with La Paz County Zoning Plan

CHARACTERISTIC OR RESOURCE IMPACT		4J	4K	4L	4M	4N	4P
Air Quality and Climate Change	Criteria Air Pollutants – Construction	Same as Proposed Action					
	CO	Proportional to Total Length					
	NO_x	Proportional to Total Length					
	PM_{10}	Proportional to Total Length					
	$PM_{2.5}$	Proportional to Total Length					
	SO_2	Proportional to Total Length					
	VOC	Proportional to Total Length					
	CO_{2e}	Proportional to Total Length					
	GHGs – Construction CO_{2e}	Same as Proposed Action					
	Criteria Air Pollutants – O&M	Would not exceed NAAQS or CAAQS					
	GHGs – SF_6 – O&M	Same as Proposed Action					
Geology, Minerals, and Soil Resources	Geological Hazards Minerals/Mining (access to known resources or claims) Soils	Uses segments ca-07, ca-09, and x-19 which would have negligible to minor impact on sand transport and dunes during construction and operation	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Proposed Action
Paleontological Resources	Potential damage to known paleontological resources or formations with potential to contain paleontological resources	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Slightly higher potential than Alternative 4
Biological Resources (Vegetation Resources, Wildlife, including Special Status Species and Migratory Birds)	Loss of native habitat/communities; Noxious weeds; Special Status Species & animals); Increased risk of predation or electrocution re infrastructure; Displacement via construction; Displacement via human activity including recreation; Impacts to native habitat and designated management areas; and Migratory birds.	These subalternatives largely follow I-10, or cross agricultural areas, and would have fewer impacts than Alternative 4. Subalternatives 4K and 4L cross the Colorado River in areas not adjacent to the existing DPV1 line and may have result in a greater collision hazard to birds.					Potential impacts to biological resources are substantially less for Subalternative 4P than Alternative 4 by avoiding major dune habitat.

CHARACTERISTIC OR RESOURCE IMPACT		4J	4K	4L	4M	4N	4P
Cultural Resources	Damage or loss of a cultural site or potential site under Federal or state registers; degradation of the setting for a cultural site where setting is significant to its listing eligibility; increased access leading to potential vandalism; disturbance of human remains.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 36.3%). Known site density: 4.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 3. The potential effect to cultural resources by Subalternative 4J must be further evaluated in conjunction with the pairing of Subalternative 4J with Subalternative 4H.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 28.2%). Known site density: 0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. The potential effect to cultural resources by Subalternative 4K must be further evaluated in conjunction with the pairing of Subalternative 4K with Subalternative 4H and 4N.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 1 (cultural resources survey coverage: 7.5%). Known site density: 13.5 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 13. The potential effect to cultural resources by Subalternative 4L must be further evaluated in conjunction with the pairing of Subalternative 4L with Subalternative 4M.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 2.0%). Known site density: 272.7 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 442. Subalternative 4M would result in a comparable visual impact and a comparable potential to disturb cultural resources compared to Alternative 4.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 0 (cultural resources survey coverage: 60.8%). Known site density:0.0 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 0. The potential effect to cultural resources by Subalternative 4N must be further evaluated in conjunction with the pairing of Subalternative 4N with Subalternatives 4H, 4K, and 4M.	Known NRHP-eligible sites or sites requiring NRHP evaluation: 3 (cultural resources survey coverage: 60.4%). Known site density: 31.1 sites per 100 acres. Projected NRHP-eligible sites or sites requiring NRHP evaluation: 36. Subalternative 4P would result in a higher visual impact, but a lower potential to affect cultural resources by ground disturbance compared to Alternative 4.
Issues of Concern to Indian Tribes	Existing and new access, native infrastructure and the interconnection of the cultural and natural environment, places of elevated spiritual important to tribes, the Colorado River, the treatment of human remains, and the disturbance of previously pristine landscapes.	No known concerns to Indian tribes.	Places of elevated spiritual important to tribes, the Colorado River.	Native infrastructure and the interconnection of the cultural and natural environment; the Colorado River.	No known concerns to Indian tribes.	No known concerns to Indian tribes.	Native infrastructure and the interconnection of the cultural and natural environment; places of elevated spiritual importance.
Land Use	Land use authorizations and ROWs; Residential; Agricultural; Other (i.e., nuisance impacts)	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Would cross more NRCS-classified farmland than Alternative 4. Otherwise the same as for Alternative 4.	Same as Alternative 4	Same as Alternative 4
Grazing and Rangeland	Access to range or improvements; Loss of range relative to AUMs; Fragmentation of allotments; Degradation of range quality	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Recreation	Physical, access, use, or functional changes to established, designated, or planned recreation areas, resources, experiences, or activities; conflicts with Federal, state, or local policies; affect OHV designations, access, or routes; impacts to hunting access.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4

CHARACTERISTIC OR RESOURCE IMPACT		4J	4K	4L	4M	4N	4P
Special Designations	Conflict with goals, objectives & resources an area is designated to protect	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Noise	Exceedance of regulations or guideline; exposure of receptors to excessive noise levels; generate noise levels that pose a health risk.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Hazards and Hazardous Materials	Generation, use, handling, or disturbance of hazardous waste that: violates Federal, state, or local laws or regulations; poses a health or safety risk to public or environment; releases hazardous emissions; creates a safety hazard to public or private airstrips; or exposes workers, schools, or the public to hazardous materials.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Public Health and Safety	Risks to public health, safety, utilities; fire or electrocution hazard; EMF emissions.	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Socioeconomics & Environmental Justice	Employment; Tax collection & revenue; Population or population displacement; Non-market values and ecosystem services; Revenue from recreation sector; Local economy; Reductions in property values; EJ Populations; disproportionate adverse impacts to EJ populations	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Traffic and Transportation	Increased roadway traffic; damage to roadways, access, or road systems; risk to aviation	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4
Visual Resources	Conflicts with visual standards, ordinances, or policies established; major and unmitigated visual changes that degrade or disrupt views of scenic landscapes from highly sensitive viewing locations; VRM class objectives that would not be met requiring an RMP Amendment.	Subalternative 4J would have the same visual impacts to along I-10 as described for Subalternative 3J.	Subalternative 4K would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 4L would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 4M would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 4N would have no effect on visual resource impacts as viewed within the I-10 corridor.	Subalternative 4P would have no effect on visual resource impacts as viewed within the I-10 corridor.
Water Resources	Impacts to surface water or groundwater quantity or availability; impediments to floodplain function from channel alterations; impacts to water rights or water quality; violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4	Same as Alternative 4

2.4 MONITORING AND MITIGATION

2.4.1 Biological Resources

MM-BIO-01: A Compensation Plan would be developed to meet BLM requirements from the DRECP and other mitigation agreements. The Compensation Plan would include calculations of compensation ratios and mitigation acreages for loss of habitat for special status and protected native plant species, special status plant communities, Mojave desert tortoise, Sonoran desert tortoise, and any other biological resource requiring additional mitigation. As consistent with BLM policy and resource management plans, compensatory mitigation could include payment of an in-lieu fee; acquiring mitigation land or conservation easements; restoration or habitat enhancement activities on public lands; or a combination of the three (LUPA-BIO-COMP-1, LUPA-BIO-COMP-2, DFA-VPL-BIO-COMP-1, and LUPA-COMP-1; Appendix 2C).

2.4.2 Cultural Resources and Concerns of Indian Tribes

Mitigation measures for cultural resources are outlined in the revised draft PA for the Project (Appendix 2D). Measures contained in the PA would be implemented prior to and during construction and post-construction during operations and maintenance activities. Decommissioning would require separate Section 106 compliance, as stipulated in the PA.

2.4.3 Grazing

MM-GR-01: If construction would preclude or hinder livestock access to these stock ponds or other livestock water sources, DCRT would provide a suitable alternate livestock water source during construction.

2.4.4 Recreation

MM-REC-01: To mitigate effects related to the temporary construction closure of the proposed Arizona Peace Trail and other OHV routes through Johnson Canyon, MM REC-01 would require that construction of the Project occur outside of peak OHV season. Construction in Johnson Canyon would occur between the months of July and September.

MM-REC-02: In areas of high OHV use, such as in Copper Bottom Zone and the Ehrenberg Sandbowl OHV Area, proposed Project structures with guy wires would be replaced with self-supporting (no guy wires) lattice structures or monopoles. Additionally, in all other areas where guyed V structures are used, the anchor positions would be placed no less than 50 feet from any trail or road, and the guy wire would be at least 15 feet above (at its lowest point) any road or trail crossed by a guy wire. This would reduce the safety risk to OHV users.

MM-REC-03: New access roads will be gated where appropriate, and signage including road status will be posted at all new access road junctions.

2.4.5 Hazardous Materials and Hazardous and Solid Waste

MM-HAZ-01: Resource studies establishing baseline conditions for the Project included a screening-level assessment of hazardous materials sites within a 1-mile wide study area encompassing the Proposed Action and all Action Alternative Segments. The screening consisted of searching over 50 government and private databases, including lists specified in California's Government Code Section 65962.5. These databases included the EPA Hazardous Materials Incident Report System, the California "Cortese" Hazardous Waste and Substances Sites List, and the federal database listings of Unexploded Ordnance (UXO) Sites, Formerly Used Defense Sites (FUDS), and Department of Defense sites. No mapped "Superfund" sites or sites on the National Priorities List were documented; however, multiple industrial, commercial, mining, and other potentially contaminated sites are located within the hazardous materials study area, including the FUD Laguna Maneuver Area.

Results of this screening would be used to guide the continued development of Project design, including structure placement locations within a corridor along the Agency Preferred Alternative route, and where other Project-related ground disturbing activities occur outside of the corridor which could include lay-down areas, pulling stations, and access sites. Upon identification of the Agency Preferred Alternative in the final EIS for the Project, DCRT would implement the following mitigation sequence to avoid or minimize the potential for hazardous materials-related impacts to construction workers, the public, and the environment:

1. A 600-foot corridor (300 feet on either side of the centerline of the potential alignment) along the Agency Preferred Alternative route would be evaluated to identify locations where hazardous materials sites (for example, contaminated soils or buried waste) are potentially present. Areas outside of the corridor, including access roads, where Project construction-related ground disturbance could occur would also be evaluated, including a 100-foot buffer. The evaluation would be conducted by individuals trained (in accordance with ASTM E1527-13) in Phase I and II Environmental Site Assessments as presented in ASTM E1527-13. This evaluation would consist of an in-depth review of the information obtained during the initial screening described above, and may include contacting agency staff, review of aerial photographs, and windshield surveys as appropriate.
2. Sites that are identified within the 600-foot Agency Preferred Alternative route study corridor and ancillary sites where Project construction-related ground disturbance could occur through the activities described above in # 1, where a release has occurred, would be subject to a Phase I Environmental Site Assessment in accordance with ASTM E1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.
3. Final Project design and construction plans would take into consideration the results of the Phase I Environmental Site Assessment, with the intent to avoid identified hazardous materials sites through the micrositing process. If a confirmed contamination site can be avoided, it would be and no further action would be indicated.

4. If a hazardous materials site identified during the Phase I Environmental Site Assessment cannot be avoided through micrositing of structures, and the site presents the potential for impacts to the public, Project workers, or the environment, a Phase II Environmental Site Assessment (in accordance with ASTM E1903) would be conducted as appropriate.
5. Depending on the results of the Phase II Environmental Site Assessment, measures may need to be implemented in order to proceed with Project construction. Given the types of hazardous materials sites most likely to be present based on the initial screening, mitigation measures could include, but may not necessarily be limited to, the following:
    - Perform all excavation at the subject site under the direction of a qualified environmental professional (who possesses professional certification for hazardous material inspections) who would field-screen soils for contamination and debris. Soils or other media showing indications of contamination based on field screening instruments, analytical sample results, or visual or olfactory observations would be disposed of and treated in a manner to be approved by the BLM and/or the appropriate state agency.
    - Collect samples for chemical analysis as appropriate to characterize the material for disposal.
    - Transport and dispose of any excavated contaminated soils or debris at an approved facility or treat on site.
    - Conduct all site work under a Health and Safety Plan (to be included in the final POD) that meets OSHA requirements, including requirements for working training and personal protective equipment.

2.4.6 Traffic and Transportation

There would not be any mitigation measures necessary related to construction activities. Mitigation related to operations would include:

MM-TT-01: Structures and lines within Segment ca-05 would constitute a moderate to major, long-term effect associated with a collision hazard at the Cyr Aviation Airport. The marking of structures and lines within 0.5 mile of such facilities with spherical markers and lighting would reduce this effect to minor to moderate.

MM-TT-02: Structures and lines within Segments in-01 and i-04 where they pass through the Plomosa Mountains and Segments i-06, cb-01, cb-02, cb-03, and cb-04 in the Dome Rock Mountains would constitute a moderate to major, long-term effect on the safety of AGFD aircraft conducting aerial wildlife surveys. The marking of structures and lines in these locations would reduce this effect to minor.

2.4.7 Visual Resources

The following measures would be applied in locations identified in the visual resources impact analysis in Chapter 4 or Appendix 4.

MM-VIS-01: Minimize disturbance at structure bases.

MM-VIS-02: No access routes would be constructed to structure sites, and thus structure sites be accessed by foot or helicopter.

MM-VIS-03: Apply surface treatments (such as Permeon, or an approved equal) to newly exposed rock and gravel to blend with surrounding rock face and minimize visual impact of attention-attracting disturbance.

MM-VIS-04: Limit height of structures to that absolutely necessary for safety and operation in order to minimize skylining and reduce the need for beacons to protect dark sky resources and maintain astronomical viewing opportunities.

MM-VIS-05: Shorten span lengths and design the route to follow canyon routes to minimize elements (conductors in particular) that would be overhead of viewers and skylined.

MM-VIS-06: Use structure type to match existing structures and reduce form contrast.

Appendix 2A Applicant Proposed Measures and BLM Required Best Management Practices

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2A.1 AIR QUALITY AND CLIMATE CHANGE

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM (Also addresses BLM Regional Mitigation Strategy for AZ SEZs MMs)	AQ-01: Fugitive Dust	The following control measures would be implemented, as applicable, to reduce PM10 and PM2.5 emissions during construction, in conjunction with an Erosion, Dust Control, and Air Quality Plan and Fugitive Dust Control Plan for the Project. *Basic control measures* The following measures would be implemented as applicable at all construction sites: • Water active construction areas sufficiently to minimize fugitive dust. • Dust control would include the use of one or more water trucks that would water access roads daily as needed to control dust throughout the construction period • Cover trucks hauling soil, sand, and other loose materials and require all trucks to maintain at least 6 inches of freeboard. • Pave, apply water, or apply nontoxic soil stabilizers as applicable on for all unpaved access roads, parking areas, and staging areas at construction sites to minimize fugitive dust. *Enhanced control measures* In addition to the "basic" control measures listed above, the following control measures may be implemented at all construction sites greater than 4 acres:	X	X		X	LUPA-AIR-01, 02, 03, and 05; LUPA-BIO-13		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		• Water, hydroseed, or apply nontoxic soil stabilizers to inactive construction areas to minimize fugitive dust. • Enclose, cover, water, or apply nontoxic soil binders to exposed stockpiles. • Limit traffic speeds on unpaved roads. • Install sandbags or other erosion-control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible, consistent with seasonal survival considerations. *Optional control measures* Depending on the extent of dust generation, implementation of the following optional control measures may occur at larger construction sites, near sensitive receptors (residences or other occupied buildings, parks, or trails within 1,000 feet of earthmoving operations that are substantial; for example, more than excavation for tower foundations), or in situations which for any other reason may warrant additional emissions reductions: • Install wheel washers for all existing trucks, or wash off the tires or tracks of all trucks and equipment leaving the site. • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour (mph). Limit the area subject to excavation, grading, and other construction activity at any one time.							

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	AQ-01 Dust Pallatives	Dust palliatives would be applied, in lieu of water, to inactive construction areas (disturbed lands or soil stockpiles that are unused for 14 consecutive days). Dust palliatives would be chosen by the Dust Control Site Coordinator and or construction contractor. Dust palliatives would be environmentally safe; comply with Federal, state, and local regulations; and would not produce a noxious odor or contaminate surface water or groundwater and, therefore, would not pose runoff concerns during rain events. Application rates for dust palliatives would follow the manufacturer's recommendations. Material Safety Data Sheets (MSDS/SDS) for any palliatives would be available on site and provided to the BLM 14 days prior to use.	X	X		X	LUPA-BIO-6, LUPA-BIO-13		
APM	AQ-02: Exhaust Emissions	The following measures would be implemented during construction to further minimize greenhouse gas emissions (carbon dioxide, methane, and nitrous oxide) per California AB 32 and criteria air pollutants from vehicle and machinery and in conjunction with the Construction Emissions Mitigation Plan for the Project: • Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time depends on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles,		X			LUPA-AIR-3	X	

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		such as large diesel-powered vehicles, have extended warm-up times that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Project would apply a "common sense" approach to vehicle use, such that idling is reduced as far as possible below the maximum of 5 consecutive minutes required under Title 13 of California Code of Regulations (CCR) Section 2485 (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine would be shut off. • Encourage use of natural gas- or electric-powered vehicles for light-duty trucks where feasible and available.							
APM	AQ-03: Minimize Potential Naturally Occurring Asbestos Emissions	The following measures would be implemented prior to and during construction to minimize the potential for naturally occurring asbestos emissions, in conjunction with an Asbestos Dust Mitigation Plan if asbestos, serpentinite, or ultramafic rock is determined to be present: • Prior to construction, representative samples in the general construction area would be analyzed for the presence of asbestos, serpentinite, or ultramafic rock. Analyses could be conducted as part of the geotechnical investigation.	X	X					

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		• In California, if asbestos, serpentinite, or ultramafic rock is determined to be present, all applicable provisions of the Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations (17 CCR 93105) would be implemented, including the following: For disturbed areas of 1 acre or less: o Construction vehicle speed at the work site would be limited to 15 mph or less. o Prior to any ground disturbance, sufficient water would be applied to the area to be disturbed to prevent visible emissions from crossing the property line if asbestos, serpentinite, or ultramafic rock is determined to be present. o Areas to be graded or excavated would be kept adequately wet to prevent visible emissions from crossing the property line. o Storage piles would be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile. o Equipment would be washed down before moving from the property onto a paved public road.							

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		o Visible track-out on the paved public road would be cleaned using wet sweeping or a high-efficiency particulate air-filter-equipped vacuum device within 24 hours. For disturbed areas of greater than 1 acre: o Prepare an Asbestos Dust Mitigation Plan and obtain approval prior to construction. Implement and maintain the provisions of the approved Asbestos Dust Mitigation Plan from the beginning of construction through the duration of the construction activity.							
APM	AQ-04: Minimize Potential Emissions of Naturally Occurring *Coccidioides immitis* Fungal Spores	In addition to the AQ-1 measures to control general fugitive dust emissions, the following measures would be implemented prior to and during construction to create awareness of the risks and inhalation prevention procedures with respect to *Coccidioides immitis* fungal spores, which are naturally present in soils in the desert southwest, and inhalation of which can cause Valley Fever: • Prior to construction, and for each phase of construction, implement an Environmental Awareness Program for workers to ensure they are informed of the risks of contracting Valley Fever and the protective measures needed to minimize personal exposure to fugitive dust, as well as to minimize possible dust exposure of nearby residents and the general public.	X	X					X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		• Inform workers of the possible symptoms of Valley Fever and encourage them to seek medical treatment if these symptoms manifest.							
BMP	AQ-05: Air Quality Regulation and Standard Conformance	All activities would meet the requirements of the Clean Air Act (Sections 110, 118, 160, and 176[c]) and the applicable local Air Quality Management jurisdiction(s). Fugitive dust cannot exceed local standards and requirements.	X	X	X	X	LUPA-AIR-01, LUPA-AIR-02	X	

*See Appendix 2C

2A.2 GEOLOGY, MINERALS, AND SOIL RESOURCES

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	GEO-01: Erosion and Sedimentation	DCRT would implement a SWPPP for the Project. A monitoring program would be established to ensure that the prescribed BMPs are followed throughout transmission line construction. Examples of these BMPs include the following: • Preparation, training, and maintenance for clear work-site practices, tracking controls, and materials management to minimize the direct work impacts on soil and erosion. • Installation of temporary silt fences and other containment features (including gravel bags and fiber rolls) surrounding work areas to prevent the loss of soil during rain events and other disturbances. • Utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains. • Implementation of soil erosion controls, including preservation of existing vegetation, temporary soil stabilization through hydroseeding, mulching, and other techniques. • Stockpiling soils at least 100 feet from drainages to the extent possible. If soil stockpiles are within 100 feet from a drainage proper measures would be		X	X		LUPA-SW-8		X[1]

[1] APS would prepare and submit a separate SWPPP for the 12kV distribution line.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		implemented such as soil tackifiers, straw wattles around the pile, and/or covering the stockpile.							
BMP	SOIL-01	During reclamation and revegetation efforts, a BLM soil scientist and/or botanist review plans and approve, as appropriate, to determine type and location of any scarification.		X				X	
BMP	SOIL-02	During reclamation and revegetation efforts, the BLM would review plans and approve, as appropriate, to determine where soil compaction would be appropriate, to avoid potential adverse conditions created by compaction.		X				X	
BMP	SOIL-03	Covers for topsoil stockpiles would be of materials resistant to damage and/or degradation from exposure to ultraviolet light and other elements and would be replaced (as needed) if they deteriorate, become worn, or damaged.		X	X	X			
BMP	SOIL-04	The disruption of desert pavement and desert varnish shall be minimized to the extent feasible. Grading for new access roads or work areas in areas covered by desert pavement and/or desert varnish shall be avoided if possible.		X		X	LUPA-SW-9		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	SOIL-05	Desert pavement and desert varnish in activity areas in California shall be assessed by qualified geological or biological monitors prior to construction. If disturbance from an activity is likely to exceed 10% of the desert pavement and/or desert varnish identified within the activity boundary, the BLM would determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement and/or desert varnish disturbance.	X	X		X	LUPA-SW-9	X	
BMP	SOIL-06	Side-casting of soil during road construction shall be avoided.		X			LUPA-SW-11	X	
BMP	SOIL-07	To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.	X	X	X	X	LUPA-SW-10	X	

*See Appendix 2C

2A.3 PALEONTOLOGICAL RESOURCES

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	PALEO-01: Paleontological Resources Treatment Plan	DCRT would prepare a Paleontological Resources Treatment Plan that would describe procedures to be followed in the event of the discovery of paleontological resources during implementation of the Project. Upon approval of the draft plan, DCRT would follow the procedures set forth in that Plan during implementation of the Project.	X	X			LUPA-PALEO-3		X
BMP	PALEO-02: Paleontological Resources Monitor	A qualified paleontologist or geologist qualified in paleontological evaluations would provide monitoring for paleontological resources during construction in areas of high or unknown fossil potential.	X	X			LUPA-PALEO-4		X

*See Appendix 2C

2A.4 BIOLOGICAL RESOURCES (VEGETATION, INCLUDING SPECIAL STATUS SPECIES, AND WILDLIFE, INCLUDING SPECIAL STATUS SPECIES AND MIGRATORY BIRDS

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-01: Worker Environmental Awareness Program	Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the Federal and state Endangered Species Acts and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special-status species as well as a discussion of avoidance and minimization measures.	X	X	X	X	LUPA-BIO-5		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-01: Worker Environmental Awareness Program	The worker education program would provide interpretation for non-English speaking workers.	X	X	X	X	LUPA BIO-5		X
APM	BIO-02: Biological Monitoring and Preconstruction Survey	A qualified biological monitor would be present on the Project site during all work activities within habitat of special-status animal species. The qualified biologist would conduct a preconstruction survey of those areas immediately before work activities begin and would locate and fence off any present individuals of special status plant species.	X	X		X	LUPA-BIO-2, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-6, LUPA-BIO-IFS-7, LUPA-BIO-IFS-12, DFA-BIO-IFS-1, DFA-BIO-IFS-2, LUPA-BIO-RIPWET-3		X
BMP	BIO-02: Biological Monitoring and Preconstruction Survey	Multiple biological monitors would be provided so any work site within habitat of special status species is monitored concurrently if needed.	X	X		X	LUPA-BIO-2, LUPA-BIO-DUNE-5		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-03: Approved Work Areas	To the extent practicable, stockpiling of material would be allowed only within the established work area. Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed areas within identified work areas or access roads.	X	X		X	LUPA-BIO-13		X
BMP	BIO-03: Approved Work Areas	The BLM would approve areas to be used for stockpiling, vehicle parking, or other construction support activity that would occur outside established work areas.	X	X			LUPA-BIO-13		X
APM	BIO-04: Environmental-ly Sensitive Areas and Fencing	Environmentally sensitive areas, such as the riparian areas, xeroriparian washes, and other habitat of special status species, would be identified in the field. Barrier fences or stakes would be installed at the edge of the easement or around the sensitive area to minimize the possibility of inadvertently encroaching into sensitive habitat.	X	X			LUPA-BIO-3, LUPA-BIO-13		X
APM	BIO-05: Additional Prohibitions	Trash dumping, firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment.	X	X	X	X	LUPA-BIO-6, LUPA-BIO-14		X
APM	BIO-06: Trash Handling	All food scraps, wrappers, food containers, cans, bottles, and other trash from the work area would be disposed of in closed trash containers.	X	X	X	X	LUPA-BIO-6, LUPA-BIO-14		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-07: Monofilament Plastic	No monofilament plastic would be used for erosion control (for example, matting, fiber roll, wattles, silt fencing backing). Appropriate materials include burlap, coconut fiber, or other materials as identified in the general and site-specific SWPPP.		X			LUPA-BIO-9		X
APM	BIO-08: Refueling	Vehicular and equipment refueling should not occur within 100 feet of a wetland or drainage unless secondary containment is constructed, for example, a berm and lined refueling area. Proper spill prevention and cleanup equipment would be maintained in all refueling areas in accordance with the Spill Prevention, Control, and Countermeasures Plan (SPCC) for the Project.	X	X			LUPA-BIO-9		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-09: Escape Ramps	All excavated steep-walled holes or trenches more than 1-foot-deep would be covered at the end of each working day with plywood or similar material or would be provided with one or more escape ramps constructed of earth fill or wooden planks. Each trench or hole would be inspected for wildlife at the beginning of each work day and before such holes or trenches are filled. Wildlife found trapped in trenches or holes would be relocated to suitable habitat outside the work area. If possible, pipes and culverts greater than 3 inches in diameter would be stored on dunnage to prevent wildlife from taking refuge in them, to the extent feasible.	X	X			LUPA-BIO-14		
APM	BIO-10: Erosion and Dust Control	The BMPs included in the SWPPP would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as described previously (AQ-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access).		X			LUPA-BIO-9		X[2]

[2] APS would prepare, submit, and adhere to the BMPs in a separate SWPPP for the 12kV distribution line.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-11: Vegetation Management Plan	The Vegetation Management Plan (Appendix 2B) would be approved by the BLM and implemented. That Plan describes the surveys, permitting, fee payments, and plant protection to be conducted in areas where Project design would not eliminate the need for vegetation control for the Project to be in compliance with NERC requirements. Vegetation would be trimmed or otherwise controlled for safe operation of the transmission line and would be designed to minimize impacts on special status species to the extent practicable. At a minimum, vegetation treatments shall incorporate the measures identified in the June 2016 Memorandum of Understanding regarding vegetation management along ROW for electrical transmission and distribution facilities (USDA 2016). The Plan also would describe how vegetation would be salvaged, as needed, in order to comply with the applicable Arizona Native Plant Law and California regulations.		X	X		LUPA-BIO-3, LUPA-BIO-7, LUPA-BIO-8, LUPA-BIO-13, LUPA-BIO-RIPWET-1, LUPA-BIO-SVF-1, DFA-VPL-BIO-FIRE-1		X[3]

[3] APS is currently compiling vegetation maintenance activities into a Vegetation Management Plan specific to the 12kV distribution line per BLM IM-2018-070.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-11: Vegetation Management Plan	In addition to the description of the Vegetation Management Plan in the corresponding APM BIO-11, the plan would also: • Meet BLM guidelines for mapping and surveying of cacti, yuccas, and succulents. • Include a wire zone/border zone/effective border zone approach to vegetation maintenance as described in Ballard, et al. 2007. • Identify tall vegetation species by geographic reach and growth rates, from relevant scientific literature (such as Drezner 2003), to be used to determine maximum allowable vegetation heights in the context of wire zone/border zone/effective border zone concepts, to accommodate identified growth periods (e.g., ten years) based on the specific vegetation community. Species examples include, but are not limited to, saguaro cactus, ironwood, palo verde, cottonwood, Gooding willow.	X	X	X		LUPA-BIO-1 LUPA-BIO-7, LUPA-BIO-8, LUPA-BIO-13 LUPA-BIO-RIPWET-1, LUPA-BIO-SVF-1, DFA-VPL-BIO-FIRE-1		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-12: Noxious and Invasive Species Control	A Noxious Weed Control Plan (Appendix 2B) would be developed, approved by the BLM, and implemented prior to initiation of ground disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area, describe measures to conduct preconstruction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and practices for the application of herbicides; and other requirements in applicable BLM Weed Management Plans.	X	X	X	X	LUPA-BIO-6, LUPA-BIO-10, LUPA-BIO-11		X[4]

[4] APS would comply with their existing noxious weed protocol in its existing vegetation management plan on file with the BLM.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-13: Riparian Habitat Avoidance	Riparian areas and xeroriparian drainages that occur within the ROW would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. Existing topography would be restored to pre-Project conditions to the extent possible.	X	X			LUPA-BIO-1, LUPA-BIO-13		
APM	BIO-14: Minimizing Vegetation Clearing	In areas with suitable topography, minimal or no vegetation clearing and soil disturbance would be conducted for site access and construction (i.e. overland driving/overland access). Overland driving/overland access would be used in areas that support the necessary construction equipment. Upgrading of existing access roads and construction of new access roads would be implemented as necessary for the safe construction activities.		X			LUPA-BIO-14		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-15: Reclamation and Restoration	A Habitat Restoration and Monitoring Plan would be developed, approved by BLM, and implemented for construction and operation of the Project. Revegetate all sites disturbed during construction that would not be required for operation of the transmission line, and restore disturbed areas to the extent practicable, given the arid desert environment. The Plan would describe in detail methods for surveying and characterizing vegetation in disturbed areas before construction; topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. It would be designed to reduce impacts on special status species to the extent practicable.	X	X	X	X	LUPA-BIO-7, LUPA-BIO-8, LUPA-BIO-10		
BMP	BIO-15: Reclamation and Restoration	As a part of the Habitat Restoration and Monitoring Plan, the soil horizons would be stored separately for the areas where the success of restoration could be crucial for rare plant species.	X	X	X	X	LUPA-BIO-7, LUPA-BIO-8	X	

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO 16: Treatment of Saguaro Cactus	Measures would be implemented to minimize the number of saguaro cacti that must be relocated for the safe construction and operation of the transmission line and associated SCS distribution line. In accordance with the Vegetation Management Plan (Appendix 2B), a survey of saguaros within the ROWs would be conducted before construction and where possible, the transmission line and distribution line would be designed to minimize the number of saguaros affected by adjusting tower or pole locations and conductor height. The Plan would address plant salvaging, storing, and replanting requirements and methods, only those saguaros that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if they cannot be avoided through Project design. When possible, saguaro that must be removed would be relocated as directed by the BLM and state agency protocols. Monitoring and management of saguaros during operations would occur as described in the Vegetation Management Plan.		X	X		LUPA-BIO-SVF-1		X[5]
APM	BIO-17: Limit Off-road Vehicle Travel	Vehicular travel would be limited to established roads to the maximum extent practicable.	X	X	X	X	LUPA-BIO-13		X

[5] Management of saguaro cactus for the alternative 12kV distribution line would be completed per APS' Arizona BLM lands Vegetation Management Plan.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-18: Copper Bottom Pass (Arizona Only)	Control of construction activities and use of construction-related vehicles in the Copper Bottom Pass area would be maintained to ensure that only planned construction traffic is allowed in the area and that minimal trips are planned to minimize disturbance to bighorn sheep. This APM does not apply to non-construction related public use of the Copper Bottom Pass area.	X	X	X	X			
BMP	BIO-19: Colorado River	In the vicinity of the Colorado River, existing structure spacing and conductor heights would be matched to the greatest extent practical to reduce the potential for bird collisions with the power line. The transmission line would span the Colorado River and the minimum number of structures possible would be located within the undeveloped floodplain. The term, "vicinity of the Colorado River" is defined to mean the river crossing, floodplain, and associated agricultural lands. In these areas, conductor bundles would be in a horizontal, parallel configuration, and match existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. No guyed structures would be used at these locations.		X			LUPA-SW-16, LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-SW-13, LUPA-SW-16, LUPA-TRANS-BIO-1		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	BIO-20: Migratory Bird Protection During Construction	If construction is scheduled during the nesting bird season (generally February 1 through August 31), the work area would be surveyed for birds protected under the Migratory Bird Treaty Act and applicable Arizona and California codes. Active nests identified during preconstruction surveys would require protective buffers or visual barriers to ensure compliance with those regulations. If the qualified biologist determines that construction activities would cause distress to nearby nesting birds, larger buffers or construction delays might be necessary to allow the birds to successfully fledge from the nest.	X	X		X	LUPA-BIO-4, LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-BIO-RIPWET-3, LUPA-BIO-IFS-11, DFA-BIO-IFS-1		X
APM	BIO-21: Reduction of Avian Collision	Current guidelines and methodologies appropriate to infrastructure size (APLIC 2006, 2012) would be used in the design of the proposed transmission and SCS distribution facilities to minimize the potential for raptors and other birds to collide with the lines during operations and be electrocuted. For example, aerial marker balls or other visibility markers would be placed at and near the crossing of the Colorado River to increase the visibility of the transmission line to birds using that movement corridor. Further, placement of lines significantly above existing		X	X		LUPA-BIO-16, LUPA-BIO-17, LUPA-BIO-COMP-2, LUPA-TRANS-BIO-2, LUPA TRANS-BIO-3		X[6]

[6] Practices to reduce avian collision associated with the alternative 12kV distribution line would be implemented under APS' corporate Avian Protection Plan.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		transmission lines, topographic features, or tree lines would be avoided. These measures would be implemented, where practicable, in conjunction with an Avian Protection Plan for the Project (APP).							
BMP	BIO-21: Reduction of Avian Collision and Electrocution	Aerial marker balls or other visibility markers would be placed on overhead ground wires (not conductors) at crossing of the Colorado River and floodplain to increase visibility to birds using that movement corridor and marking any other static wires to improve visibility and reduce collisions. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. The APP would include requirements for monitoring the effectiveness of anti-electrocution design.		X	X		LUPA-BIO-16, LUPA-BIO-17, LUPA-BIO-COMP-2, LUPA-TRANS-1, LUPA TRANS-BIO-3		
APM	BIO-22: Sonoran Desert Tortoise Protection (Arizona)	A qualified biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in Arizona, in order to survey areas before they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way, in accordance with the 'Candidate Conservation Agreements for Sonoran Desert Tortoise in Arizona', dated May 27, 2016. Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be		X					X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species.							
APM	BIO-23: Mojave Desert Tortoise Protection (California)	A qualified-biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in California, in order to survey areas before they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way in accordance with USFWS protocols. Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species. Other measures, as required by the USFWS in any applicable Biological Opinion, would also be implemented.	X	X			LUPA-BIO-1, LUPA-BIO-13, LUPA-BIO-IFS-5, LUPA-BIO-IFS-6 LUPA-BIO-IFS-7, LUPA-BIO-IFS-8, DFA-BIO-IFS-1	X	

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-23: Mojave Desert Tortoise Protection (California)	A designated biologist would inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection.	X	X			LUPA-BIO-1, LUPA-BIO-IFS-5, DFA-BIO-IFS-1	X	
BMP	BIO-24: Sensitive Plant Surveys	On BLM lands and on other lands where access is secured by the owner, a survey would be conducted during the appropriate time of year of the selected route to identify special-status plant species and imperiled or sensitive vegetation alliances. Where possible, and as required by the BLM, special-status species and vegetation alliances would be avoided during construction. This survey would be restricted to non-cultivated land.	X	X			LUPA-BIO-1, LUPA-BIO-PLANT-1, LUPA-BIO-SVF-1		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-25: Sensitive Animal Surveys	A survey would be conducted of the selected route prior to construction of all work areas to identify special-status animal species, including Mojave desert tortoises, burrowing owls, and Mojave fringe-toed lizards. Where possible, and as required by the BLM, special-status species and vegetation alliances would be avoided during construction.	X	X			LUPA-BIO-1, LUPA-BIO-RIPWET-3, LUPA-BIO-DUNE-4, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-6, LUPA-BIO-IFS-12		X
APM	BIO-26: Arizona Protected Plant Inventory	An inventory of plants protected under the Arizona Native Plant Law would be conducted on state trust lands as required by the Arizona State Land Department. Similar surveys would be conducted on lands managed by BLM, as directed by that agency.	X	X					X[7]
APM	BIO-27: Bighorn Sheep Lambing Areas	Construction activities would be limited from January 1 to March 31 in active bighorn sheep lambing areas identified by BLM and AGFD.	X	X	X	X			

[7] Construction of the 12kV distribution line would comply with the Arizona Native Plant Law.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-28: Raven Management Plan	The Raven Management Plan would be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens. As consistent with BLM policy and resource management plans, compensatory mitigation would be provided that contributes to LUPA-wide raven management associated with lands in the DRECP.		X	X		LUPA-BIO-6, LUPA-TRANS-BIO-1	X	
BMP	BIO-29: Bird and Bat Conservation Strategy	The Bird and Bat Conservation Strategy would provide guidance on conservation measures applicable to bird and bat species present in the Project Area, including a nesting bird management plan and a nest management plan.	X	X	X	X	LUPA-BIO-4, LUPA-BIO-16, LUPA-BIO-17, LUPA- BIO-RIPWET-1, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-11, DFA-BIO-IFS-2		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-30: Burrowing Owl Nesting Management Plan	Plan would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14.	X	X		X	LUPA-BIO-1, LUPA-BIO-16, LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, LUPA-BIO-IFS-14, DFA-BIO-IFS-1, DFA-BIO-IFS-2	X	
BMP	BIO-31: Treatment of Harwood's eriastrum	1. Pre-construction surveys would be required for non-agricultural areas in California. 2. Avoid Harwood's eriastrum individuals through micro-siting facilities to the maximum extent practical. 3. Within suitable habitat for Harwood's eriastrum, use overland travel (drive and crush) in lieu of road construction to pad sites to the maximum extent practical. 4. On non-agricultural Public Lands in California, an authorized botanist would be on site for all construction activities involving surface disturbance or overland travel. 5. Within suitable habitat for Harwood's eriastrum, keep equipment to the minimum necessary to accomplish the necessary work. 6. On public lands in California, avoid establishing features that would interfere with the movement of sand to the maximum extent practical.	X	X	X	X	LUPA-BIO-1, LUPA-BIO-3, LUPA-BIO-4, LUPA-BIO-6, LUPA-BIO-13, LUPA-BIO-DUNE-2, LUPA-BIO-PLANT-2, LUPA-BIO-PLANT-3	X	

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		7. Laydown and temporary use sites would not be located within suitable habitat for Harwood's eriastrum. 8. On public lands in California, use existing roads or routes to the maximum extent practical. 9. Develop and implement an Invasive Species Management Plan (specific to the rare plant habitat) that California State Director would approve prior to a notice to proceed for work on public lands in California. 10. No surface disturbance or overland travel would occur within occupied habitat for Harwood's eriastrum from 15 February through the 31 July. This stipulation does not apply to verified, unoccupied habitat. 11. No take of Harwood's eriastrum individuals would be allowed without California BLM State Director approval. 12. Prepare a Harwood's eriastrum Linear ROW Protection Plan. 13. Project impacts to suitable habitat combined with current impacts shall be limited (capped) to a maximum of 1 percent of Harwood's eriastrum habitat across all BLM lands included within the DRECP.							

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-32: Seasonal Restriction Dates	Species-specific seasonal restriction dates per AGFD and CDFW and in applicable RMPs would be observed.		X		X	LUPA-BIO-4 LUPA-BIO-DUNE-5		X
BMP	BIO-33: Construction Lighting	All long-term nighttime lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting, if required, would be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to Project infrastructure. Long-term nighttime lighting would avoid the use of constant-burn lighting.		X	X	X	LUPA-BIO-13, LUPA-BIO-16, LUPA-BIO-DUNE-5		
BMP	BIO-34: Prevention of Puddles During Dust Abatement	The application of water and/or other palliatives for dust abatement in construction areas and during Project operations and maintenance would be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.		X		X	LUPA-BIO-6		
BMP	BIO-35: Presence of Wildlife in Construction	All construction materials and equipment would be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course		X	X	X	LUPA-BIO-14		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
	Materials or Equipment	of these inspections would be allowed to leave the construction area unharmed.							
BMP	BIO-36: Feeding or Harassment of Wildlife	The intentional feeding or harassment of wildlife on site is prohibited.		X	X	X	LUPA-BIO-14		X
BMP	BIO-37: Native Plant Collection	The collection of native plants on site is prohibited without required permits and tags.		X	X	X	LUPA-BIO-14		X
BMP	BIO-38: Use of State of the Art and Commercially-available Technology	Use state-of-the-art, commercially available construction and installation techniques, as approved by BLM, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.	X	X			LUPA-BIO-9, LUPA-BIO-15		
BMP	BIO-39: Bird- and Bat-Friendly Fencing	When fencing is necessary, use bird and bat compatible design standards.		X	X		LUPA-BIO-16, LUPA-BIO-DUNE-5		
BMP	BIO-40: Project Activity Siting Near Bat Maternity Roosts	Activities would not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost for BLM Focus and Special Status Bat Species.		X	X	X	LUPA-BIO-16, LUPA-BIO-DUNE-5, LUPA-BIO-BAT-1	X	

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-41: Succulent Management	Management of cactus, yucca, and other succulents would adhere to current up-to-date BLM policy. All activities would follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents. Preconstruction surveys of disturbance zones would include preparation of maps delineating special vegetation features. BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.	X	X	X	X	LUPA-BIO-7, LUPA-BIO-SVF-1, LUPA-BIO-VEG-1, LUPA-BIO-VEG-5, LUPA-BIO-VEG-6		X[8]
BMP	BIO-42: Dead and Downed Wood	Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	X	X	X	X	LUPA-BIO-VEG-2		X[8]
BMP	BIO-43: Collection of Plant Material	Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.	X	X	X	X	LUPA-BIO-VEG-3		X[8]
BMP	BIO-44: Mojave Desert Tortoise Protection	• All culverts for access roads or other barriers would be designed to allow unrestricted access by desert tortoises and would be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in	X	X	X	X	LUPA-BIO-IFS-3, LUPA-BIO-IFS-5,	X	

[8] The management of succulents, dead and downed wood, and the collection of plant material for the alternative 12kV distribution line would be completed per APS' Arizona BLM lands Vegetation Management Plan.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages. • Biological monitoring would occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed. • A designated biologist would accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed. • The ground would be inspected under vehicles for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location. • Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.					LUPA-BIO-IFS-6, LUPA-BIO-IFS-7, LUPA-BIO-IFS-8, LUPA-BIO-IFS-9		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-45: Protection from Loss and Harassment of Golden Eagles	Provide protection from loss and harassment of active golden eagle nests through activities identified LUPA-BIO-IFS-24 through -31.	X	X	X	X	LUPA-BIO-16, LUPA-BIO-IFS-24, LUPA-BIO-IFS-25, LUPA-BIO-IFS-26, LUPA-BIO-IFS-27	X	X
BMP	BIO-46: Compensation for Loss of Desert Riparian Woodland	The loss of desert riparian woodland would be compensated at a ratio of 5:1 Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.		X	X		LUPA-BIO-17, LUPA-BIO-COMP-1	X	
BMP	BIO-47: Riparian Functioning Condition	BLM would manage all riparian areas on BLM land to be maintained at, or brought to, proper functioning condition.		X	X	X	LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-SW-13		X
BMP	BIO-48: Flight Diverters	Bird flight diverters would be installed on the Colorado River and associated floodplain crossings and other areas of high bird use as recommended by BLM in consultation with USFWS, AGFD, and CDFW.		X	X		LUPA-TRANS-BIO-2		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-49: Fringe-toed Lizard Linear ROW Protection Plan	A Fringe-toed Lizard Linear ROW Protection Plan would be prepared that identifies specific conservation measures to minimize Project-related impacts to sand dunes and sand transport areas, to map suitable habitat within construction zones, and methods to achieve clearance surveys within suitable habitat so animals are not killed by construction activities.	X	X	X	X	LUPA-BIO-1, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-4, LUPA-BIO-DUNE-5	X	
BMP	BIO-50 Engineering Controls	Appropriate engineering controls would be used to minimize impacts on dry wash, dry wash woodland, and chenopod scrub, including downstream occurrences, resulting from surface water runoff, erosion, sedimentation, altered hydrology, accidental spills, or fugitive dust deposition to these habitats. Appropriate buffers and engineering controls would be determined through agency consultation.		X			LUPA-BIO-3, LUPA-BIO-13, LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-BIO-SVF-6		
BMP	BIO-51: Conductor Clearance	To minimize vegetation trimming, micro-siting and design considerations (including tower height) would be applied so the catenary formed by the conductors (the bottom of the sag) avoids saguaros and is not directly over wash vegetation (microphyll woodlands), to the extent practicable.	X	X			LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-BIO-SVF-6		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-52: California Riparian Habitat and Rare Plant Alliance Avoidance	In California, as part of micrositing towers, a 200-foot setback from the outer perimeter of Coloradan semi-desert wash woodland/scrub vegetation community (microphyll woodlands) would be applied. Preconstruction surveys of disturbance zones would include preparation of maps delineating special vegetation features. Minor incursions would be allowed to balance minimizing vegetation trimming (see BMP BIO-51) while maintaining an appropriate setback, as determined based on site-specific conditions. No structure would be placed within, and no new access roads would pass through, these washes to the extent practicable.	X	X	X	X	LUPA-BIO-3, LUPA-BIO-13, LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-BIO-SVF-1, LUPA-BIO-SVF-6	X	
BMP	BIO-53: Protection of Dune Vegetation	Project facilities would be sited to avoid dune vegetation. Unavoidable impacts to dune vegetation would be limited and Project facilities would be sited to minimize unavoidable impacts. Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.	X	X	X		LUPA-BIO-1, LUPA-BIO-13, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-4, LUPA-TRANS-BIO-4, DFA-VPL-BIO-DUNE-1	X	

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	BIO-54: Protection of Sand Transport	Within Aeolian corridors that transport sand to dune formations and vegetation types downwind all activities would be designed and operated to facilitate the flow of sand across activity sites, and avoid the trapping or diverting of sand from the Aeolian corridor. Structures would take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences would be designed to allow sand to flow through and not be trapped.	X	X	X	X	LUPA-BIO-1, LUPA-BIO-DUNE-1, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-4, LUPA-TRANS-BIO-4, DFA-VPL-BIO-DUNE-2	X	
BMP	BIO-55: Access within Focus and BLM special Status Species Suitable Habitat	Construction of new roads and/or routes would be avoided to the extent practicable within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern.	X	X	X	X	LUPA-BIO-13, LUPA-BIO-DUNE-4	X	X
BMP	BIO-56: Sonoran Pronghorn	Measures, as required by the USFWS in any applicable Biological Opinion, would be implemented.	X	X	X	X			X

*See Appendix 2C

2A.5 VEGETATION

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	VEG-01: Removal of Vegetation	Any removal of vegetation resources would be conducted in accordance with BLM IB 2012-097	X	X	X	X	LUPA-BIO-15, LUPA-BIO-SVF-1		X[9]
BMP	VEG-02: Avoid Vegetation Removal	Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely. Locations for drive and crush travel or cut/mow would be determined in conjunction with the Access Road Plan (Appendix 2B).		X	X	X	LUPA-BIO-14		X

*See Appendix 2C

[9] APS is currently compiling vegetation maintenance activities into a Vegetation Management Plan specific to the 12kV distribution line per BLM IM-2018-070.

2A.6 CULTURAL RESOURCES

APM OR BLM REQUIRED BMP OR EPM	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	CULT-01: Inventory and HPTP	A cultural inventory would be conducted that would document cultural resources within the area of potential effects for the Project. Based on results of this inventory, a Historic Properties Treatment Plan would be developed to specifically address direct and indirect impacts that may result from Project construction.	X	X			LUPA-CUL-4; LUPA-TRANS-CUL-1		X
APM	CULT-02: Monitoring and Discovery Plan	DCRT's contractor would prepare a Monitoring and Discovery Plan that would describe procedures to be followed in the event of the discovery of cultural resources or human remains during implementation of the Project. The Draft Monitoring and Discovery Plan would be reviewed by BLM and consulting state and federal agencies, the California and Arizona SHPOs, and local tribes. Upon approval of the Monitoring and Discovery Plan, DCRT would follow the procedures set forth in that plan during implementation of the Project.	X	X			LUPA-CUL-4; LUPA-TRANS-CUL-1		X
BMP	CULT-03: Cultural Resources Avoidance and Stipulations	DCRT would follow the avoidance procedures and other stipulations outlined in the Programmatic Agreement (PA) and in the appropriate State Historic Properties Treatment Plan for each historic property identified in the HPTP.	X	X	X	X	LUPA-CUL-4		X

APM OR BLM REQUIRED BMP OR EPM	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	CULT-04: Worker Cultural Resources Awareness Program	Before starting any work, including mowing, staging, sediment and erosion control installation, tree removal, construction, and restoration, all employees and contractors performing activities and construction would receive training on the National Historic Preservation Act, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act and the consequences of noncompliance with these acts. Training would also include cultural sensitivity to Native American concerns, since tribal monitors would be present during construction.	X	X					X
BMP	CULT-05: Cultural Resources Compensatory Fee	A compensatory mitigation fee for cumulative and indirect effects to historic properties as a result of construction is identified in the Project PA. The fee structure of the compensatory mitigation fee would be calculated in a manner that is commensurate to the size and regional impacts of the Project and would include a management fee determined and finalized in the Project PA.	X	X			LUPA-TRANS-CUL-2; LUPA-TRANS-CUL-3; DFA-VPL-CUL-1; DFA-VPL-CUL-2; DFA-VPL-CUL-3	X	
BMP	CULT-06: Sensitivity Model	BLM would develop a sensitivity model for cultural resources using the DRECP geodatabase for the purpose of selecting Project footprints to minimize impacts to recorded historic properties and areas that are culturally sensitive to Tribes.	X				LUPA-TRANS-CUL-4; DFA-VPL-CUL-4	X	

APM OR BLM REQUIRED BMP OR EPM	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	CULT-07: Sample Survey	The BLM shall ensure that a statistically significant cultural resources sample survey is conducted for consideration in Project planning in locations within the CDCA boundary.	X				LUPA-TRANS-CUL-5; DFA-VPL-CUL-5	X	
BMP	CULT-08: Project Planning	DCRT would consider the results of the BLM's cultural resources sensitivity model in Project planning and provide justification if it is not considered to be feasible.	X				LUPA-TRANS-CUL-6; DFA-VPL-CUL-6	X	

*See Appendix 2C

2A.7 RECREATION

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	REC-01: Alternative Access and Parking Signs	Signs directing vehicles to alternative existing access and parking would be posted in the event construction temporarily obstructs parking areas near trailheads.		X			DFA-REC-1, DFA-REC-2, DFA, REC-4, DFA-REC-5, DFA-REC-7		
BMP	REC-02: Recreation Users Signs	Signs advising recreation users of construction activities and directing them to alternative trails or bikeways would be posted on both sides of all trail intersections or as determined through DCRT coordination, with the respective jurisdictional agencies. A schedule of construction activities would be posted near entrances to recreational areas as well as on the Project website. Signs would be installed near access roads notifying the public of construction activities in the area and the presence of permanent transmission facilities.		X					X
BMP	REC-03: Guy Wire Marking	Plastic mesh or paint would be used to mark guy wires in areas used for recreation. Permanent high visibility guy markers would be installed during construction.		X	X				

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	REC-04: Alternate Route Signage	Identify alternative routes (on existing roads and trails) of equal or greater standard and access to specially designated areas if roads, primitive roads, or trails used for recreation are temporarily closed or otherwise significantly affected. The alternate route(s) would be clearly identified on signage.		X					X

*See Appendix 2C

2A.8 NOISE

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	NO-01: Noise Minimization with Portable Barriers	Compressors and other small stationary equipment used during construction would be shielded with portable barriers if located within 200 feet of a residence.		X			LUPA-BIO-12		
APM	NO-02: Noise Minimization with Quiet Equipment	In area in close proximity to sensitive receptors, quiet equipment (for example, equipment that incorporates noise control elements into the design; quiet model air-compressors or generators can be specified) would be used during construction whenever possible.		X					
APM	NO-03: Noise Minimization through Direction of Exhaust	Stationary equipment exhaust stacks and vents (i.e., on equipment like generators and lights) would be directed away from buildings where feasible.		X					
APM	NO-04: Blasting Mitigation	If blasting is required in close proximity to sensitive receptors, the timeframe that blasting activity would occur would be limited, in addition to limiting the number of blasts that occur per hour or per day.		X					

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP – Regional Mitigation Strategy for the AZ SEZs	NO-05: County, State, and Federal Noise Regulations	Project would be located far enough from residences or include engineering and/or operational methods such that county, state, and/or federal regulations for noise are not exceeded.		X	X				
BMP – Regional Mitigation Strategy for the AZ SEZs	NO-06: Hours of Daily Activity	The hours of daily activities would be limited, and noise barriers would be constructed if needed and practicable. Coordination with nearby residents is recommended.		X	X				
BMP	NO-07: Sensitive Wildlife Protection	To the extent feasible, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.		X	X	X	LUPA-BIO-12		

*See Appendix 2C

2A.9 HAZARDS AND HAZARDOUS MATERIALS

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	HAZ-01: Hazardous Substance Control and Emergency Response	DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable. Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed		X	X		LUPA-BIO-9, LUPA-SW-6, LUPA-SW-7		X[10]

[10] APS would follow company policies and procedures for hazardous substance spills and emergency response.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following: • Proper disposal of potentially contaminated soils. • Establishing site-specific buffers for construction vehicles and equipment near sensitive resources. • Emergency response and reporting procedures to address hazardous material spills. • Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.							

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		DCRT would complete its Emergency Action Plan Form as part of Project tailgate meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailgate information.							
APM	HAZ-02: Fire Avoidance and Suppression	Per the Fire Prevention Plan for the Project: DCRT would select a welding site that is void of native combustible material and/or would clear such material for 10 feet around the area where the work is to be performed. DCRT would follow its standard practice for clearing in wildland areas. Project personnel would be directed to drive on areas that have been cleared of vegetation, park away from dry vegetation, and carry water, shovels, and fire extinguishers in times of high fire hazard. DCRT would also prohibit trash burning. Additionally, fire-suppression materials and equipment would be kept adjacent to all areas of work and in staging areas and would be clearly marked.	X	X	X	X	DFA-VPL-BIO-FIRE-1		
BMP	HAZ-02: Fire Avoidance and Suppression	APM HAZ-02 would not interfere with APM BIO-14, which encourages overland driving/access. Vehicle and equipment operators would drive on cleared areas and park away from vegetation where possible, would be responsible to monitor for fire ignition by vehicles and equipment; and would be equipped and trained to provide first response to an inadvertent wildland fire ignition associated with the Project.	X	X	X	X	DFA-VPL-BIO-FIRE-1		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	HAZ-03: Equipment & Material Inventory	DCRT would provide the BLM with an inventory of equipment and materials to cover each hazardous material used at any time during the life of the Project, updating as additions to equipment and materials are made. Appropriate equipment and materials would follow specific recommendations for individual Haz Mat types in BLM Handbooks, EPA guidelines, and from the California Department of Toxic Substance Control (DTSC).	X	X	X	X	LUPA-BIO-9	X	
BMP	HAZ-04	DCRT would provide the BLM with a Pesticide/Herbicide Use Proposal, outlining the pesticides and herbicides that would be proposed for use on the Project (the 12kV line would not require pesticide/herbicide use), demonstrating conformance with BLM requirements, and seeking preapproval before use. Only BLM-approved products would be used.	X	X	X				

*See Appendix 2C

2A.10 PUBLIC HEALTH AND SAFETY

APM OR BLM REQUIRED BMP OR EPM	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	PHS-01	Portable toilets would be provided at work sites to assure that adequate facilities are available for the duration of the Project and potential exposure to human waste is avoided.	X	X	X	X			X
BMP	PHS-02	A Fire Prevention Plan would be developed for the Project.	X	X	X	X	DFA-VPL-BIO-FIRE-1		X[11]

*See Appendix 2C

[11] APS would comply with their current fire plan on file with the BLM.

2A.11 TRAFFIC, TRANSPORTATION, AND PUBLIC ACCESS

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	TT-01: Traffic Coordination	Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project. This plan would also include measures/protocols for aviation, including helicopter use, coordination with local air traffic control, and a Congested Area Plan, pursuant to FAA regulations.		X					X
BMP – Military & Civilian Aviation in Regional Mitigation Strategy for AZ SEZs	TT-02: Structure Lighting in Military Training Routes (MTR)	Project structures that are located within MTRs would be fitted with night-vision compatible red lighting emitting an infrared energy between 675 and 900 nanometers.			X				
BMP	TT-03: Public Access, Marking, and Public Information for Closed Access	The BLM would determine if new access routes would be retained for public access through approval of the Access Plan for the Project. If any routes of travel are not accessible and/or closed, Carsonite posts and signing would note the closures. Where routes are closed, kiosks with information panels would be posted providing public information.	X	X	X				

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	TT-04: Access Plan	An Access Plan would be required to identify all routes where new disturbance and/or cross-country travel is proposed. Existing access would be used to the maximum extent practicable; new access would only be created when there is no other reasonable or practicable means of access.	X	X	X	X	LUPA-BIO-13		X
BMP	TT-05: Using Open and Designated Routes	The Access Plan for the Project would maximize use of open and designated access routes to the extent practicable.	X	X	X	X	LUPA-BIO-13		X
BMP	TT-06: Access Roads in Dune Habitat	Access Roads would be unpaved and constructed at grade in dune habitat. No berms or application of rock would be allowed on the California public lands portion of the Project in desert tortoise habitat. Should other adaptive access measures be required (such as temporary compaction or mats to allow access across washes), those measures would be formulated in concert with the BLM and contained in the Access Management Plan (Appendix 2B)	X	X	X	X	DFA-VPL-BIO-DUNE-1	X	
BMP	TT-07: Routes of Travel	Routes of travel for the Project on BLM-managed lands outside established roadways would be limited to those routes on the approved Access Plan.	X	X	X	X	LUPA-BIO-13		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP	TT-08: Prohibit Cross-Country Vehicle Use Outside Designated Work Areas	Within Project boundaries, prohibit cross-country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.		X	X	X	LUPA-BIO-13	X	
BMP	TT-09: Repairs to Local Roads	Local roads would be restored if road damage occurred as a result of Project construction.	X	X	X	X			X
BMP	TT-10: Notify AGFD of Helicopter Construction	DCRT would coordinate with AGFD to ensure that the use of helicopters for construction in Copper Bottom Pass would not conflict with or cause an aerial hazard to aircraft flying AGFD wildlife surveys in this location.		X					

*See Appendix 2C

2A.12 VISUAL RESOURCES

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	AES-01: Vegetation Removal and Grading	During Project construction activities, the amount of existing vegetation cleared from the route would be kept to the minimum as much as practicably possible. Grading would occur as minimally as practicable and would follow the existing land contours as much as possible.		X		X			X
APM	AES-02: Work Area Reclamation	Upon completion of the Project, all construction material and debris from the permanent ROW and temporary staging areas would be removed and the areas restored. All work areas would be graded and restored to as close to preconstruction conditions as possible.	X	X	X	X			X
BMP	AES-02: Work Area Reclamation	Work area reclamation would include pulling and tensioning sites; all disturbed work areas associated with the Project.	X	X	X	X			X
APM	AES-03: Visual Distance Zone	For Segment cb-01, to increase the visual distance zone from the Arizona Peace Trail and the Project. To minimize the view blockage or impairment caused by the transmission structures to the off-road vehicle riders using the Arizona Peace Trail, the transmission line would be located as far from the trail as can be practicably constructed, while still being located below the horizon.		X	X	X			

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM Captures BLM BMP for Reducing Visual Impacts of REFs 6.4.10 – Color Treat Transmission Towers to Reduce Contrasts with Existing Landscape	AES-04: Visual Contrast	Visual Contrast. For Segment cb-01, to minimize visual contrast between the elements of the transmission line structures and the surrounding landscape. Structures would be color treated appropriate colors to most effectively blend the structures with the visible background landscape.		X	X		DFA-VPL-VRM-3		
BMP	AES-04: Visual Contrast	Color treatment of transmission structures would be applied in all areas deemed necessary by the BLM. The BLM would select/approve the color treatment to be applied under AES-04. Color treatment would be applied to Project components, such as the SCS and fencing. All conductor would be non-specular, and all structures, whether color treated or not, would have a dull, non-reflective surface.		X	X		DFA-VPL-VRM-3		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM Captures BLM BMP for Reducing Visual Impacts of REFs 6.2.10 – Collocate Linear Features in Existing ROWs or Corridors	AES-05: Location	AES-5: Collocate the transmission line as close as possible to existing transmission lines of similar size and design (while maintaining the required 250-foot setback) to minimize the overall visual impact of the Project on the surrounding areas. Keeping the proposed transmission line within the same general corridor as existing transmission lines would reduce the spread of visual impacts from areas previously not affected. Collocating with existing transmission lines would also reduce the need to construct new access roads and their associated visual impacts.		X	X	X	LUPA TRANS-BIO-4		
APM	AES-06: Siting Staging and Laydown Areas	The Project would avoid siting, staging, and laydown areas in visually sensitive areas to the extent practicable. Staging areas would be located close to transportation access points and would be sited to take advantage of previously disturbed areas to the extent practicable.	X				LUPA-TRANS-BIO-1		X
BMP	AES-06: Siting Staging and Laydown Areas	APM AES-06 would apply to all Project work areas. Also, work areas would be located to minimize impacts, including but not limited to biological and visual.	X	X	X	X	LUPA-TRANS-BIO-1		X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP (BMPs for Reducing Visual Impacts of REFs 6.2.11)	AES-07: Avoid Siting Linear Features in the Centers of Valley Bottoms and on Ridgetops	The eye follows strong natural lines in the landscape, and these lines and associated landforms can "focus" views on particular landscape features. For this reason, linear facilities associated with renewable energy projects, such as transmission line ROWs, should be sited to avoid running across the centers of valley bottoms, and to avoid ridgetop bisection (i.e., routing the ROWs perpendicular to and over ridgelines).	X	X			LUPA TRANS-BIO-3		
BMP (BMPs for Reducing Visual Impacts of REFs 6.2.12)	AES-08: Avoid Skylining	"Skylining" of transmission/communication towers and other structures should be avoided. Transmission/communication towers and other structures should not be placed on ridgelines, summits, or other locations where they would be silhouetted against the sky. Skylining draws visual attention to the Project elements and can greatly increase visual contrast. Siting should take advantage of opportunities to use topography as a backdrop for views of facilities and structures to avoid skylining. Roads may be less visible if located along ridgetops, but if they are located on the ridge face they can be highly visible because of increased cut, fill, and side cast material.	X	X			LUPA TRANS-BIO-3		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP (BMPs for Reducing Visual Impacts of REFs 6.2.13)	AES-09: Site Linear Facilities along Natural Lines within the Landscape	Siting of facilities, especially linear facilities (e.g., transmission lines, pipelines, roads), should take advantage of natural lines within the landscape (e.g., natural breaks in the landscape topography, the edges of clearings, or transitions in vegetation). Siting of facilities on steep slopes should be avoided. Siting linear facilities along naturally occurring lines in the landscape can reduce apparent contrast through repetition of the line element or through combination of multiple line elements into a single line element. Facilities sited on steep slopes are often more visible (particularly if either the Project or viewer is elevated); they may also be more susceptible to soil erosion, which could also contribute to negative visual impacts.	X	X					

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
BMP (BMPs for Reducing Visual Impacts of REFs 6.3.8)	AES-10: Use Monopole, Guyed, and Lattice Electric Transmis-sion Towers Appropriate-ly	Consideration should be given to the appropriate choice of monopoles versus guyed or lattice towers for a given landscape setting. Lattice or guyed towers are less visually obtrusive on the rural landscape than monopoles, especially when placed half a mile or more from KOPs and against a landscape backdrop. When transmission towers are placed within a half mile or less from KOPs, then monopoles would occupy a smaller field of view than lattice towers. Monopoles are often more appropriate within built or partially built environments, while lattice or guyed towers tend to be more appropriate for less-developed rural landscapes, where the latticework would be more transparent against natural background textures and colors. Where transmission facilities are to be collocated in ROWs or corridors, and the existing ROW or corridor has either lattice towers only, guyed towers only, or monopoles only, the same tower type should be selected for new transmission facilities within the ROW/corridor.	X	X					
BMP (BMPs for Reducing Visual Impacts of REFs 6.6.8)	AES-11: Use Air Transport to Erect Transmis-sion Towers	In areas of the highest visual sensitivity, air transport capability should be used to mobilize equipment and materials for clearing, grading, and erecting transmission towers. The use of air transport capability preserves the natural landscape conditions		X					

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		between tower locations, and may reduce the need for construction roads.							
BMP	AES-12: Reclamation to Reduce Visual Impacts	The Reclamation Plan for the Project would include measures designed to reduce long-term impacts to visual resources.	X	X	X	X			X
BMP	AES-13: Shifts in Alignment to Reduce Visual Impacts	The specific location of the Project within the study area would be determined based on micro-siting of Project components and new disturbance associated with access and work areas to reduce, minimize, or eliminate visual impacts.	X	X	X	X			
BMP	AES-14: SCS Fencing Specifica-tions	The BLM would work with the applicant to design the height, type, and color of fencing used to enclose the SCS to meet the objectives of the Project, minimize or optimize visual impacts, and assure compatibility with critical infrastructure protection.		X	X				
APM	AES-15: Lighting	Limited lighting would be used during night construction to ensure safe working conditions while limiting the overall lighted area. To the extent practicable, lighting would be directed in a downward position to minimize impacts to night sky.		X					

*See Appendix 2C

2A.13 WATER RESOURCES

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	WQ-01: SWPPP Development and Implementa-tion	Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill	X	X			LUPA-BIO-9		X[12]

[12] APS would prepare and submit a separate SWPPP for the 12kV distribution line.

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		Prevention, Control, and Countermeasures requirements in 40 CFR 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following: • defining ingress and egress within the Project site • implementing a dust control program during construction • properly containing stockpiled soils Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the SWRCB and ADEQ. The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit:							

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		• stormwater team qualifications and contact information • identification of operators • nature of construction activities • sequence and estimated dates of construction activities • site description • site map(s) • receiving waters • control measures to be used during construction activity • summary of potential pollutant sources • use of treatment chemicals • pollution prevention procedures, including spill prevention and response and waste management procedures							
APM	WQ-02: Worker Environment-al Awareness Program Development and Implementa-tion	The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs, Health and Safety Plan, and Hazardous Substance Control and Emergency Response Plan.	X	X					X

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	WQ-03: Vehicles and Equipment Fueling and Maintenance	Vehicle and equipment fueling and maintenance operations would be conducted in designated areas only; these areas would be equipped with appropriate spill control materials and containment.	X	X	X	X			X
BMP	WQ-04: Non-petroleum Dust Palliatives	Palliatives used for dust control would be non-petroleum products in addition to non-toxic, as specified in AQ-01.	X	X		X	LUPA-BIO-13, LUPA BIO 14	X	
BMP	WQ-05: Water Use	Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the Project shall be solely for the beneficial use of the Project or its associated mitigation and remediation measures, as specified in approved plans and permits.		X			LUPA-SW-18		X
BMP	WQ-06: Avoidance of Hydrologic Alterations	Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they would dissipate by percolation into the landscape. All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the Project area, or specific mitigation measures shall be implemented that would minimize unavoidable water quality or quantity impacts, as determined by BLM in		X		X	LUPA-SW-21, LUPA-SW-22, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-3		

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
		coordination with USFWS, CDFW, and other agencies, as appropriate.							
BMP	WQ-07: Structures in Floodplains	No permanent structures would be placed in floodplains that are narrower at the ROW crossing than the typical span width of 1,200 feet (i.e., it is assumed that such floodplains could be spanned and avoided).		X			LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-3		

2A.14 MISCELLANEOUS

APM OR BLM REQUIRED BMP	APM/BMP	DESCRIPTION	PRE-CONST.	CONST.	O&M	DECOM	DRECP CMA ADDRESSED*	CA ONLY	12KV LINE TO SCS
APM	MISC-01	An Environmental Compliance Management Plan would be prepared.	X	X	X	X	LUPA-AIR-3		X
BMP	MISC-02	All cleared and graded material to be removed from the Project area would be relocated in compliance with local ordinances.	X	X	X	X			
BMP	MISC-03	The final POD would identify areas where the final structure site temporary disturbance area could be reduced and estimates of reduced areas, in advance of field staking for the Project.		X					
BMP	MISC-04	Locations for many areas of temporary disturbance would not been definitively identified until preparation of the final POD. All temporary disturbance would be located in previously disturbed areas and/or outside ecologically and aesthetically sensitive areas to the maximum extent practicable.	X	X	X	X	DFA-VPL-BIO-IFS-1		X
APM	MISC-05	Deleted							
APM	MISC-06	Project structure locations would be matched to adjacent existing transmission line structures to the extent practicable.	X	X					
BMP	MISC-07	Project structures would be located to avoid sensitive infrastructure.	X	X					

*See Appendix 2C

Appendix 2B Ten West Link Project Plans

Table of Contents

2B.1 TWL PROPOSED PLANS

Plans available as a part of the final EIS are contained in this appendix following the lists of plans. If not contained as a part of the FEIS, plans will be provided prior to BLM issuance of the Notice to Proceed.

The following is a list of applicant committed plans:

- Environmental Compliance Management Plan
- Site plan for Soils and Hydrology, to include:
    - Soil Management Plan
- Plant and Wildlife Species Conservation Measures Plan, to include:
    - Nuisance Animal Plan
    - Mojave Desert Tortoise Protection and Compensation Plan (CPUC requirement)
- Mojave Fringe-toed Lizard Avoidance and Clearance Plan
- Raven Management Plan
- Avian Protection Plan, to include:
    - Bird and Bat Conservation Strategy (BBCS)
    - Bat Management and Protection Plan (CPUC requirement)
    - Burrowing Owl Nesting Management Plan & Nest Management Plan within the BBCS
    - Nesting Bird Management Plan (Part of BBCS)
- Vegetation Management Plan, to include:
    - Succulent Management
    - Linear ROW Rare Plant Protection Plan for Harwood's eriastrum
    - Noxious Weed Management Plan
    - Special Status Plant Transplantation and Compensation Plan (CPUC requirement)
    - Invasive Species Management Plan
- Reclamation, Vegetation, and Monitoring Plan, to include:
    - Habitat Reclamation and Monitoring
    - Visual Mitigation Plan
- Historic Properties Treatment Plan
- Paleontological Resources Treatment, Monitoring, and Discovery Plan (BLM and CPUC requirement)
- Stormwater Pollution and Prevention Plan (SWPPP), to include:
    - Erosion and Sediment Control Plan
- Spill Prevention, Control and Countermeasure (SPCC) Plan, to include:
    - Waste Management Plan
- Stream, Wetland, Well, and Spring Protection Plan
- Health and Safety Plan
- Asbestos Dust Mitigation Plan
- Fugitive Dust Control and Construction Emissions Mitigation Plan
- Blasting Plan
- Environmental Health and Safety Plan (environmental training and safety practices)
- Hazardous Materials Management Plan, to include:
    - Hazmat Containment Plan

    - Inventory of Equipment and Materials to cover each hazardous material used at any time during the life of the Project
- Emergency Preparedness and Emergency Response Plan, to include
    - Fire services agreements
- Access Road Plan
- Traffic and Transportation Management Plan
- Helicopter Flight Plan/Flight and Safety Plan
- Fire Protection and Fire Prevention Plan
- Decommissioning Plan
- Compensatory Mitigation Plan

2B.2 CMA REQUIRED PLANS

The following is a list of CMA plans required in order to comply with the CDCA Plan of 1980, as amended.

CMA	PLAN NAME	BLM NOTES
LUPA-BIO-6	Raven Management Plan	
LUPA-BIO-7, etc.	Habitat Restoration Plan	Offered by the applicant in conjunction with the POD.
LUPA-BIO-9	HazMat Containment Plan – to include accidental spill controls	Prepare in collaboration with the BLM HazMat specialist. A list of anticipated HazMat will be prepared and updated in the event that new hazardous materials come into use.
	An inventory of equipment and materials to cover each hazardous material used at any time during the life of the project.	"Appropriate" equipment and materials will follow specific recommendations for individual HazMat types in BLM Handbooks, US EPA guidelines, and from the California Department of Toxic Substance Control (DTSC).
LUPA-BIO-10	Weed Control Plan	Offered by the applicant in conjunction with the POD.
LUPA-BIO-16	Bird and Bat Conservation Strategy (BBCS)	Will provide guidance on pre-construction conservation measures and other bird and bat CMAs.
LUPA-BIO-IFS-12	Burrowing Owl Nesting Management Plan & Nest Management Plan within the BBCS	If burrows cannot be avoided, LUPA-BIO-IFS-13 applies. Need to address in BBCS, burrowing owl nesting management plan (separate document) and a nest management plan within the BBCS.
LUPA-BIO-RIPWET-1	Nesting Bird Management Plan	Part of BBCS
LUPA-BIO-PLANT-2	Linear ROW Rare Plant Protection Plan for Harwood's eriastrum	
LUPA-BIO-PLANT-2	Invasive Species Management Plan	Must be specific to rare plant habitat.

CMA	PLAN NAME	BLM NOTES
LUPA-AIR-3	Environmental Compliance Management Plan	In California, the agency policy about the project also meeting the applicable California Air Quality Standards established by the California Air Resources Board needs clarification.
	Construction Emissions Mitigation Plan	
LUPA-AIR-5	Fugitive Dust Control Plan	
LUPA-SW-7	Emergency Response Plan – to include any fire services agreements	
LUPA-SW-8	Site plan for Soils and Hydrology	
DFA-VPL-BIO-FIRE-1 and BIO-DUNE-1	Fire Prevention Plan	The plan would be site specific for the transmission lines or any other construction activity that might cause a fire. The plan would set standards for the project site dealing with these issues. There are California Fire Codes and National Fire Protection Association (NFPA) codes that they would be required to meet for the project also. Mitigation is a key to preventing/ lowering the risk of a fire starting.
LUPA-BIO-DUNE-5	Mojave Fringe-toed Lizard Avoidance and Clearance Plan	

2B.3 PLANS REQUIRED BY MITIGATION

- Worker Environmental Education Program

2B.4 OTHER AGENCY-REQUIRED PLANS

Other agency-required plans include:

- Mitigation Action Plan (Western Area Power Administration)
- EMF Management Plan (CPUC)
- Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (CPUC)
- Burrowing Owl Avoidance, Minimization, and Mitigation Plan (BOAMMP) (Part of BBCS) (CPUC)
- Cultural Resources Monitoring and Discovery Plan (CPUC)
- Field Management Plan (EMF reduction measures) (CPUC)
- Nesting Bird and Bat Management Plan (NBBMP) (CPUC)

2B.5 AVIAN PROTECTION PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Avian Protection Plan/Bird and Bat Conservation Strategy

PROJECT NUMBER:
154320

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POWER ENGINEERS

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Avian Protection Plan/Bird and Bat Conservation Strategy

PREPARED FOR: BUREAU OF LAND MANAGEMENT
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TABLES:

ATTACHMENTS

ATTACHMENT A AVOIDANCE AND MINIMIZATION MEASURES

ACRONYMS AND ABBREVIATIONS

AZGFD	Arizona Game and Fish Department
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measure
APP	Avian Protection Plan
AZ	Arizona
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BIO	Biology
BMP	Best Management Practices
BLM	Bureau of Land Management
CA	California
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CMA	Conservation and Management Action
CPUC	California Public Utilities Commission
DCRT	Delaney Colorado River Transmission, LLC
DFA	Development Focus Area
DRECP	Desert Renewable Energy Conservation Plan
EIS	Environmental Impact Statement
ESA	Endangered Species Act
kV	kilovolt
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
NRCS	Natural Resources Conservation Services
O&M	Operation and Maintenance
POD	Plan of Development
Project	Ten West Link Transmission Project
Proponent	Delaney Colorado River Transmission, LLC
Reclamation	United States Bureau of Reclamation
ROD	Record of Decision
ROW(s)	right(s)-of-way
SCS	Series Compensation Station
SGCN	Species of Greatest Conservation Need
SSC	Species of Special Concern
Ten West Link	Ten West Link Transmission Project
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1 Introduction

1.1 Purpose

The purpose of this Avian Protection Plan (APP)/Bird and Bat Conservation Strategy (BBCS) is to provide a description of measures that will be implemented by Delaney Colorado River Transmission, LLC (DCRT) to reduce potential impacts to birds and bats associated with the construction and operation of the Ten West Link Transmission Line Project (Project or Ten West Link). This plan provides specific information for implementing the applicable Applicant Proposed Measures (APMs), Bureau of Land Management (BLM)-Required Best Management Practices (BMPs), and Mitigation Measures (MM) contained within the Final Environmental Impact Statement (EIS).

1.2 Organization of This Plan

APMs, BMPs, and MMs contained within the Final EIS require DCRT to document a strategy for avoiding, minimizing, monitoring, and mitigating impacts to birds as a result of the Project. Specific documentation referred to in the APM/BMPs and California Environmental Quality Act (CEQA) MMs includes an Avian Protection Plan (APM/BMP BIO-21 and MM WIL-CEQA-1), Burrowing Owl Nesting Management Plan (BIO-30; referred to as a Burrowing Owl Avoidance, Minimization, and Mitigation Plan in MM WIL-CEQA-3), and Bird and Bat Conservation Strategy (BIO-29 and MM WIL-CEQA-1), which is to include a Nesting Bird Management Plan (BIO-29) and Nest Management Plan (BIO-29). The Nesting Bird Management Plan and Nest Management Plan, referred to in BIO-29, are collectively referred to as a Nesting Bird and Nest Management Plan in MM WIL-CEQA-1. MM WIL-CEQA-1 and MM WIL-CEQA-4 indicate that the BBCS must also include a Bat Management and Protection Plan.

To avoid redundancy and confusion, all avian and bat protection documentation is integrated into this single document—the Avian Protection Plan/Bird and Bat Conservation Strategy (APP/BBCS). The sections of this APP/BBCS include a Nesting Bird Management Plan (Section 6), Nest Management Plan (Section 7), Burrowing Owl Nesting Management/Avoidance, Minimization, and Mitigation Plan (Section 8), and Bat Management and Protection Plan (Section 9).

The avoidance, minimization, and mitigation requirements associated with the EIS, CEQA, and Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) are in many cases more stringent for California than for the Project as a whole. Within Section 3, measures that apply only within California are listed separately from measures that apply Project-wide within Arizona and California. As such, some components and sections of this plan apply only within California and where applicable that is indicated within the section heading and contents. Sections and content that do not specifically indicate California only apply within Arizona and California.

This Draft APP/BBCS was developed concurrent with development of the Final EIS, and prior to issuance of the Final EIS and Record of Decision (ROD). A final APP/BBCS will be developed with the final Plan of Development (POD), after issuance of the ROD and prior to issuance of the Notice to Proceed.

1.3 Project Description

A detailed Project description, maps of the Project area, and pole diagrams are provided in the POD. A summary Project description is provided here. The Project will consist of a single-circuit, series-compensated, 500 kilovolt (kV) transmission line. The Project will begin at the Delaney Substation near Tonopah, Arizona, and terminate at the Colorado River Substation near Blythe, California. The Project is located in Maricopa and La Paz Counties in Arizona, and Riverside County in California. The Project route (BLM Preferred Alternative) parallels an existing transmission line and other linear facilities, primarily within designated utility corridors.

Approximately 103 miles of the Project are located in Arizona and 22 miles are located in California; most of the route, 81.2 miles, will cross federal and state lands, including lands managed by the BLM, Bureau of Reclamation (Reclamation), and the state of Arizona. A 0.2-mile section of the Project spans Department of Defense land (Yuma Proving Ground military installation).

Construction, operation, and maintenance activities will occur primarily within a 200-foot-wide right-of-way (ROW). The Project will also include upgrades at both the Delaney and Colorado River Substations. Up to four temporary staging areas are required for material staging and laydown yards during construction.

The proposed support structures will be steel structures of various configurations. Tangent and small-angle steel lattice structures include self-supporting, four-legged tangent structures (i.e., structures placed where the line does not angle more than one degree); guyed-V structures with a single footing and four support guy wires; and two-legged, H-frame (steel lattice or tubular steel pole) structures as the primary structure types. Permanent guy guards/markers will be installed on guy wires for the guyed-V structures as required by BMPs and mitigation measures described in the Project's Final EIS and as summarized in Appendix B of the POD. For areas of conductor tension change, large angles, and phasing transpositions, self-supporting, four-legged structures will be utilized. Steel monopoles may be used for areas of active agricultural activity and to facilitate entrance into the two substations. The structures will be between 72 and 195 feet in height, depending on the span length required and topography, with most being shorter than 142 feet. Span lengths between structures will vary from 400 to 2,300 feet, depending upon terrain conditions, current land use, and structure type used, and would be selected to achieve site-specific mitigation objectives.

The transmission line will utilize three alternating current phases of conductors. The conductors are the wire cables strung between transmission line structures over which the electric current flows. The conductors within each phase will be bundled and are typically spaced approximately 18 inches apart in an equilateral triangle configuration. Conductor bundles for all structure types except the proposed monopoles will be installed horizontal to one another (at the same height on the structure), with approximately 34 feet of spacing between the center of each conductor bundle. The static wire and optical ground wire will be approximately 30 feet above the phase conductors at the top of the structures. The minimum conductor height above ground for the transmission line will be 36.25 to 40 feet for most of the segments and 41.25 feet for the Colorado River crossing. Insulators will be used to suspend the conductors from each structure to inhibit the flow of electrical current from the conductor to the ground, the structure, or another conductor. To protect conductors from lightning strikes, two overhead ground wires will be installed on top of the structures that will transfer current from lightning strikes through the ground wires and structures into the ground. Other hardware, such as bird flight diverters, not associated with the transmission of

electricity will be installed as part of the Project. This hardware may include aerial marker spheres or aircraft warning lighting, as required for the conductors or structures by Federal Aviation Administration regulations.

The Project requires a transmission line Series Compensation Station (SCS) located at the approximate midpoint of the route. The Proposed SCS site is located near the intersection of Segments i-03 and i-04, approximately two miles south of Brenda, Arizona. The SCS will be fenced and access will be restricted. The new SCS will be connected to an existing 12 kV distribution line via a new 3.13-mile-long 12 kV line.

Access to the ROW will be provided by existing roads and trails, such as those associated with the Devers to Palo Verde transmission line and nearby pipelines, to the extent practicable. Five types of access will be used for this transmission line: existing maintained public or private roads, upgraded existing roads, new centerline access, spur roads, and helicopter access. The existing roads will be used in their present condition without improvements, unless improvements are required or are deemed to be in the Project's best interest for future use. Where existing roads can be used to access the ROW, only spur roads to each structure site will be required. Roads for access into the transmission lines will also be utilized for access to the SCS, given that the roads are adequate for the transport of materials and equipment necessary at the SCS.

After construction, Project operation and maintenance will be an ongoing activity including transmission line inspections, preventative and emergency maintenance, vegetation management including trimming and removal of vegetation within the ROW, SCS maintenance, substation maintenance, and long-term access to the ROW through general road maintenance and installation of signs and markers.

Should the ROW and facilities no longer be needed, the transmission lines and associated facilities will be decommissioned and removed. All areas of long-term disturbance will be reclaimed in accordance with a Decommissioning Plan to be developed by the ROW grant holder and approved by the BLM prior to issuance of the ROW grant. A reclamation bond will also be required per BLM bonding policy to ensure performance of reclamation activities. Access routes and other sites disturbed during decommissioning will be reclaimed and revegetated in accordance with the Decommissioning Plan (see Appendix M).

1.4 Biological Surveys

Surveys for birds and bats will be conducted in 2019 and 2020, according to the schedules provided in Table F3-1-1. As applicable, information gained in these surveys will be incorporated into the Final APP/BBCS and will inform the implementation of this plan.

TABLE F3-1-1 BIRD AND BAT SURVEYS PLANNED FOR THE PROJECT

SPECIES/SURVEY FOCUS	TIMING	LOCATION	PROCEDURES	PROJECT MITIGATION MEASURE
2019 Season				
Arizona (2019)				
Golden & Bald Eagle	February 15 – August 1	Historical Nesting areas depicted in Draft EIS Figure 3.4-4 & 3.5-9	1-mile pedestrian/visual survey in historical areas for impacted segments	CMA-LUPA-BIO-IFS-24 through CMA-LUPA-BIO-IFS-27
General Avian Surveys	Varies; January 1 to August 31	Final Route on BLM administrated lands	Pedestrian surveys	APM-BIO-20
California (2019)				
Bat hibernaculum, maternity roosts	March 1 – July 31	Suitable habitat on BLM administrated lands	Inspect for evidence of bat activity or roosting	CMA-LUPA-BIO-BAT-1, MM-BIO-CEQA-11, BMP-BIO-40
Southwestern Willow Flycatcher	1st survey: May 15 – May 31 2nd survey: June 1 – June 21 3rd survey: June 22- June 17	Critical habitat at the Colorado River Crossing	Protocol survey, as per USFWS	MM-BIO-CEQA-9
Yellow-billed Cuckoo	1st: June 15 – July 2 2nd: August 1 – September 15	Critical habitat at the Colorado River Crossing	Protocol survey, as per USFWS	MM-BIO-CEQA-9
Arizona Bell's Vireo	April - July	Critical habitat at the Colorado River Crossing	Protocol survey, as per USFWS	MM-BIO-CEQA-9
Golden & Bald Eagle	February 15 – August 1	Historical Nesting areas depicted in Draft EIS Figure 3.4-4 & 3.5-9	1-mile pedestrian/visual survey in historical areas for impacted segments	CMA-LUPA-BIO-IFS-24 through CMA-LUPA-BIO-IFS-27
2020 Season				
Arizona (2020)				
Burrowing Owl	February 1 – August 31 (Peak: April	All work areas of Final Route	Pedestrian sweep of work areas	BMP-BIO-25

SPECIES/SURVEY FOCUS	TIMING	LOCATION	PROCEDURES	PROJECT MITIGATION MEASURE
	15 – July 15)			
California (2020)				
Southwestern Willow Flycatcher	1st survey: May 15 – May 31 2nd survey: June 1 – June 21 3rd survey: June 22- June 17	Critical habitat at the Colorado River Crossing	Protocol survey, as per USFWS	MM-BIO-CEQA-9
Yellow-billed Cuckoo	1st: June 15 – July 2 2nd: August 1 – September 15	Critical habitat at the Colorado River Crossing	Protocol survey, as per USFWS	MM-BIO-CEQA-9
Arizona Bell's Vireo	April - July	Critical habitat at the Colorado River Crossing	Protocol survey, as per USFWS	MM-BIO-CEQA-9
Burrowing Owl	February 1 – August 31 (Peak: April 15 – July 15)	All work areas of Final Route	Protocol survey, as per USFWS	MM-BIO-CEQA-10, BMP-BIO-25
Bat Focus and BLM Special Status Species (including: California Leaf-nosed Bat, Pallid Bat, Townsend's Big-eared Bat)	1 – No more than 15 days prior to ground disturbance or vegetation clearing and 2 - March 1- July 31	1-Within 300 feet of Project activities 2-Suitable habitat	1-Clearance surveys 2-Inspect for evidence of bat activity or roosting	MM-BIO-CEQA-11, CMA- LUPA-BIO-DUNE-5

BLM = Bureau of Land Management; EIS = Environmental Impact Statement; USFWS = United States Fish and Wildlife Service.

2 Applicable Regulations and Permit Compliance

DCRT will obtain all necessary construction permits and ROW approvals prior to commencing construction. Additionally, the appropriate state and federal permits will be acquired from the United States Fish and Wildlife Service (USFWS), Arizona Game and Fish Department (AZGFD), and California Department of Fish and Wildlife (CDFW) prior to any handling of birds and bats, or their nests.

DCRT will comply with all applicable state and federal regulations during the construction, operation, and maintenance of the Project, including, but not limited to the regulations identified below in Sections 2.1.1 through 2.1.5.

2.1 Federal Endangered Species Act

The federal Endangered Species Act (ESA) is administered under the USFWS. The purpose of the ESA is to "provide a means whereby ecosystems upon which endangered and threatened species depend may be conserved, and to provide a program for the conservation of these species." Section 9 of the ESA prohibits purposeful or incidental "take" of listed species, including killing or harming a listed species or its habitat. If an action with a federal nexus has potential to affect a listed species, consultation under Section 7 of the ESA is required between the lead federal agency and the USFWS.

2.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 provides for the protection of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting the take; possession; sale; purchase; barter; offer to sell, purchase, or barter; transport; and export or import of any bald or golden eagle, alive or dead, including any part, nest, or egg unless allowed by permit (16 United States Code [U.S.C.] § 668 (a); 50 Code of Federal Regulations Part 22.3). "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." "Disturb" means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

2.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was enacted in 1918 to put an end to the commercial trade of migratory birds and their feathers. The MBTA implements treaties and conventions between the United States, Canada, Mexico, Japan, and the former Soviet Union for the protection of migratory birds. This Act decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. Under this Act, it is unlawful to pursue, hunt, take, capture, kill, possess, offer to or sell, barter, purchase, deliver, transport, or receive any migratory birds (including parts, nests, eggs or other product, manufactured or not). In practice, most bird species with non-migratory life-histories are protected under the MBTA, as well. Virtually all native bird species in the United States are protected under MBTA, with the exception of upland game birds (order Galliformes: e.g., grouse and quail). While the USFWS is the lead federal agency charged with protecting migratory birds within the United States, under Executive Order 13186 all other federal agencies are charged with conserving and protecting migratory birds and the habitats on which they depend.

Historically, incidental take (i.e., take of birds resulting from an activity when the underlying purpose of that activity is not to take birds) has been considered a violation of the MBTA. In a December 22, 2017 memorandum, M-37050 (M-Opinion), the United States Department of the Interior Office of the Solicitor issued an opinion concluding that incidental take is not a violation of MBTA. On April 11, 2018, USFWS issued a guidance Memorandum acknowledging and clarifying what changes in practice should be made in light of the M-Opinion. For example, under this guidance memo, knowingly destroying an active bird nest along with the nesting substrate (e.g., vegetation clearing for construction) does not violate MBTA unless the nest is explicitly and intentionally destroyed along with the nesting substrate (e.g., tree trimming or removal to destroy an undesired nesting colony). While

incidental take of birds is no longer considered a violation of MBTA, avoiding or minimizing take of birds to the extent practicable is still a responsible, effective, and valuable way to avoid and minimize impacts to bird populations. Furthermore, minimizing impacts to individual birds is integral to many of the APMs, BMPs, and MMs required by the POD for this Project.

2.4 Arizona State Regulations

Title 17 of the Arizona Revised Statutes grants the AZGFD the responsibilities of managing, preserving, and harvesting wildlife, and enforcing all laws for wildlife protection through the development of policies and programs including the establishment of seasons for hunting, trapping, and fishing, and game limits for all non-tribal lands in Arizona. Accordingly, AZGFD manages all wild mammals, birds, reptiles, amphibians, mollusks, crustaceans, and fish as decreed in Arizona Revised Statutes Title 17.

2.5 California State Regulations

2.5.1 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code Section 2050, et seq.) protects California's rare, threatened, and endangered species. California Fish and Game Code Sections 1900 et seq. designate rare, threatened, and endangered plants under the Native Plant Protection Act of 1977. The Proponent must consult with the CDFW regarding the possibility of "take" under the Act, similar to the federal consultation required under 16 U.S.C. § 1536. as the administering agency, the CDFW can choose to find the federal biological opinion consistent with state law (a 2080.1 consistency determination) or choose to require a separate state "take" permit (a 2081 permit) if species listed by the Act could be harmed or killed during construction or operation of a project.

2.5.2 Fully Protected Species

The legislature of the state of California designated certain species as "fully protected" prior to the creation of CESA. California Fish and Game Code Section 3511, 4700, 5050, and 5515 state that "fully protected" birds or parts thereof may not be taken or possessed at any time. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, mammals, amphibians and reptiles, and birds. Most fully protected species have since been listed as threatened or endangered under the CESA and/or ESA.

2.5.2.1 Birds

California Fish and Game Codes protect all birds, as well as their eggs and nests. Specifically: Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by California Fish and Game Commission or any regulation made pursuant thereto. Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes (raptors) or Strigiformes (owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by California Fish and Game Commission or any regulation adopted pursuant thereto.

3 Avoidance, Minimization, and Mitigation Requirements from the Final EIS

All APMs and BLM-required BMPs are listed in Appendix 2A of the Final EIS. Additionally, MMs required under CEQA are listed in Appendix 1C of the Final EIS. Many Conservation and Management Actions (CMAs) from the DRECP LUPA, also apply to this Project on BLM land within California. These measures will avoid and minimize Project-related bird and bat injuries and fatalities during the construction, operations and maintenance, and decommissioning of the Project. All of the CEQA MMs and LUPA CMAs, and some of the APM and BMPs are required only within California. A majority of the APMs, BMPs, and MMs are anticipated to reduce impacts to birds and/or bats, for example protecting habitat by minimizing vegetation clearing and restoring vegetation after construction. The avoidance, minimization, and mitigation measures (APM/BMPs and MMs) anticipated to benefit birds and bats are provided in the bulleted list below. The measures most directly applicable to implementation of this APP/BBCS are shown in **bold** and have the full text of the measure provided in Attachment A.

3.1 Measures that Apply in Arizona and California

- BIO-01: Worker Environmental Awareness Program (WEAP)
- BIO-02: Biological Monitoring and Preconstruction Survey
- BIO-03: Approved Work Areas
- BIO-04: Environmentally Sensitive Areas and Fencing
- BIO-05: Additional Prohibitions
- BIO-06: Trash Handling
- BIO-07: Monofilament Plastic
- BIO-08: Refueling
- BIO-10: Erosion and Dust Control
- BIO-11: Vegetation Management Plan
- BIO-12: Noxious and Invasive Species Control
- BIO-13: Riparian Habitat Avoidance
- BIO-14: Minimizing Vegetation Clearing
- BIO-15: Reclamation and Restoration
- BIO-16: Treatment of Saguaro Cactus
- BIO-17: Limit Off-road Vehicle Travel

- BIO-19: Colorado River
- **BIO-20: Migratory Bird Protection During Construction**
- **BIO-21: Reduction of Avian Collision and Electrocution**
- **BIO-25: Sensitive Animal Surveys**
- **BIO-29: Bird and Bat Conservation Strategy**
- BIO-32: Seasonal Restriction Dates
- **BIO-33: Construction Lighting**
- BIO-36: Feeding or Harassment of Wildlife
- BIO-38: Use of State of the Art Technology
- **BIO-39: Bird- and Bat-Friendly Fencing**
- BIO-47: Riparian Functioning Condition
- BIO-50: Engineering Controls
- BIO-51: Conductor Clearance
- BIO-52: California Riparian Habitat and Rare Plant Alliance Avoidance
- BIO-55: Access within Focus and BLM special Status Species Suitable Habitat
- MM-BIO-01: Compensation Plan
- **REC-03: Guy Wire Marking**
- APM/BMP AES-15 Lighting

3.2 Measures that Apply Only in California

- BIO-28: Raven Management Plan
- **BIO-30: Burrowing Owl Nesting Management Plan**
- **BIO-40: Project Activity Siting Near Bat Maternity Roosts**
- **BIO-45: Protection from Loss and Harassment of Golden Eagles**
- **BIO-46 Compensation for Loss of Desert Riparian Woodland**
- **BIO-48: Flight Diverters**
- **MM BIO-CEQA-2: Implement a Worker Environmental Awareness Program**

- **MM BIO-CEQA-3: Implement Biological Construction Monitoring**
- **MM-WIL-CEQA-1: Develop and Implement an Avian Management and Protection Plan (APP) and Bird and Bat Conservation Strategy (BBCS).**
- **MM WIL-CEQA-3: Develop and Implement Burrowing Owl Avoidance, Minimization, and Mitigation Plan**
- **MM WIL-CEQA-4: Develop and Implement a Bat Management and Protection Plan**
- **MM WIL-CEQA-5: Conduct Preconstruction Surveys for Maternity Colonies or Hibernaculum for Roosting Bats.**
- **MM WIL-CEQA-6: Conduct Preconstruction Surveys for Nesting and Breeding [Birds].**
- **MM WIL-CEQA-7: Conduct Focused Preconstruction Burrowing Owl Surveys.**
- **MM WIL-CEQA-8: Conduct Preconstruction Protocol Surveys for Arizona Bell's Vireo, Southwestern Willow Flycatcher, and Willow Flycatcher; Avoid Occupied Habitat; Compensate Impacts.**
- LUPA-BIO-1
- LUPA-BIO-2
- LUPA-BIO-3
- LUPA-BIO-4
- LUPA-BIO-14
- **LUPA-BIO-16**
- **LUPA-BIO-17**
- LUPA-BIO-BAT-1
- **LUPA-BIO-COMP-2**
- LUPA-BIO-DUNE-2
- **LUPA-BIO-IFS-11**
- **LUPA-BIO-IFS-12**
- **LUPA-BIO-IFS-13**
- **LUPA-BIO-IFS-14**
- **LUPA-BIO-IFS-24**

- **LUPA-BIO-IFS-25**
- **LUPA-BIO-IFS-26**
- **LUPA-BIO-IFS-27**
- **LUPA-BIO-IFS-28**
- **LUPA-BIO-IFS-29**
- **LUPA-BIO-IFS-30**
- **LUPA-BIO-IFS-31**
- **LUPA-TRANS-BIO-1**
- **LUPA-TRANS-BIO-2**
- LUPA-TRANS-BIO-3
- Development Focus Area (DFA)-BIO-IFS-1
- **DFA-BIO-IFS-2**

4 Existing Avian and Bat Resources

The Draft EIS identified three federally-listed bird species with potential to occur within the Project area: yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Yuma Ridgway's rail (Yuma clapper rail; *Rallus obsoletus yumanensis*; Table F3-4-1). The three species are associated with riparian (cuckoo and flycatcher) or marsh (rail) habitat along the Colorado River. The only permanent water and associated riparian vegetation in the Project area occurs along the Colorado River and in canals and drains adjacent to irrigated fields in California. The floodplain on the eastern side of the Colorado River at that crossing site is about 0.7-mile-wide, and is vegetated with sparse to moderately dense stands of tamarisk (*Tamarix* spp.) and saltbush (*Atriplex* spp.), in addition to other low shrubs. There are individual and small groups of honey mesquite (*Prosopis glandulosa*) along the eastern edge of the floodplain, but there is no overstory of cottonwoods or other native riparian tree species. The river at that location is channelized and has a thin stand of shrubs and short trees on the steep river banks. Irrigated fields are immediately west of the river at the crossing location.

According to the Draft EIS, the area east of the river has a short, patchy overstory of nonnative salt cedar and little or no understory, thus it is very unlikely that yellow-billed cuckoos or willow flycatchers nest there; however, the areas could be used infrequently during migration or other movements along the river. The nearest known suitable nesting habitat for either species is over 10 miles from the Project area (BLM 2019).

Yuma Ridgway's rail inhabits freshwater marshes in the Colorado River corridor with water greater than 12 inches deep and dense to moderately dense stands of cattails (*Typha latifolia*), bulrushes (*Schoenoplectus* spp.), and other emergent plants. However, no emergent vegetation or other suitable habitat for Yuma Ridgway's rail exists adjacent to the Colorado River at the Project crossing. Backwater channels just south of the Project area

were developed to create habitat for rare fish and have some emergent vegetation and marshes that could be used by Yuma Ridgway's rails. According to the Biological Assessment (BLM 2019), Yuma Ridgway's rails have been observed using irrigation canals and drains in the agricultural fields south and southwest of Blythe. Many of those drains have dense stands of cattails and other emergent vegetation. There is a backwater channel about 0.4 mile south of the river crossing that contains small patches of marsh habitat. Most of the length of the backwater channel has relatively steep banks and little or no marsh vegetation, but there are some small patches of cattail (*Typha latifolia*) and other marsh vegetation along the channel that might be used by Yuma clapper rails (BLM 2019).

West of the Colorado River, the transmission line route crosses numerous canals that deliver and drain water to and from irrigated fields in Palo Verde Valley. Most of the canals are lined with concrete or are cleared of vegetation. Eight of the drains, however, have about 50- to 150-foot-wide stands of vegetation along the banks of the drain, including some with narrow bands of cattail and other marsh vegetation along the bottom of the drain. Yuma clapper rails have been observed using irrigation canals and drains in the agricultural fields south and southwest of Blythe (BLM 2019). According to the BA, the species is known to use agricultural and other upland areas during dispersal and migration and is likely to pass through the Project area.

The Biological Assessment concluded that the Project may affect but is unlikely to adversely affect the three federally-listed bird species (BLM 2019).

Additional special status bird species with potential to occur in the Project area include BLM-Sensitive species, BLM-Focus species (as designated under the DRECP LUPA), California Threatened and Endangered species, California Species of Special Concern (SSC), California Fully Protected species, and Arizona Species of Greatest Conservation Need (SGCN). In addition to the three federally-listed species, there are 22 special status bird species with potential to occur within the Project area in California (Table F3-4-2) and 27 with potential to occur within Arizona (Table F3-4-3). Suitable habitat for various species occurs throughout the Project area, including within agricultural areas, which provide quality foraging habitat for some species such as raptors. Avoidance and minimization measures described throughout this APP/BBCS will protect birds wherever they occur, including within agricultural areas.

There are no federally- or state-listed threatened or endangered bat species with potential to occur in the Project area. There are six special status bat species with potential to occur within the Arizona portion of the Project area (Table F3-4-4) and eight special status bat species with potential to occur within the California portion of the Project area (Table F3-4-5).

TABLE F3-4-1 FEDERAL ESA-LISTED THREATENED, ENDANGERED, AND PROPOSED BIRD SPECIES IN OR NEAR THE PROJECT AREA[1]

SPECIES	COMMON NAME	STATUS[2,3]	HABITAT	POTENTIAL FOR OCCURRENCE
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	ESA: T AZ: SGCN CA: E BLM: Sensitive BLM: Focus Species	Nests in dense, wide riparian woodlands with well-developed understories. Uses adjacent upland areas for foraging,	Present along the Colorado River in suitable habitat. The nearest documented nesting occurs 10 miles north and 15 miles south of the Project. Habitat at proposed river crossings is not suitable for nesting, although this species is likely to use the habitat during

SPECIES	COMMON NAME	STATUS[2,3]	HABITAT	POTENTIAL FOR OCCURRENCE
			including agricultural areas.	migration. The route segments cross proposed critical habitat along the Colorado River. However, according to the Project's Biological Assessment (BLM 2019) the conditions in the Project area do not support the primary constituent elements of proposed critical habitat for this species.
Empidonax traillii extimus	Southwestern willow flycatcher	ESA: E AZ: SGCN CA: E BLM: Sensitive BLM: Focus species	Nests in early successional riparian willow-dominated riparian habitats. Although they typically utilize riparian habitat during migration, they are also found foraging in surrounding areas in a wide variety of vegetation and habitat types	Present along the Colorado River in suitable habitat. Habitat at proposed river crossings is not suitable for nesting, although this species could use the habitat during migration and for foraging, including adjacent agricultural areas.
Rallus obsoletus yumanensis (Rallus longirostris yumanensis)	Yuma Ridgway's rail (Yuma clapper rail)	ESA: E AZ: SGCN CA: T BLM: Sensitive BLM: Focus species	Freshwater marshes with stands of bulrushes and cattails	Known to be present in canals and drains adjacent to agricultural fields in California. The proposed crossing of the Colorado River lacks suitable marsh habitat, but there is potential habitat in nearby backwater channels.

[1] From Table 3.4-8 of the Draft EIS.
[2] E = Endangered; T = Threatened.
[3] BLM Focus species as designated under the DRECP LUPA.
SGCN = Species of Greatest Conservation Need.

TABLE F3-4-2 SPECIAL STATUS BIRD SPECIES (NOT INCLUDING FEDERAL ESA-LISTED SPECIES) THAT COULD OCCUR WITHIN OR NEAR THE PROJECT AREA IN ARIZONA[1]

SPECIES	COMMON NAME	STATUS DESIGNATION (ARIZONA/ BLM)[2]	HABITAT
Melozone aberti	Abert's towhee	Arizona: SGCN	Low-elevation desert riparian and desert wash habitats. Habitat includes dense vegetation, including thickets of willow, cottonwood, mesquite, and salt cedar. Likely restricted to within and near xeroriparian washes with dense shrubs and agricultural areas within Project area.

SPECIES	COMMON NAME	STATUS DESIGNATION (ARIZONA/ BLM)[2]	HABITAT
Botaurus lentiginosus	American bittern	Arizona: SGCN	Marshlands and very wet meadows. Rarely seen away from dense reeds, rushes, cordgrass, cattails and other emergent vegetation. Within Project area, restricted to Colorado River.
Vireo bellii arizonae	Arizona Bell's vireo	Arizona: SGCN	Desert riparian woodlands, primarily with dense willow or mesquite. Uncommon along lower Colorado River.
Haliaeetus leucocephalus	Bald eagle	Arizona: SGCN BLM: Sensitive	Coasts, rivers, and large lakes. Open country and mountains during migration. Migrant and winter resident along lower Colorado River.
Ceryle alcyon	Belted kingfisher	Arizona: SGCN	Occurs near water and along banks throughout the United States. Only habitat within Project area is along and near Colorado River.
Laterallus jamaicensis coturniculus	California black rail	Arizona: SGCN BLM: Sensitive	Salt and brackish water marshes. Occurs in the lower Colorado River in areas of pickleweed thickets.
Aechmophorus clarki	Clark's grebe	Arizona: SGCN	Occurs in marshes, lakes, and, less frequently, along rivers. Only habitat near the Project area is along and near Colorado River.
Buteogallus anthracinus	Common black hawk	Arizona: SGCN	Generally, within wooded washes and streams in Arizona. Uncommon migrant and winter resident in southwestern Arizona.
Progne subis hesperia	Desert purple martin	Arizona: SGCN BLM: Sensitive	Open, flat areas and farms. Inhabits saguaros in southern Arizona. Much more common in southcentral Arizona than within and near Project area.
Phalacrocorax auritus	Double-crested cormorant	Arizona: SGCN	Occurs along coasts, bays, and rivers. Only habitat near the Project area is along and near Colorado River.
Buteo regalis	Ferruginous hawk	Arizona: SGCN BLM: Sensitive	Plains and prairies throughout western North America. In southwestern Arizona, migrant and winter resident primarily near cultivated fields.
Melanerpes uropygialis	Gila woodpecker	Arizona: SGCN	Upper Sonoran Desert in areas with stands of saguaro, riparian woodlands, and suburban areas.
Colaptes chrysoides	Gilded flicker	Arizona: SGCN BLM: Sensitive	Upper Sonoran Desert in areas with stands of saguaro, riparian woodlands, and suburban areas.
Casmerodius albus	Great egret	Arizona: SGCN	Marshes and mudflats along shorelines throughout warmer areas of the world. Only habitat near the Project area is along and near Colorado River.
Aquila chrysaetos	Golden eagle	Arizona: SGCN BLM: Sensitive	Open areas, plains, and mountains throughout North America. Nests in mountains of western Arizona.
Toxostoma lecontei	Le Conte's thrasher	Arizona: SGCN BLM: Sensitive	Flat desert areas with sparse vegetation, especially saltbush flats.
Melospiza lincolnii	Lincoln's sparrow	Arizona: SGCN	Winters in the southern United States in brushes and weedy habitats. Within Project area, restricted to Colorado River and possibly along large xeroriparian washes.

SPECIES	COMMON NAME	STATUS DESIGNATION (ARIZONA/ BLM)[2]	HABITAT
Charadrius montanus	Mountain plover	Arizona: SGCN	Winters in semiarid plains and flats in the southwestern United States. Uncommon or rare along lower Colorado River.
Circus cyaneus	Northern harrier	Arizona: SGCN	Marshes, fields, and open areas.
Falco peregrinus anatum	Peregrine falcon	Arizona: SGCN	Open country and cliffs. Sometimes inhabits urban areas. Uncommon resident in southwestern Arizona.
Pandion haliaetus	Osprey	Arizona: SGCN	Open coastlines, rivers, and lakes throughout western United States. Only riparian habitat near the Project area is along and near Colorado River, although infrequently seen away from water.
Passerculus sandwichensis	Savannah sparrow	Arizona: SGCN	Associated with open plains and meadows. Uncommon in Arizona along lower Colorado River.
Egretta thula	Snowy egret	Arizona: SGCN	Marshes, tidal flats, and ponds throughout the Americas.
Anthus spragueii	Sprague's pipit	Arizona: SGCN	Grasslands, pastures, and cultivated fields with dense, low vegetation. Rare in cultivated fields along lower Colorado River.
Tyrannus crassirostris	Thick-billed kingbird	Arizona: SGCN	Breeds in southeastern Arizona in riparian gallery forests. Rare in winter along Colorado River.
Athene cunicularia hypugaea	Western burrowing owl	Arizona: SGCN BLM: Sensitive	Utilizes burrows made by mammals in arid regions and deserts. Within Project area, likely to be common only near agricultural areas and along and near Colorado River.
Aix sponsa	Wood duck	Arizona: SGCN	Wooded areas of rivers and ponds. Uncommon in winter along the lower Colorado River.

[1] From Table 3.4-9 of the Draft EIS.
[2] SGCN = Species of Greatest Conservation Need.

TABLE F3-4-3 SPECIAL STATUS BIRD SPECIES (NOT INCLUDING FEDERAL ESA-LISTED SPECIES) THAT COULD OCCUR WITHIN OR NEAR THE PROJECT AREA IN CALIFORNIA[1]

SPECIES	COMMON NAME	STATUS DESIGNATION (CALIFORNIA/ BLM)[2]	HABITAT
Vireo bellii arizonae	Arizona bell's vireo	California: Endangered BLM: Sensitive	Dense shrub vegetation in riparian areas, fields, woodlands, scrub oak, chaparral near water in arid regions. Could occur uncommonly within or near Project area.
Haliaeetus leucocephalus	Bald eagle	California: Endangered BLM: Sensitive	Coasts, rivers, and large lakes. Open country and mountains during migration. Migrant and winter resident along lower Colorado River.
Toxostoma bendirei	Bendire's thrasher	California: SSC BLM: Sensitive BLM: Focus Species	Rare or uncommon during summer, dry and semi-arid washes and other areas containing shrubs, trees, and especially yucca. Unlikely to occur in Project area.

SPECIES	COMMON NAME	STATUS DESIGNATION (CALIFORNIA/ BLM)[2]	HABITAT
Athene cunicularia	Burrowing owl	California: SSC BLM: Sensitive BLM: Focus Species	Open grasslands, savannas and plains. Occasionally in vacant lots. This species has been detected within the Project area.
Laterallus jamaicensis coturniculus	California black rail	California: Threatened BLM: Focus Species	Marshlands and very wet meadows. Rarely seen away from dense reeds, rushes, cordgrass, cattails and other emergent vegetation. Within Project area, restricted to Colorado River.
Toxostoma crissale	Crissal thrasher	California: SSC	Microphyll woodland and riparian washes, mesquite woodlands, other dense scrub vegetation. Uncommon year-round resident in region.
Micrathene whitneyi	Elf owl	California: Endangered BLM: Sensitive	Riparian forests, desert, woodlands. No suitable habitat along California route segments, but could be present uncommonly in the surrounding area.
Melanerpes uropygialis	Gila woodpecker	California: Endangered BLM: Sensitive BLM: Focus Species	Arid lowland scrub, second-growth and montane scrub, deciduous forests, riparian woodlands. There is very little or no habitat for this species in the Project area.
Colaptes chrysoides	Gilded flicker	California: Endangered BLM: Sensitive	Saguaro cactus or Joshua tree stands, riparian areas lined with cottonwood and willows in desert lowlands and foothills. There is very little or no habitat for this species in the Project area.
Aquila chrysaetos	Golden eagle	California: Fully Protected Eagle Protection Act BLM: Sensitive BLM: Focus Species	Open areas, plains, and mountains throughout North America. This species is not known to nest or forage in the vicinity of the Project area in California, and the Palo Verde Mesa offers low prey availability.
Grus canadensis tabida	Greater sandhill crane	California: Threatened BLM: Sensitive	Overwinters in agricultural fields and irrigated pastures and nearby shallow-water wetlands for roosting. Sandhill cranes, including possibly this subspecies, have been observed uncommonly in agricultural fields near Blythe.
Toxostoma lecontei	Le Conte's thrasher	California: SSC	Vegetated washes and desert scrub with saltbush, shadscale, cholla cacti, or other species suitable for nesting. This species has been detected within or near the Project area.
Asio otus	Long-eared owl	California: SSC	Uncommon to rare year-round resident in riparian and desert woodlands throughout deserts of southern California. There are no stands or riparian trees or large desert woodlands within the Project area that would be suitable habitat for this species.

SPECIES	COMMON NAME	STATUS DESIGNATION (CALIFORNIA/ BLM)[2]	HABITAT
Lanius ludovicianus	Loggerhead shrike	California: SSC	Year-round resident in open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. This species has been detected in or near the Project area.
Charadrius montanus	Mountain plover	California: SSC BLM Sensitive	Winters in and near cultivated fields along lower Colorado River. Could occur uncommonly within and near cultivated fields.
Circus cyaneus	Northern harrier	California: SSC	Grasslands, flat areas, and hills with open habitat. This species has been detected within or near the Project area.
Asio flammeus	Short-eared owl	California: SSC	Rare in open areas, fields, and wetlands. Unlikely to occur in Project area.
Setophaga petechia sonorana	Sonora yellow warbler	California: SSC	Cottonwood, willow, and salt cedar riparian woodlands. Limited habitat within the Project area.
Piranga rubra	Summer tanager	California: SSC	Summer resident in mature cottonwood riparian woodlands along Colorado River. Limited or no habitat within and near Project area.
Buteo swainsoni	Swainson's hawk	California: Threatened BLM: Sensitive BLM: Focus Species	Plains and hills with open vegetation. This species is not expected to nest within or near the Project area.
Pyrocephalus rubinus	Vermilion flycatcher	California: SSC	Cropland, cultivated lands, desert, shrubland, riparian woodlands near water. Could occur uncommonly near cultivated fields.
Icteria virens	Yellow-breasted chat	California: SSC	Summer resident in dense, early successional riparian woodlands and thickets with willows, salt cedar, vine tangles, and dense brush with well-developed understories and some overstory for perches.
Xanthocephalus xanthocephalus	Yellow-headed blackbird	California: SSC	Freshwater wetlands with open water and dense, emergent vegetation. Foraging in fields and open cultivated areas. Could occur uncommonly along Colorado river and among agricultural fields.

[1] Adapted from Table 3.4-14 of the Draft EIS.
[2] BLM = Bureau of Land Management; FP = Fully Protected; SSC = Species of Special Concern; BLM Focus species as designated under the DRECP LUPA.

TABLE F3-4-4 SPECIAL STATUS BAT SPECIES (NOT INCLUDING FEDERAL ESA-LISTED SPECIES) THAT COULD OCCUR WITHIN OR NEAR THE PROJECT AREA IN ARIZONA[1]

SPECIES	COMMON NAME	STATUS DESIGNATION (ARIZONA/ BLM)[2]	HABITAT
Idionycteris phyllotis	Allen's (Mexican) big-eared bat	Arizona: SGCN BLM: Sensitive	Forested areas above 3,000 feet.

SPECIES	COMMON NAME	STATUS DESIGNATION (ARIZONA/ BLM)[2]	HABITAT
Myotis occultus	Arizona myotis	Arizona: SGCN	In southwestern Arizona, they are found along the lower Colorado River.
Nyctinomops macrotis	Big free-tailed bat	Arizona: SGCN	Arid lowlands and hills to 6,000 feet (1,800 meters). Roosts in crevices, buildings, and sometimes trees.
Macrotus californicus	California leaf-nosed bat	Arizona: SGCN BLM: Sensitive	Mostly found in the Sonoran desert scrub; summer and winter range the same; primarily roost in mines, caves, and rock shelters.
Myotis californicus	California myotis	Arizona: SGCN	Semi-arid and grassland areas of the southwestern United States. Roosts in caves, mines, crevices, and shrubs.
Myotis velifer	Cave myotis	Arizona: SGCN BLM: Sensitive	Desert scrub of creosote, brittlebush, palo verde, and cacti. Roost in caves, tunnels, and mineshafts, and under bridges, and sometimes in buildings within a few miles of water.

[1] From Table 3.4-9 of the Draft EIS.
[2] BLM = Bureau of Land Management; SGCN = Species of Greatest Conservation Need.

TABLE F3-4-5 SPECIAL STATUS BAT SPECIES (NOT INCLUDING FEDERAL ESA-LISTED SPECIES) THAT COULD OCCUR WITHIN OR NEAR THE PROJECT AREA IN CALIFORNIA[1]

SPECIES	COMMON NAME	STATUS DESIGNATION (CALIFORNIA/ BLM)[2]	HABITAT
Myotis occultus	Arizona myotis	California: SSC	Ponderosa pine and oak-pine woodland near water and wooded riparian areas in desert areas.
Macrotus californicus	California leaf-nosed bat	California: SSC BLM: Sensitive	Lowland desert scrub roosting in caves, abandoned mine tunnels and rock shelters in canyon walls.
Myotis velifer	Cave myotis	California: SSC BLM: Sensitive	Evergreen or pine-oak forest and pine forest at mid-high elevations and riparian habitats near desert scrub at lower elevations.
Antrozous pallidus	Pallid bat	California: SSC BLM: Sensitive	Deserts and grasslands, mostly near rocky outcrops and water. Roosts in rock crevices.
Nyctinomops femorosaccus	Pocketed free-tailed bat	California: SSC	Rocky canyons with outcroppings and high cliffs. Roosts in rock crevices and caves. Observed near shrubland, mixed tropical deciduous forest, and floodplains with sycamore and mesquite with nearby high cliffs.
Corynorhinus townsendii	Townsend's big-eared bat	California: SSC BLM: Sensitive	Near the entrance of caves, mine tunnels, and other well-ventilated areas. Night roosts can include caves as well as buildings and tree cavities. Potential foraging habitat exists along the Colorado River and in adjacent agricultural fields, and it is likely that this species is present in the area at least occasionally.
Lasiurus xanthinus	Western yellow bat	California: SSC	Roosts in trees, including woodland and riparian habitat.
Myotis yumanensis	Yuma myotis	BLM: Sensitive	Riparian, desert scrub, moist woodlands, and forests.

[1] From Table 3.4-14 of the Draft EIS.
[2] BLM = Bureau of Land Management; SSC = Species of Special Concern.

5 APP/BBCS Plan Implementation

5.1 Training

All construction and maintenance workers would be required to participate in a WEAP, prior to beginning work on the Project. DCRT will have a qualified biologist (approved by the California Public Utilities Commission [CPUC]) develop the program prior to the start of construction and submit the program to CPUC for review and approval prior to implementation. The WEAP will be prepared in accordance with APM/BMP BIO-01 and MM BIO-CEQA-2. The WEAP will be implemented throughout the duration of Project related construction activities, including Operation and Maintenance (O&M) phases. The WEAP will include the following items:

- Maps showing exclusion areas and other construction limitations. Each exclusion area may be implemented to protect specific resources, such as listed and/or special status wildlife, populations of listed and rare plants and sensitive vegetation communities, riparian habitats, seasonal depressions and known water bodies, and wetland habitat. To further protect sensitive resources, specific resources will not be identified with specific areas on the maps available to construction personnel.
- A discussion of measures to be implemented for avoidance of sensitive resources discussed in the EIS (including this appendix) and the identification of an onsite contact in the event of the discovery of sensitive species on the site; this will include a discussion on micro trash.
- Training materials and briefings will include but not be limited to: a discussion of the federal and state ESAs; the BGEPA; the MBTA; the Avian Power Line Interaction Committee (APLIC) Guidelines; the consequences of non-compliance with these regulations; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event of the discovery of dead or injured wildlife; and a review of mitigation requirements.
- Protocols to be followed when road kill or injured animals are encountered in the work area or along access roads and the identification of an onsite representative to whom the road kill will be reported. Road kill or injuries will be reported to the appropriate local animal control agency and CPUC within 24 hours. Road kill or injuries of special status species will also be reported to the CDFW and USFWS (for federally-listed species) within 24 hours or as otherwise required by the Project's regulatory permits. See Section 5.6 for more information on protocols for killed or injured wildlife.
- Literature and photographs or illustrations of potentially occurring special status plant and/or wildlife species will be provided to all Project contractors and heavy equipment operators.
- A special hardhat sticker will be issued to all personnel completing the training, which will be carried with the trained personnel at all times while on the Project site.
- All new personnel will receive this training prior to beginning work. A log of all personnel who have completed the WEAP training will be kept on site.
- A copy of the WEAP will be kept at an easily accessible location within the Project site (e.g., foreman's vehicle, construction trailer) for the duration of the Project.

- A standalone version of the WEAP will be developed, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations.
- DCRT will ensure the interpretation of the WEAP is available for all non-English-speaking workers.

5.2 Public Awareness

The Project is undergoing the full National Environmental Policy Act process, including public review and comment for the EIS. This draft APP/BBCS incorporates review and input from several stakeholders, including, but not limited to BLM, USFWS, and AZGFD, and is being issued with the Final EIS to be publicly available. The final APP/BBCS issued with the Final POD prior to Notice to Proceed will be reviewed and approved by the appropriate federal and state agencies (including BLM, USFWS, AZGFD, CDFW, and CPUC) and will be made available to the public.

5.3 Construction Design Standards

Construction design plays an integral role in avoiding and minimizing avian and bat risk. Section 3 and Attachment 1 list and summarize avoidance and minimization measures contained within the Final EIS and DRECP LUPA anticipated to reduce impacts to birds and bats. All aspects of the Project were designed to meet APLIC (2006 and 2012) recommendations for minimizing electrocution and collision risk for birds and bats. Some specific engineering design features associated with this Project that will avoid and minimize risks to birds and bats include:

- The transmission line will parallel an existing transmission line (Devers-Palo Verde 1) for much of its length, including the Colorado River Crossing and adjacent agricultural lands.
- At the Colorado River Crossing, the Project will match spans and conductor height with the existing line to the greatest extent practicable.
- Conductor bundles for all structure types except the proposed monopoles would be installed horizontal to one another (at the same height on the structure), and the two ground wires would be horizontal to one another, approximately 30 feet above the conductors.
- Use of flight diverters and guy markers in key areas as described in Section 5.5.

5.4 Electrocution

Avian electrocution can occur when a bird simultaneously contacts electrical equipment, either phase to phase or phase to ground, such as when perching on a structure with insufficient clearance between the conductor phases or conductors and a grounded surface. The separation between energized and/or grounded parts influences the electrocution risk of the structure. To prevent electrocution of eagles, which are the largest bird species likely to frequent the Project area, APLIC recommends horizontal separation of 60 inches and vertical separation of 40 inches, plus 0.2 inch for every kilovolt over 60 kV. For a 500 kV line, the resulting recommended separation distances are 148 inches horizontal and 128

inches vertical phase to phase separation, and 106 inches horizontal and 86 inches vertical phase to ground separation. Because transmission lines require larger separation distances between energized/grounded parts for electrical engineering reasons, transmission lines generally do not cause avian electrocutions (APLIC 2006). The proposed Project transmission line conductor spacing is approximately 34 feet of horizontal spacing between each conductor bundle and the static wire and OPGW would be approximately 30 feet above the phase conductors at the top of the structures. Thus, spacing will greatly exceed the necessary avian-safe separation distances. Structure diagrams are provided in the Draft POD in Figures 3-1 to 3-5.

Avian electrocutions typically occur on power lines with voltages less than 60 kV (APLIC 2006). The Project will require construction of a new 3.13-mile long 12 kV line, to support a SCS, which poses an inherent electrocution risk to birds. APLIC (2006) provides avian-safe design recommendations specific to various structure designs and conductor configurations. The powerline will be constructed according to APLIC (2006) standards, to minimize electrocution risk to birds. A pole diagram can be found in the Volume I, Draft POD, Figure 3-16.

5.5 Collisions

Bird collisions with overhead wires often involve less maneuverable species such as pelicans or species with high wing-loading that fly at high speeds and low altitudes such as ducks and rails, though collisions have been documented for a wide variety of species including songbirds (APLIC 2006 and 2012; BLM 2019). Other factors that influence the likelihood of collisions with transmission lines include the habitat type where lines are located, and environmental characteristics (e.g., visibility, weather, time of day). Collisions are more likely to occur in areas with high concentrations of birds in close proximity to transmission lines (APLIC 2006 and 2012). Waterfowl and other aquatic birds, including ducks, geese, swans, cranes, and shorebirds, appear to be most susceptible to collisions when transmission lines are located near wetlands (Erickson et al. 2005; Faanes 1987). Line-related factors influencing collision risk include the configuration and location of the line and line placement with respect to other structures or topographic features. Collisions often occur with the overhead shield (ground) wire, which is smaller diameter and less visible than the primary conductors (APLIC and USFWS 2005).

The height that birds fly is an important factor for evaluating a transmission line's avian collision potential. Birds usually migrate at elevations above the height of most transmission lines. Birds migrating at night have been recorded to typically fly from 800 to 3,700 feet above the ground (APLIC 2012). However, inclement weather may result in significant reductions in flight heights and birds can be detected migrating within several feet above the ground (APLIC 2012; Manville 2016). Birds may also collide with and/or get caught on fencing, particularly unmarked low visibility wire fencing (Koenings 2004; AZGFD 2018).

Although mortality near wind turbines is recorded far more often than collisions with stationary objects, bats have been found incidentally in bird mortality searches in both transmission and distribution powerline corridors (Manville 2016). While the recommendations from APLIC (2012) have been primarily focused on avoiding and minimizing impacts to birds, the recommendations and best practices may also benefit bats.

Measures to minimize collision risk include collocating lines with existing lines, horizontal line configurations, and marking of ground wires and guy lines (APLIC 2012).

The thickness of the 500 kV conductor bundles will render them fairly visible and a relatively low risk for avian collisions during most conditions (nocturnal migrants flying low due to inclement weather may be an exception). However, the two thinner ground wires and guy lines (at guyed V-structures) pose a significant collision risk. The greatest potential collision risks associated with the Project, will be at the Colorado River crossing and near streams and washes.

According to the Biological Assessment, 228 carcasses of birds were documented from 72 species, during 16 months of monitoring at the nearby Devers to Palo Verde 2 transmission line. Of 93 observations where cause of death could be determined, six were attributed to electrocution, and 68 were attributed to collision. At least one willow flycatcher (subspecies unknown) and one clapper rail (subspecies not specified) were found under the transmission line. The willow flycatcher carcass was found during construction (prior to wire stringing) and cause of death could not be determined. The cause of death of the rail was listed as collision with the transmission line (BLM 2019).

Several Project design measures will avoid and minimize collision risk. The transmission line will parallel an existing transmission line (Devers-Palo Verde) for much of its length, including the Colorado River crossing, including adjacent agricultural lands. At the Colorado River crossing, the Project will match spans and conductor height with the existing line to the greatest extent practicable. Conductor bundles for all structure types except the proposed monopoles would be installed horizontal to one another (at the same height on the structure), and the two ground wires would be horizontal to one another, approximately 30 feet above the conductors. Bird flight diverters will also be employed as described in the following section.

5.5.1 Bird Flight Diverters

Bird flight diverters (visibility markers) are commercially available products to increase the visibility of overhead wires to birds and have been used for decades to successfully reduce the incidence of bird collisions (APLIC 2012). A variety of flight diverter products are available from several different manufacturers, such as P&R Technologies, Power Line Sentry, and Preformed Line Products. Potential options include reflective or glow in the dark markers to render the lines visible to night migrants, including most songbirds. EDM International, Inc. (2019) evaluated 15 available bird strike avoidance technologies for DCRT and recommended the use of P&R Technologies' FireFly Bird Diverter in areas of low wind and the Firefly HW in areas where winds regularly exceed 20 miles per hour. The Firefly is an active device with a swiveling plate, that sways or spins in light winds (three miles per hour) to increase visibility. The rectangular plate is covered with reflective and fluorescent marking tape for daytime and nighttime visibility. The luminescent material emits visible light for up to 12 hours after dusk, and in low light or fog conditions. The Firefly HW has a non-swiveling plate, to decrease wear in high wind areas.

Guyed-V structures are proposed to be used in areas that do not parallel the existing Devers to Palo Verde transmission line, including in California. Permanent guy guards/markers will be installed on guy wires for the guyed-V structures where required, such as on BLM land in California and in areas used for recreation. CMA LUPA-BIO-16 states that "where the use of guy wires is unavoidable, [the proponent will] demarcate guywires using the best available methods to minimize avian species strikes." BMP-REC-03 requires guy wires to be marked in areas used for recreation. The Project's ground wires and any other static wires will be marked with visibility markers at the crossing of the Colorado River and its floodplain (APM/BMP BIO-21). The specific type(s) of flight diverter selected will be subject to approval by BLM, in coordination with USFWS, AZGFD, and CDFW as appropriate.

5.5.1.1 Additional Measures for California Only

In addition to the measures described above, within California the transmission line will be marked with flight diverters within 1,000 feet of all stream and wash channels, canals, ponds, and any other natural or artificial body of water (APM/BMP BIO-48). On BLM land in California, all guy wires will be demarcated using the best available methods to minimize avian species strikes (CMA LUPA-BIO-16). The specific type(s) of flight diverter and guy wire markers selected will be subject to approval by BLM, in coordination with USFWS and CDFW.

5.5.2 Bird and Bat Friendly Fencing

All substation activities will occur within the existing substation fences, but approximately 1,000 feet of new fence will be constructed around the 1.5-acre SCS. The SCS perimeter fence will be a seven-foot-high chain-link fence with steel posts. One foot of barbed wire will be installed at the top of the chain-link, yielding a total height of eight feet. Additionally, some staging areas would be temporarily fenced during construction. Temporary fencing may be employed in areas of active construction activities, or where required for employee or public safety. Exclusion fencing may be installed to protect sensitive habitat from disturbance.

To minimize potential bird collisions with Project fencing, all newly constructed fences will utilize high visibility fencing or will be marked to increase visibility of the top wire (APM/BMP BIO-39). One recommended marking method is to install sections of PVC (polyvinyl Chloride) or HDPE (high-density polyethylene) pipe around the top wire at regular intervals (Koenings 2004; AZGFD 2018). A slot can be cut down the length of the pipe or conduit, and then sleeved over the wire. Fencing can also be made more visible to birds by attaching reflective or colorful weather-resistant flagging materials (e.g., aluminum or plastic strips) to the top wire. COR Enterprises and Pexco are two companies that manufacture vinyl fence markers, that may be easily hung from the top wire of barbed-wire fences at three-foot intervals to increase visibility without covering up the barbs (which in some circumstances may be important to maintain the fences effectiveness). Natural Resources Conservation Services (NRCS) may be contacted for recommendations on manufacturers of fence markers (NRCS 2012; Sage Grouse Initiative 2014). NRCS also provides directions for creating homemade fence markers using vinyl undersill trim and optionally adding reflective tape to increase visibility at night (NRCS 2012). BLM regularly makes and uses these in sage-grouse habitat (Personal communication, C. Fletcher, via April 2019 APP/BBCS draft review comment).

5.5.3 Lighting

In conformance with APM/BMP BIO-33 and APM/BMP AES-15, any nighttime lighting necessary to provide safe working conditions will be temporary and set up to limit light spillover outside of the construction area. Lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure. If applicable, lighting will also be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting installed at the SCS to facilitate maintenance and repairs under emergency conditions during night time hours, will not be constant-burn lighting and will only be turned on during use.

5.6 Collision and Electrocution Fatality Monitoring

5.6.1 Construction Monitoring

Biological construction monitoring will be implemented per APM/BMP BIO-2 and MM BIO-CEQA-3. A qualified biological monitor will be present on the Project site during all work activities within habitat of special status animal species. Multiple biological monitors will be provided so any work site within habitat of special status species is monitored concurrently if needed.

The biological monitors will be approved by BLM, in consultation with USFWS and relevant state agencies (AZGFD, CDFW, CPUC), prior to construction monitoring. Resumes have been and will be provided to BLM for approvals. The biologist(s) must be knowledgeable with the life history and habitat requirements of federal- and state-listed and special status birds and bats. The qualified biologist(s) will conduct clearance surveys for listed and special status species prior to the start of construction activities each work day during initial site disturbance; clearance surveys will be conducted on a weekly basis thereafter. Locations of listed and/or special status wildlife will be flagged for avoidance and appropriate avoidance buffers established as described in MM WIL-CEQA-1 through MM WIL-CEQA-11. Results of all monitoring will be recorded on daily site observation reports and include details about the construction activities. The daily monitoring reports shall be compiled and submitted to the CPUC, BLM, CDFW, AZGFD, and USFWS for review on a weekly basis. Contents of the reports shall include at a minimum the date, time of monitoring, location, qualified biologists name, construction activities, biological conditions and species detections, and any issues encountered during the monitoring effort.

The monitors will not handle any special status bird or bat species, unless dead or injured animals are encountered. Special purpose utility permits to collect injured or dead birds and bats will be obtained from USFWS, AZGFD, and CDFW, and all conditions of the permits will be adhered to. If dead or injured special status wildlife species are detected on the construction site, the qualified biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. The BLM Authorized Officer will be immediately notified of the injury or fatality via email. Details of the incident and prevention measures will be included within a separate monitoring incident report. If appropriate and consistent with USFWS, AZGFD, and CDFW permits, remains of dead animals shall be collected and frozen as soon as possible, and CDFW, AZGFD and USFWS, as well as all other appropriate federal and state regulatory agencies, shall be contacted regarding ultimate disposal of the remains. The incident report shall be sent to the CPUC, CDFW, AZGFD and USFWS, as well as any other appropriate Federal and State agencies, within five calendar days. The construction biological monitoring report will at a minimum include: the date, time of the finding or incident (if known), and location of the carcass, injured animal or other impacted species, and the circumstances of its death or injury (if known). Injured animals shall be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility. The contact information for several wildlife rehabilitation facilities are provided in Section 5.9 Contact List.

5.6.2 Avian Reporting System During Operation and Maintenance

To comply with BMP BIO-21, CMA LUPA-BIO-16, and CMA LUPA-BIO-17, DCRT will maintain records of all avian and bat mortalities or injuries detected incidentally within the Ten West transmission line ROW during standard O&M activities. DCRT will report all avian

and bat mortalities or injuries observed within the Project ROW to the USFWS. To report injuries, DCRT will contact Meghan_Sadlowski@fws.gov to set up an account to enter injury and mortality data in the USFWS Injury and Mortality Reporting system. If an eagle or threatened/endangered species is found, DCRT will notify the USFWS, AZGFD, and/or the CDFW within 24 hours of the discovery and identification.

Through the avian reporting system, dead or injured bird or bat records can indicate specific problem areas where more detailed analysis is necessary. DCRT will investigate problem areas to determine whether corrective measures are appropriate. Agency coordination will be initiated as needed.

5.6.3 Preconstruction Bird and Bat Surveys to Determine Compensatory Mitigation

MM BIO-01 and CMA LUPA-BIO-COMP-2 prescribe that a Compensation Plan be completed that describes procedures for calculating a compensatory mitigation fee to be assessed for mortality impacts to bird and bat Focus and BLM special status species. The Draft Compensatory Mitigation Plan may be found in Volume III, Appendix B-3 of the POD. In practice, it is likely that most or all fatalities will be common, non-special status bird or bat species, rather than Focus and BLM special status species. Monitoring and avoidance of nesting birds is anticipated to prevent project-related mortality of eggs or nestling young during construction.

The most accurate way to estimate the amount of mortality overall to birds and bats would be with construction monitoring to identify nest failures caused by the Project (if any) and post construction fatality monitoring to identify collision or electrocution mortality (as described in Section 5.6). CMA LUPA-BIO-COMP-2, which only applies in California, states that “the initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity” and that the fee would be reassessed every five years based on results of post construction bird and bat fatality monitoring.

Preconstruction surveys described in this draft APP/BBCS include: nest searching and monitoring for all protected birds (see Section 6.2); nest surveys specifically for golden eagles and other raptors (see Sections 5.8.2 and 6.2); species-specific surveys for burrowing owls (see Section 8); roost surveys for bats (see Section 9.1.1); presence/absence surveys for yellow-billed cuckoo, southwestern willow flycatcher, and Arizona Bell’s vireo (see Section 5.8.1); and presence/absence surveys for Yuma Ridgway’s rail if suitable habitat is present (see Section 5.8.3). If, through further conversations with BLM, it is deemed necessary to acquire more preconstruction data for implementation of MM BIO-01 and CMA LUPA-BIO-COMP-2, additional surveys may include one or more of the following: bat acoustical monitoring (USFWS 2012), avian point count surveys (USFWS 2012), and visual flight surveys for raptors, waterfowl, and other large birds (APLIC 1994; USFWS 2012 and 2013). Visual flight surveys (which include frequency, flight time, and flight height relative to the infrastructure posing collision risk) have the most potential for explicitly predicting collision fatalities; however, current research and modeling procedures that successfully predict collision fatalities based on preconstruction data are lacking, other than perhaps for golden eagle-wind turbine collisions (USFWS 2013).

5.6.4 Standardized Fatality Monitoring Program

To comply with APM/BMP BIO-21, CMA LUPA-BIO-16, and CMA LUPA-BIO-17, in addition to the Avian Reporting System described above, standardized monitoring and analysis will

be conducted as described in this section, or as revised through discussions with the appropriate agencies (BLM, CDFW, AZGFD, USFWS, and/or CPUC). Protocols implemented to monitor Project bird and bat fatalities will be consistent with USFWS (2012) and APLIC (2012) guidance. APLIC (2012) provides general guidance for implementation of standardized monitoring under power lines. USFWS (2012) provides more specific guidance that, while written with wind-energy generation facilities in mind, is consistent with the APLIC (2012) guidance and could be equally well applied to monitoring of power line fatalities. USFWS recommends the following:

- Post construction surveys should initially be performed for one or two years. Additional years of survey should be performed if indicated by results of the initial post construction surveys.
- Surveys should be conducted during all seasons.
- Survey transects should occur at an interval of 3 to 10 meters apart.
- Search protocol should be standardized to the greatest extent possible to facilitate analysis of fatality estimates.
- During searches, actual fatalities are incompletely observed, so carcass counts must be adjusted by some factor that accounts for searcher detection rates (efficiency) and removal of carcasses by scavengers.

The primary objective of the post construction avian and bat fatality monitoring for the Ten West Link will be to estimate the annual number of avian and bat fatalities attributable to the Project's transmission line. Survey of the associated 12 kV distribution line is not proposed. The results will also be used to identify problem areas where additional avoidance measures may be appropriate (e.g., line marking). Standardized fatality monitoring will be conducted at approximately one-month intervals for two years. Approximately 30 percent of the transmission line will be surveyed. To make the survey area as representative as possible of the entire transmission line, the transmission line area will be stratified by habitat type, and type of line marking. Approximately 30 percent of each strata will be surveyed.

During the monthly surveys, within each surveyed section of ROW, an observer will search for carcasses along parallel transects, spaced approximately 10 meters apart. Five transects will be searched. For each area surveyed, observers will record date, location, start and end times of survey, observer name(s), and number of carcasses found. For each carcass that is found during surveys, additional data will be recorded: species, sex, age, geographic coordinates of the carcass (recorded via Global Positioning System), habitat type, and condition of carcass. Photographic documentation of each carcass will be collected. A qualified avian and/or bat biologist, as appropriate, will determine/confirm species, age, and sex of each carcass (as allowed by carcass condition) using physical or photographic evidence collected by the field surveyors. If physically collected, carcasses will be placed in a plastic bag, labeled, and provided to the agencies as necessary. Collection of carcasses will be coordinated with the USFWS, CDFW, and AZGFD, and appropriate collection permits will be obtained from the CDFW, AZGFD, and the USFWS. Carcasses found in non-search areas will be treated as incidental discoveries. Incidental fatalities will be reported on an annual basis and the cause of death will be documented to the extent possible.

During carcass searches, actual fatalities are incompletely observed due to removal of some carcasses by scavengers and imperfect detection by surveyors. Therefore, USFWS (2012) and APLIC (2012) recommend adjusting carcass counts by correction factors that account for searcher detection rates (efficiency) and removal of carcasses by scavengers. To estimate the appropriate correction factors, searcher efficiency trials and carcass removal

trials will be conducted as recommended by USFWS (2012) and APLIC (2012). Searcher efficiency trials and carcass removal trials will be conducted in carcass search plots concurrent with carcass searches. Searcher efficiency and carcass removal will be estimated for carcasses within each of two size classes for avian species (small and large birds) and an additional class for bats, during each of the four seasons (winter, spring, summer, fall). During each season, approximately 10 carcasses of small birds, 10 carcasses of large birds, and 10 carcasses of bats (or mice as surrogates) will be distributed at random points within search plots. This should be sufficient to provide one estimate of searcher efficiency for each size class and season. Carcasses of non-native species such as house sparrows, coturnix quail, and European starlings will be used to represent small-sized birds, and species such as rock pigeons and chickens to represent large-sized birds. Trials will be conducted twice per season (eight times per year). To estimate detection of bats, bat carcasses will be used if available; otherwise mouse carcasses will be used. Trial carcasses will be placed at random locations within areas being searched prior to the carcass search (on the same day, if feasible). Personnel conducting the searches will not know the location of the trial carcasses. The number and location of the trial carcasses found during the carcass search will be recorded. The same trial carcasses will be left on the landscape and periodically checked to assess scavenger removal rates. Exact timing of carcass checks will depend on logistics, but carcasses will be checked approximately two to three times the first week, once each of the next few weeks and once more at approximately six weeks.

Statistical analysis will be conducted using methods and software developed for analyzing collision fatality data (e.g., Huso et al. 2015; USGS 2018a and 2018b). Unbiased estimates of fatalities will be derived from three components: 1) number of carcasses found during searches; 2) searcher efficiency expressed as the proportion of planted carcasses found by searchers; and 3) removal rates to estimate the proportion of fatalities that remain long enough to be available for detection by the searchers. Following completion of each full year of monitoring, DCRT will produce an annual report communicating all bird and bat fatalities observed, unbiased overall bird and bat fatality estimates, species-specific fatality estimates, and an assessment of whether fatalities vary in relation to site characteristics within the Project area. DCRT will provide the report to the appropriate agencies. The results will be used to assess risk, identify areas and issues of particular concern, and if problem areas are identified, inform decisions about additional avoidance measures as described below in Section 5.6.5. The results will also be used to calculate compensatory mitigation requirements, as prescribed by MM BIO-01 and described in the Compensatory Mitigation Plan (Volume III of the POD, Appendix B-3).

5.6.5 Adaptive Management: Mortality Reduction and Avian Enhancement.

If the results of post construction fatality monitoring (described above in Section 5.6.2 and Section 5.6.4), indicate problem areas for collision or electrocution fatalities for birds or bats, DCRT will confer with the appropriate state and federal agencies (USFWS, BLM, CPUC, CDFW, and AZGFD) regarding potential implementation of additional avoidance, minimization, or mitigation measures. The specific measure(s) chosen would depend on the nature, extent, and location of the problem area(s). Potential measures may include mortality reduction measures such as adding or replacing flight diverters, guy markers, or fence markers, retrofitting infrastructure to decrease electrocution risk, or offsite avian enhancement such as installing nest platforms

5.6.6 Compensatory Mitigation

In conformance with MM-BIO-01, a Compensation Plan is being prepared (POD Appendix B-3). The Compensation Plan will include calculations of compensation ratios and mitigation acreages for loss of habitat for any biological resources requiring additional mitigation. CMA LUPA-BIO-COMP-2 states that compensation will be paid for mortality impacts to bird and bat Focus and BLM special status species from activities in California, and a fee re-assessed every five years to fund compensatory mitigation. Section 5.6.4 of this APP/BBCS describes the Project's post construction fatality monitoring protocol. In practice, it is likely that most or all fatalities will be common, non-special status species. Monitoring and avoidance of nesting birds is anticipated to prevent mortality to eggs or nestling birds during construction.

5.7 Nest Management

Nest management will include two components:

- Monitoring and protection of breeding birds and their active nests (APM/BMP BIO-20, MM WIL-CEQA-6, APM/BMP BIO-29, and MM WIL-CEQA-1) is covered in depth in Section 6.
- Management of inactive nests (APM/BMP BIO-29) is covered in Section 7.

5.8 Special Status Species Monitoring and Avoidance

Monitoring and avoidance for special status bird and bat species will be implemented in compliance with the Final EIS avoidance and minimization measures, including:

- Within Arizona and California: APM/BMP BIO-02 and BIO-25.
- Within California only: MM WIL-CEQA-3, MM WIL-CEQA-8, BIO-40, MM WIL-CEQA-4, MM WIL-CEQA-5, BIO-45, LUPA BIO-IFS-12, LUPA BIO-IFS-13, LUPA BIO-IFS-14, LUPA BIO-IFS-24, LUPA BIO-IFS-25, LUPA BIO-IFS-26, LUPA BIO-IFS-27, LUPA BIO-IFS-28, LUPA BIO-IFS-29, LUPA BIO-IFS-30, and LUPA BIO-IFS-31.

5.8.1 Southwestern Willow Flycatcher and Arizona Bell's Vireo

MM WIL-CEQA-8 prescribes preconstruction surveys for southwestern willow flycatcher and Arizona Bell's vireo within the California portion of the Project area. However, there does not appear to be any potential nesting habitat for southwestern willow flycatcher or Arizona Bell's vireo near proposed Project activities in California. Within Arizona, marginal habitat may exist near the Colorado River (relatively sparse riparian vegetation dominated by patchy tamarisk), which is likely to be used by migrating birds but unlikely to be used by breeding birds. DCRT will conduct protocol level surveys within California and general avian surveys within Arizona in 2019 and 2020. The Nesting Bird Management Plan (Section 6) describes the preconstruction nest survey and nest avoidance protocols which apply to all protected bird species, including southwestern willow flycatcher and Arizona Bell's vireo.

5.8.1.1 Additional Measures Within California Only

Per MM WIL-CEQA-8, DCRT will conduct preconstruction focused surveys for Bell's vireo and willow flycatcher surveys within California in potential habitat within 500 feet of proposed disturbance. Though habitat is marginal at best, these surveys will be conducted at the Colorado River crossing in 2019 and 2020 (USFWS 2001; Sogge et al. 2010). The surveys will be conducted by a qualified avian biologist, approved by CPUC in consultation with USFWS and CDFW. Prior to construction, documentation will be submitted providing the results of the surveys to the CPUC for review and approval in consultation with USFWS and CDFW.

If an active breeding territory or nest is confirmed, the CPUC, USFWS, and CDFW will be notified immediately. All active nests will be monitored on a weekly basis until the nestlings fledge or the nest becomes inactive. The Proponent will provide monitoring reports to the CPUC for review on a weekly basis. In coordination with the USFWS and CDFW, a minimum 300-foot disturbance-free ground buffer will be established around the active nest and demarcated by fencing or flagging. No construction or vehicle traffic will occur within nest buffers.

The qualified biologist will have the authority to halt construction activities and will devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. All active nests will be monitored on a weekly basis until the nestlings fledge.

5.8.2 Golden Eagle

Golden eagle nest locations are widely scattered across the region in Arizona and have been documented in the New Water, Eagletail, and Plomosa Mountains, and potential nest sites have been identified elsewhere near the Project area (Stantec 2018; see Figure 3.4-4 of the Draft EIS for a map of previously documented golden eagle breeding areas in the Project vicinity). No known nest sites are within one mile of the Project, though the entire Project area is considered potential foraging habitat.

There is no known nesting habitat for the golden eagle within the California portion of the Project area, and the closest potentially suitable nesting location would be in the Mule Mountains, about one mile southwest of the Project area. As described in the Draft EIS, Eagle nest surveys have been conducted in the general vicinity for other projects. While nesting has not been documented recently in the Mule Mountains, there is an eagle nest within 10 miles of the Project area, as described in the Draft EIS. The Project area may provide eagle foraging habitat, but the Palo Verde Mesa offers low prey availability. An assessment of eagle prey availability on the Palo Verde Mesa (Ironwood Consulting 2016) estimated 0.0035 jackrabbits per acre.

Golden eagles are protected under BGEPA, as well as MBTA, and California codes. Golden and bald eagle pedestrian nest surveys are being conducted in 2019 within one mile of the Project in historical nesting areas in Arizona and California.

5.8.2.1 Additional Measures Within California Only

Protection measures for golden eagles are dictated by APM/BMP BIO-45, which applies only in California and commits to activities identified in LUPA BIO-IFS 24 through 31. LUPA BIO-IFS-24 states that "activities that may impact nesting golden eagles, will not be sited or constructed within 1.0-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate." If Project construction were to occur during the breeding season (January 1 – August 15) near an active eagle nest, the disturbance could impact nesting eagles. No known eagle nest sites are within one mile of the proposed transmission line. Existing data suggests that eagles are unlikely to nest within one mile of the Project. Golden and bald eagle pedestrian nest surveys are being conducted in 2019 within one mile of the Project in historical nesting areas. Preconstruction nest survey and avoidance measures described in Section 6 – Nesting Bird Management Plan, would protect eagles in the event that a new or previously undiscovered nest occurs near the construction area.

LUPA BIO-IFS-25 states that "cumulative loss of golden eagle foraging habitat within a 1 to 4-mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20%." The amount of habitat loss caused by construction of the transmission line will be very small relative to the area within an eagle foraging territory (e.g., four-mile radius)—well under one percent—and would not be expected to significantly contribute to a 20 percent habitat loss threshold.

LUPA BIO-IFS 26-31 apply to activities that pose a significant risk of eagle take (e.g., wind energy development). The Draft EIS states that there is no reasonably foreseeable expectation for take of golden eagles.

5.8.3 Yuma Ridgway's Rail in California

Yuma Ridgway's rail habitat does not occur at the proposed Colorado River crossing. According to the Biological Assessment (BLM 2019), Yuma Ridgway's rails have been observed using irrigation canals and drains in the agricultural fields south and southwest of Blythe. Many of those drains have dense stands of cattails and other emergent vegetation. There is a backwater channel about 0.4 mile south of the river crossing that contains small patches of marsh habitat. Most of the length of the backwater channel has relatively steep banks and little or no marsh vegetation, but there are some small patches of cattail (*Typha latifolia*) and other marsh vegetation along the channel that might be used by Yuma clapper rails (BLM 2019).

West of the Colorado River, the transmission line route crosses numerous canals that deliver and drain water to and from irrigated fields in Palo Verde Valley. Most of the canals are lined with concrete or are cleared of vegetation. Eight of the drains, however, have about 50- to 150-foot-wide stands of vegetation along the banks of the drain, including some with narrow bands of cattail and other marsh vegetation along the bottom of the drain. Yuma clapper rails have been observed using irrigation canals and drains in the agricultural fields south and southwest of Blythe (BLM 2019). According to the Biological Assessment, the species is known to use agricultural and other upland areas during dispersal and migration and is likely to pass through the Project area.

When the final Project area is determined (including all approved access routes, staging areas, turnaround areas, etc.) a desktop habitat assessment will be conducted to ensure that Project activities will not take place within 500 feet of any potentially suitable habitat. It is unlikely that suitable habitat will occur within the Project area, but if the desktop

assessment identifies possible habitat within 500 feet of proposed activities, a field habitat assessment will be conducted. If the presence of potentially suitable habitat is verified during the field habitat assessment t, the habitat will be buffered by 500 feet if practicable. If it is impractical to avoid the habitat buffer during the breeding season (February 15 - September 15), then USFWS-protocol (2017) surveys will be conducted, and construction work within the breeding season may be conducted only if surveys indicate no presence of Ridgway's rails.

5.8.4 Burrowing Owl

DCRT will conduct focused preconstruction burrowing owl surveys and implement avoidance measures (MM WIL-CEQA-7). These procedures are detailed in Section 8 — Burrowing Owl Nesting Management/Avoidance, Minimization, and Mitigation Plan (MM WIL-CEQA-3; APM/BMP BIO-30).

5.8.5 Bats

5.8.5.1 Bat Collision Risk

Although mortality near wind turbines is recorded far more often than collisions with stationary objects, bats have been found incidentally in bird mortality searches in both transmission and distribution powerline corridors (Manville 2016). While the recommendations from APLIC (2012) have been primarily focused on avoiding and minimizing impacts to birds, the recommendations and best practices may also benefit bats. On BLM land in California, guy lines will be marked to improve visibility and reduce collision risk for birds and bats. Markers will be used on the shield wires at the crossing of the Colorado River and floodplain to increase visibility to birds and bats (BIO-21). Flight diverters will be installed on all shield wires or guy lines spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water (BIO-48). Because bat foraging use tends to be concentrated near water and/or relatively moist areas that support large insect populations, these measures are likely to greatly minimize any potential collision risk to bats.

5.8.5.2 Bat roosts and hibernacula

In California, DCRT will conduct preconstruction bat roost surveys and implement avoidance measures (APM/BMP BIO-40, MM WIL-CEQA-4, MM WIL-CEQA-5). These procedures are detailed in Section 9 — Bat Management and Protection Plan.

5.8.6 Bendire's Thrasher

As analyzed in the Draft EIS, Bendire's thrasher is unlikely to occur in the Project area. Per LUPA-BIO-IFS-11, which applies on BLM land in California, if Bendire's thrasher is detected during the course of any preconstruction surveys or construction monitoring, DCRT will conduct appropriate activity-specific biological monitoring to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

5.9 Contact List

- Wildlife Rehabilitators to call for injured birds or bats:
    - For injured raptors: Wild at Heart (Emergency assistance: 480-595-5047)
    - For injured quail or other small birds: Arizona Covey (602-996-1934)
    - For injured small insectivorous birds: Wild Wings Rehab (480-893-6660)
    - For injured bats: Southwest Wildlife (480-471-9109)
    - For injured birds or bats: Lake Havasu City Humane Society (928-855-5083)
- USFWS Migratory Bird Permit Regional Offices:
    - California (Region 1) USFWS Migratory Bird Permit Office (503-872-2715; permitsR1MB@fws.gov
    - Arizona (Region 2) USFWS Migratory Bird Permit Office (505-248-7882; permitsR2MB@fws.gov)
- AZGFD Headquarters, Phoenix AZ (602-942-3000)
- CDFW Region 6-Inland Deserts Region (909-484-0167)

6 Nesting Bird Management Plan: Active Nests

6.1 Introduction

The purpose of this Nesting Bird Management Plan is to specify the DCRT strategy and specific procedures to comply with applicable federal and state regulations, as well as the applicable commitments specified in the Final EIS, for the protection of nesting birds that have potential to be impacted by Project activities, and to obtain agency concurrence on the strategy and procedures.

The applicable federal and state regulations are described in Section 2, above. The regulations specific to nesting birds that are most broadly applicable to this plan are the federal MBTA and California Fish and Game Code Section 3505, which protect not only most native birds but also their nests. USFWS defines an active nest is one that contains viable eggs and/or chicks. A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest. Nests that are empty, contain non-viable eggs, or are being built but do not yet have an egg in them are considered inactive (USFWS 2018). Destruction of inactive migratory bird nests is not a violation of MBTA (USFWS 2018). In 2016, CDFW proposed to define an active nest similarly. Proposed regulation Section 681, Title 14, Code of California Regulations clarified Section 3503 by defining several terms, including “nest” which it defined as “a site or a structure built, maintained or used by a native bird, which is occupied by eggs or nestlings, or is otherwise essential to the survival of a juvenile bird.” But on August 5, 2016, CDFW

issued a notice of decision not to proceed with the adoption of Section 681. Thus, the terms of Section 3503 remain undefined. For the purposes of this document, USFWS definition of active nest will be assumed.

All the avoidance, minimization, and mitigation measures applicable to the protection of birds and bats are listed and/or fully described in Section 3 above. The measures most directly applicable to this Nesting Bird Management Plan include APM/BMP BIO-20, MM WIL-CEQA-6, APM/BMP BIO-29, and MM WIL-CEQA-1.

6.2 Monitoring

If construction activities are scheduled to be conducted within the recognized breeding season, preconstruction nest monitoring will be conducted, and active nests will be avoided as discussed below. The breeding season has been recognized to apply in Arizona as February 1 through August 31 (APM/BMP BIO-20), and to apply in California as January 1 to August 15 for raptors and February 15 to September 15 for other species of birds.

DCRT will retain a qualified avian biologist(s) to conduct preconstruction nesting bird surveys within the recognized breeding season, for all areas near construction activities that are scheduled to take place during the breeding season; construction activities include mobilization, staging, grading, and/or construction. The exact size of the survey areas may vary among sites and will support the state-specific and species-specific avoidance buffers as specified in Table F3-6-1. Within California, at a minimum, the survey area will encompass a 500-foot buffer of Project construction activities. Survey dates may only be modified with the approval of USFWS, AZGFD, and CDFW, where applicable.

Avian biologists will be sufficiently skilled and experienced with the identification of all species expected to occur in the Project area, and with nesting habits of locally breeding birds, so as to conduct accurate and efficient surveys. The names and qualifications of the avian biologist(s) and biological monitors will be provided to the appropriate agencies for approval (USFWS, BLM, CDFW, and AZGFD) prior to the surveys. The hierarchical line of communication associated with nest monitoring and implementation of avoidance buffers would be as follows. The biological monitors would report to the avian biologist contracted by DCRT. The avian biologist would report to DCRT. DCRT (and/or the avian biologist as approved by DCRT on a case-by-case basis) will report to the CIC/BLM. DCRT would provide avoidance buffer updates to construction contractors. In the interest of efficient and timely implementation of required nest avoidance, DCRT may also delegate the avian biologist and/or biological monitors to directly convey avoidance buffer updates to the construction contractors as appropriate.

Nest survey methods will include systematic searches as well as observations of auditory and visual cues indicating reproductive behavior (Ralph et al. 1993)—e.g., keying in on alarm calls of adults or begging calls of nestlings, visually following adults carrying nesting material or food, or visually following adults exhibiting behavior consistent with incubation/foraging cycles. Systematic searches will include visually inspecting suitable nesting locations. In some cases, a nest may not be directly observed if the suspected nest location is inaccessible due to unsafe terrain, height of the nest, dense vegetation, or some other barrier that prevents the avian biologist from safely observing the nest. The avian biologist may conclude that a nest is present or determine the nest status based on breeding behavior without locating or directly observing the actual nest.

The avian biologist will conduct a preconstruction nest survey no more than 10 days (less if practicable) prior to the start of work at any given site. Additional sweeps will occur on the first day of construction and at least once every three days during construction, as described in the subsequent paragraph. Results of the initial nest survey will be submitted to the appropriate resource agencies for review and approval (USFWS, CPUC, CDFW, AZGFD, and/or BLM) no less than 72 hours prior to construction. If a nest is detected during the preconstruction nest survey, the avian biologist will include within the nest survey report the details of each nest along with minimization and avoidance measures, and buffers implemented.

On the first day of construction at any given site during the nesting season the avian biologist and/or biological monitor will perform a preconstruction sweep to identify any new nests or nesting activity that may have been initiated since the original survey. Subsequently, for the duration of construction during the nesting season, the biological monitor will perform sweeps at each work site to look for resources, including nesting birds. The sweeps will occur at least once every three days during construction, to identify new or previously undiscovered nests, document the status (active or inactive) of previously discovered nests, and ensure that Project activities are not conducted with the buffers until the nesting cycle is complete or the nest fails.

To avoid potentially causing nest failure, care will be taken to minimize any nest disturbance caused by surveying and monitoring efforts. Nests will be monitored from a distance using binoculars or a spotting scope whenever practical. In some cases, approaching the nest may be necessary to initially find the nest and/or to gather useful information about the nest stage and/or other information related to the avian biologist's determinations. When approaching a nest or potential nest area, the biologist or monitor will first determine whether there are any potential nest predators nearby (e.g., ravens, jays, or other corvids). If no predators are observed, the surveyor will approach the nest, and will not spend any more time near the nest than necessary. The avian biologist will report any inadvertent contact or effects to birds or nests within the Project area to the BLM, AZGFD, CDFW, USFWS, and CPUC.

The status and phenology of all active nests, and observed behavior of associated birds, will be documented and summarized in weekly reports provided to the appropriate resource agencies (USFWS, CDFW, AZGFD, and/or BLM). If any inadvertent contact or effects to birds or nest occurs as a result of the monitoring or construction-related work, this will be fully described in the weekly report.

6.3 Nest Avoidance

In accordance with MM WIL-CEQA-6 and APM/BMP BIO-20, if breeding birds with active nests are found prior to or during construction, the qualified avian biologist will establish a state-specific and species-specific buffer around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. Buffers will extend not only horizontally, but also vertically in the case of helicopter work (for the same distance as the horizontal specification, unless otherwise requested by BLM, USFWS, CPUC, CDFW, or AZGFD). Buffers will be marked using signs and stakes or flagging placed at the edge of the buffer facing the work area and/or access road. Species-specific avoidance buffers are described in Section 6.3.2. Procedures to adjust buffers based on specific circumstances are described in Section 6.3.1.

6.3.1 Nest Buffer Modification Procedures

The prescribed buffers may be adjusted by the qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors.

For Project activities of any disturbance level that are inconsistent with established buffer distances, the avian biologist will evaluate the proposed activity on a case by case basis. Where appropriate, the avian biologist may work with the construction team to identify an appropriate buffer revision to prevent impacts to nesting birds while minimizing constraints on construction activities. For each proposed buffer reduction, a qualified avian biologist will be consulted and will determine whether the default species-specific buffers (Table F3-6-1) may be reduced for the specific activity and duration. The avian biologist will make this determination based on the species' natural history, and its known tolerances including those observed during nesting bird management for the Project, as well as site-specific conditions such as nesting stage, behavior of the nesting birds, microhabitat near the nest, distance to construction, type of construction activity, and anticipated duration of the activity. If recommended by the avian biologist, and approved by DCRT, a reduced buffer distance may be implemented according to the procedures outlined below.

- For non-special status species, the avian biologist or biological monitor, with the approval of DCRT and the appropriate BLM-CIC personnel, may immediately adjust the buffer distance and move the signage, stakes, or flagging to indicate the new buffer distance. The decision will be documented in the form of a Level 1 variance, and DCRT will notify the appropriate agencies (BLM, CPUC, USFWS, AZGFD, and/or CDFW) of each buffer reduction, as soon as practicable.
- For special status species, DCRT will submit a Biological Level 1 Variance request to USFWS, CDFW, and/or AZGFD for agency review and approval of any proposed buffer reduction. Agency approval would be obtained prior to adjusting the buffer.

Following adjustment of the buffer, the avian biologist or biological monitor will periodically monitor the behavior of the nesting pair, as appropriate, to assess whether the new buffer distance is sufficient to minimize the risk of reducing the reproductive success of the breeding pair. If construction is disrupting the nesting birds and agitated behaviors are observed, the buffer size will revert back to its original/full extent. The appropriate monitoring schedule would be situation-specific and would be determined in consultation with the appropriate agencies. Unless otherwise determined in consultation with the agencies, monitoring would be more or less continuous (during construction) for the first 24 hours following buffer reduction, and thereafter (assuming no signs of disturbance are observed) approximately hourly to daily depending on construction circumstances, species, stage of nesting, and observed bird behavior. Monitoring would take place using binoculars and/or a spotting scope, at a distance sufficient to avoid disturbing the nesting birds, and will include assessing the bird's response to noise as well as to visual disturbance. The qualified avian biologist will have the authority to halt construction activities and will devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. All active nests will be monitored on a weekly basis until the nestlings fledge.

6.3.2 Species-Specific Avoidance Buffers

Tolerance to disturbance can vary from one bird species to another. As required under MM WIL-CEQA-1, Table F3-6-1 lists bird species potentially nesting in or near the Project area, and for each species provides a default avoidance buffer, approximate nesting season, typical breeding habitat, typical nest location, and federal and state status of special status species. In California (per MM WIL-CEQA-6 and MM WIL-CEQA-1), the minimum standard buffer distances are 500 feet for raptors and 300 feet for other species. Note that due to MM CEQA and DRECP LUPA specifications, avoidance buffers may differ between California and Arizona, and also between BLM land in California (which is subject to DRECP LUPA measures and is also within a DFA) and other lands in California. These nest buffers adhere to appropriate mitigation measures, including APM/BMP BIO-20, MM-WIL-CEQA-1, MM-WIL-CEQA-3, MM-WIL-CEQA-7, MM-WIL-CEQA-8, DFA-BIO-IFS-1, and LUPA-BIO-IFS-12. Nest buffers for avian species listed under CESA and federal ESA as specified in the Final EIS may need to be modified from those listed in this draft Nesting Bird Management Plan in order to conform to any applicable conditions or requirements adopted by the lead agencies or permitting agencies, including conditions of the CPUC's Decision, BLM's Record of Decision, Biological Opinion, or Incidental Take Permit. In the unlikely event that a nest is found belonging to a species not listed in Table F3-6-1, for non-special status species in California a 500-foot buffer would be used for raptors and a 300-foot buffer would be used for non-raptors; for non-special status species in Arizona a (TBD)-foot buffer would be used for raptors and a (TBD)-foot buffer would be used for non-raptors; for special status species (if not listed in Table F3-6-1), a temporary buffer of 500 feet for raptors or 300 feet for non-raptors would be applied and the appropriate agencies would be contacted immediately to identify an appropriate buffer distance. For some species and circumstances, smaller buffers may be appropriate, and these buffers may be modified according to the procedures described in Section 6.3.1.

TABLE F3-6-1 BIRD SPECIES POTENTIALLY NESTING IN OR NEAR THE PROJECT AREA

STANDARDIZED AOU NAME[1]	DEFAULT CA BUFFER (in feet)	DEFAULT AZ BUFFER[4] (in feet)	APPROXIMATE NESTING SEASON[2]	TYPICAL BREEDING HABITAT[2]	TYPICAL NEST LOCATION[2]	STATUS[3]
Cinnamon Teal	300	TBD	3/25-9/15	marshes, ponds, lakes, streams	ground	-
Ruddy Duck	300	TBD	5/5-9/5	marshes, ponds, lakes	ground	-
Gambel's Quail	300	TBD	2/15-8/31	arid brushlands, washes, often with water nearby	depression on ground	-
Pied-billed Grebe	300	TBD	2/15-9/15	marshes, ponds, lakes, streams	floating nest anchored to emergent vegetation	-
Western Grebe	300	TBD	5/31-8/31	lakes, marshes	floating platform in shallow water	-
Clark's Grebe	300	TBD	5/31-8/31	Lakes, marshes	floating platform in shallow water	AZ-SGCN
Rock Pigeon	0	0	Unprotected non-native species	primarily disturbed areas	buildings and cliffs	-
Eurasian Collared-Dove	0	0	Unprotected non-native species	primarily urban/suburban areas	trees and shrubs	-
Inca Dove	300	TBD	6/25-9/15	primarily around human habitations	trees and shrubs	-
Common Ground-Dove	300	TBD	3/1-9/30	disturbed areas; dry, open, early successional	ground, bushes, or occasionally in trees	-
White-winged Dove	300	TBD	5/1-8/31	dense thorny woodlands, cactus-palo verde deserts and riparian woodlands; also, urban/suburban areas	tree branch; usually under dense canopy	-
Mourning Dove	300	TBD	2/20-9/30	generalist; primarily edges and open woodlands	ground, bushes, or trees	-
Greater Roadrunner	300	TBD	4/15-10/15	open country with scattered shrubs	bush, small tree, or cactus, 1.0-3.0 meters (m) above the ground	-
Yellow-billed Cuckoo	500	TBD	5/31-6/15	densely-vegetated, riparian woodland, patch size usually >20 ha	tree or shrub, usually 1-6 m above ground	Federally Threatened, AZ-SGCN, CA-Endangered, BLM-Sensitive, BLM-Focus Species
Lesser Nighthawk	300	TBD	4/15-8/15	deserts, agricultural areas, brushlands, washes	bare flat ground, usually in pebbly area, no nest material	-
Common Poorwill	300	TBD	5/20-9/15	open, grassy or shrubby areas in arid or semi-arid regions	eggs usually laid on bare ground, occasionally on gravel, rock, pine needles, or leaf litter	-

STANDARDIZED AOU NAME[1]	DEFAULT CA BUFFER (in feet)	DEFAULT AZ BUFFER[4] (in feet)	APPROXIMATE NESTING SEASON[2]	TYPICAL BREEDING HABITAT[2]	TYPICAL NEST LOCATION[2]	STATUS[3]
White-throated Swift	300	TBD	3/5-8/31	mountainous or hilly country, open or forested	in crevices in cliffs	-
Black-chinned Hummingbird	300	TBD	4/20-8/31	riparian woodland	in tree or shrub	-
Anna's Hummingbird	300	TBD	5/1-11/15	chaparral, riparian woodlands, savannahs, parkland, and urban and suburban environments	tree or shrub usually 2.0-6.0 m above ground	-
Costa's Hummingbird	300	TBD	1/15-6/15	Sonoran desert scrub, Mojave desert scrub	shrub or tree, usually 1.0-2.0 m above ground	-
Ridgway's able	500	TBD	3/15-9/10	freshwater marshes with stands of bulrushes and cattails	in clumps of emergent plants, in base of shrubs, or in clumps of downed dead vegetation near uplands	Federally Endangered, AZ-SGCN, BLM-Sensitive, CA-Threatened, BLM-Focus Species
Virginia Rail	300	TBD	3/10-8/10	marsh	in robust emergent vegetation (e.g., cattails, bulrush), <15 centimeters (cm) above water	-
Common Gallinule	300	TBD	4/1-8/31	permanently flooded deep marshes	anchored in emergent vegetation close to open water	-
American Coot	300	TBD	5/1-9/10	lakes, ponds, streams, wetlands	built over water on floating platforms and almost always associated with dense stands of living or dead emergent vegetation	-
Black Rail	300	TBD	3/1-9/15	salt and brackish water marshes; occurs in the lower Colorado River in areas of pickle weed thickets	in center of clumps of vegetation, at or near upper limits of marsh vegetation, well concealed; height of nest above water or ground usually low	CA-Threatened, BLM-Focus Species, AZ-SGCN, BLM-Sensitive
Black-necked Stilt	300	TBD	4/15-8/25	shallow wetlands with emergent vegetation	nest scrape in soft substrate of alkali flat, dike or island; often over water on small islands or vegetation clumps, often completely in the open	-

STANDARDIZED AOU NAME[1]	DEFAULT CA BUFFER (in feet)	DEFAULT AZ BUFFER[4] (in feet)	APPROXIMATE NESTING SEASON[2]	TYPICAL BREEDING HABITAT[2]	TYPICAL NEST LOCATION[2]	STATUS[3]
Killdeer	300	TBD	3/1-9/15	open areas, especially sandbars, mudflats, heavily grazed pastures, and human-modified habitats	on ground, usually with sparse low vegetation or no vegetation	-
Spotted Sandpiper	300	TBD	5/10-8/25	nests in a variety of habitats (shoreline, sagebrush, grassland, and forest), but only near water	on ground within 100 m (occasionally to 300 m) of water's edge. Nest is normally under or next to herbaceous vegetation that provides some shade	-
Double-crested Cormorant	300	TBD	4/15-8/31	only habitat near the Project area is along and near Colorado River.	near water, on ground, cliffs, trees, shrubs, artificial nest structures, and transmission line towers	AZ-SGCN
Least Bittern	300	TBD	5/1-8/31	freshwater and brackish marshes with dense, tall growths of aquatic or semiaquatic vegetation (particularly *Typha, Carex, Scirpus, Sagittaria*, or *Myriscus*) interspersed with clumps of woody vegetation and open water	usually 15 - 75 cm above water, among dense, tall stands of emergent or woody vegetation, <10 m from open water	-
Great Blue Heron	300	TBD	3/10-8/15	wide variety of water and wetlands	colonial nester. Near water: trees, bushes, ground, or artificial structures	-
Great Egret	300	TBD	3/20-8/1	only habitat near the Project area is along and near Colorado River	colonial nester. Near water: trees, bushes, ground, or artificial structures	AZ-SGCN
Snowy Egret	300	TBD	3/20-8/1	marshes, tidal flats, and ponds	colonial nester. Near water: trees, bushes, ground, or artificial structures	AZ-SGCN
Cattle Egret	300	TBD	4/1-10/15	usually forage near livestock; occasionally in other disturbed areas, or near margins of aquatic areas	colonial nester. medium to tall upland trees; or in low trees or shrubs in swamps; or reed vegetation in marshes, or on islands; proximity to water not a requirement	-
Green Heron	300	TBD	2/15-7/30	only habitat near the Project area is along and near Colorado River.	solitary or colonial nester; trees or shrubs; aquatic or terrestrial sites, from ground level to 10 m high	-
Black-crowned Night-Heron	300	TBD	12/1-8/1	only habitat near the Project area is along and near Colorado River.	colonial nester; Near water: trees, bushes, ground, or artificial structures	-

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Turkey Vulture	300	TBD	4/15-9/15	for nesting, prefers areas with nest sites (rock outcrops, fallen trees, abandoned buildings) isolated from human disturbance	lays eggs in dark recesses in great variety of sites: in rock outcrops, including ledges, caves, and crevices, and among tumbled boulders	-
Golden Eagle	5,280 on BLM land; 500 elsewhere	TBD	1/1-8/15	open areas, including deserts, and grasslands	cliffs, large trees, transmission structures	CA-Fully Protected, BGEPA, AZ-SGCN, BLM-Sensitive
Osprey	500	TBD	4/15-9/5	near waters that support fish; only habitat in Project area is near Colorado River	treetops, powerline structures, artificial nesting platforms. Usually near edge of water, rarely further than 0.5 kilometer (km), but occasionally as far as 14 km.	AZ-SGCN
Harris's Hawk	500	TBD	1/1-8/15	semi-open desert scrub, savanna, grassland, and wetland habitats	located in almost any relatively tall, sturdy structure. Common substrates include saguaro cacti, paloverde, and mesquite	-
Swainson's Hawk	2,640 on BLM land; 500 elsewhere	TBD	4/1-7/30	plains and hills with open vegetation. This species is not expected to nest within or near the Project area	tree or large shrub; nest often appears messier and less sturdy than other Buteo nests	CA-Threatened, BLM-Sensitive, BLM-Focus
Red-tailed Hawk	500	TBD	5/20-9/5	generalist species of open to semi-open habitats	trees, cliffs, powerline structures	-
Barn Owl	500	TBD	2/1-8/31	primarily open habitats: grasslands, deserts, marshes, and agricultural fields	cavities of wide variety in trees, cliffs, rock outcrops, caves, and river/arroyo banks; also, many human structures	-
Long-eared Owl	500	TBD	2/25-7/15	riparian and desert woodlands	stick nest built in tree by another species of bird	CA-SSC
Western Screech-Owl	500	TBD	3/1-6/30	diverse array of habitats, but most often riparian habitats with deciduous trees, including mesquite and palo verde	in tree cavities, most commonly those excavated by large woodpeckers including gilded flickers	-
Great Horned Owl	500	TBD	1/1-5/31	diverse array of habitats, usually in landscapes that are open or semi-open	stick nest built in tree or cliff by another species of bird	-

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Elf Owl	500	TBD	5/1-7/20	riparian forests, desert, woodlands	cavity nester. In woodpecker holes in saguaro cacti, or riparian woodlands (especially mature Populus-Salix-Prosopis riparian woodland with <75% tamarisk)	CA-Endangered, BLM-Sensitive
Burrowing Owl	656	TBD	2/1-8/31	utilizes burrows made by mammals in arid regions and deserts; within Project area, likely to be common only near agricultural areas and along and near Colorado River	burrows; usually existing mammal, or desert tortoise, or artificial burrowlike structure	CA-SSC, BLM-Focus Species, AZ-SGCN, BLM-Sensitive
Gila Woodpecker	1,320 on BLM land; 300 elsewhere	TBD	4/1-8/31	upper Sonoran desert in areas with stands of saguaro, riparian woodlands, and suburban areas.	excavate cavities in saguaros or mesquites	CA-Endangered, BLM-Sensitive, BLM-Focus, AZ-SGCN
Ladder-backed Woodpecker	300	TBD	4/15-7/25	deserts, desert scrub, and thorn forests	cavities built in Joshua Tree, willow, cottonwood, walnut (Juglans), oak, hackberry, pine, mesquite, or agave	-
Gilded Flicker	300	TBD	4/30-8/5	upper Sonoran Desert in areas with stands of saguaro, riparian woodlands, and suburban areas	excavate cavities in saguaros, cottonwoods, or willows	CA-Endangered, AZ-SGCN, BLM-Sensitive
American Kestrel	500	TBD	4/30-8/30	open landscapes, including agricultural areas, grasslands, and deserts	woodpecker or natural cavities in trees or cliffs	-
Peregrine Falcon	500	TBD	2/15-7/30	open country and cliffs. Sometimes inhabits urban areas; uncommon resident in southwestern Arizona	ledges on cliffs or buildings; no nest material used	AZ-SGCN
Prairie Falcon	500	TBD	3/1-7/31	open landscapes, including agricultural areas, grasslands, and deserts	ledges on cliffs	-
Western Wood-Pewee	300	TBD	5/1-8/31	woodlands and forests, especially forest edge and riparian zones	cup nest in tree	-
Southwestern Willow Flycatcher	300	TBD	5/1-8/15	early successional riparian habitats, with a dense shrub-layer	in shrub or small tree, typically 1.5 – 6.0 m above the ground	Federally Endangered, AZ-SGCN, CA-Endangered, BLM-Sensitive, BLM-Focus Species

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Black Phoebe	300	TBD	3/1-6/30	Streambanks, cattle tanks, pond	cliff or human structure; nest cemented with mud to vertical wall of site, 1.0–3.0 m above ground or high-water mark	-
Say's Phoebe	300	TBD	3/15-7/15	grassland, deserts, and agricultural land	nest woven of vegetation, placed on human structures, caves, pockets, or covered ledges on cliff faces or dirt banks; rarely cavities of trees or bushes, or nests of other species	-
Vermilion Flycatcher	300	TBD	3/5-7/15	desert scrub or deciduous riparian woodlands	typically, in trees that line riparian corridors	CA-SSC
Ash-throated Flycatcher	300	TBD	3/10-8/5	arid and semiarid scrub and open woodland, as well as riparian woodland in arid and semiarid regions	in natural cavities, woodpecker holes, nest boxes, and cavities in other human-made structures	-
Brown-crested Flycatcher	300	TBD	3/20-7/30	mature riparian woodland dominated by Fremont cottonwood, mesquite, and Gooding willow	secondary cavity nester; nests in deserted woodpecker holes or natural cavities in columnar cactus or trees	-
Cassin's Kingbird	300	TBD	4/1-8/15	wide variety of open habitats such as grasslands, desert shrub, pastures, cultivated fields, urban areas, and savannah habitats	cup nest in tree; often in isolated trees	-
Western Kingbird	300	TBD	4/15-8/1	Wide variety of open habitats such as grasslands, desert shrub, pastures, cultivated fields, urban areas, and savannah habitats	cup nest in tree; often in isolated trees	-
Loggerhead Shrike	300	TBD	2/1-7/31	open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	cup nest in tree or shrub; vegetation with thorns usually preferred, nest averages 1.0 m above ground	CA-SSC
Bell's Vireo	300	TBD	4/1-8/1	desert riparian woodlands, primarily with dense willow or mesquite; uncommon along lower Colorado River	suspended from small, lateral or terminal forks of low, pendant branches (or even horizontal parallel stems) in dense shrubs, small trees, and occasionally herbaceous vegetation	CA-Endangered, AZ-SGCN
Common Raven	300	TBD	2/15-7/15	habitat generalist	tree, cliff, transmission structure	-
Horned Lark	300	TBD	2/15-8/15	open areas with short, and/or sparse vegetation	ground	-

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Northern Rough-winged Swallow	300	TBD	4/15-7/31	variety of open and semi-open areas	burrow located in precipitous bank of clay, sand, or gravel	-
Violet-green Swallow	300	TBD	5/15-8/15	variety of open and semi-open areas	secondary cavity nester; nests in deserted woodpecker holes or natural cavities in trees or cliffs	-
Barn Swallow	300	TBD	3/31-8/31	variety of open and semi-open areas	mud nest on vertical wall, including cliffs or human structures	-
Cliff Swallow	300	TBD	3/31-8/31	variety of open and semi-open areas	mud nest on vertical wall, including cliffs or human structures	-
Verdin	300	TBD	3/1-8/25	desert scrub, chiefly in areas along washes where thorny vegetation occurs or in desert riparian zones	builds dome of sticks at periphery of bush or shrub; height typically 0.8–2.0 m; also builds smaller roosting nests during non-breeding season	-
Rock Wren	300	TBD	4/15-8/5	arid or semiarid areas with exposed rock	on ground in crevice on rocky hillside, beneath overhanging rock, or hole in large talus boulders	-
Canyon Wren	300	TBD	5/1-8/20	canyons and other areas with cliffs or rock outcrops	in rock caverns, crevices, cliffs, or banks	-
House Wren	300	TBD	4/1-7/31	riparian or other deciduous woodland; also, urban/suburban areas	secondary cavity nester, primarily in trees	-
Marsh Wren	300	TBD	3/15-7/31	emergent vegetation in marshes	average 1.0 m above ground or water in emergent vegetation	-
Bewick's Wren	300	TBD	3/15-7/31	brushy areas, scrub and thickets in open country, open and riparian woodland, and chaparral	utilize a variety of natural or woodpecker cavities, 0-10 m above ground, often surrounded by thick vegetation	-
Cactus Wren	300	TBD	3/1-9/30	desert scrub	bulky dome, usually in cactus or other thorny plant; build numerous nests as decoys, and/or for non-breeding roosts	-
Blue-gray Gnatcatcher	300	TBD	4/15-8/15	chaparral and woodland, including mesquite woodland	cup nest on limb of shrub or tree	-
Black-tailed Gnatcatcher	300	TBD	2/15-9/20	semiarid or desert scrub	cup nest in dense, thorny or leafy shrub or tree	-
Curve-billed Thrasher	300	TBD	2/15-8/15	desert scrub	cup nest in shrub, tree, or cactus	-

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Bendire's Thrasher	500 on BLM land; 300 elsewhere	TBD	3/15-7/31	dry and semi-arid washes and other areas containing shrubs, trees, and especially yucca	cup nest in shrub, tree, or cactus	CA-SSC, BLM-Sensitive, BLM-Focus Species
LeConte's Thrasher	300	TBD	2/15-6/30	flat desert areas with sparse vegetation, especially saltbush flats	cup nest in shrub, tree, or cactus	CA-SSC, AZ-SGCN, BLM-Sensitive
Crissal Thrasher	300	TBD	1/15-7/31	microphyll woodland and riparian washes, mesquite woodlands, other dense scrub vegetation	cup nest in shrub, tree, or cactus	CA-SSC
Northern Mockingbird	300	TBD	2/15-9/15	open habitats with scattered shrubs and small trees	cup nest in tree or shrub	-
European Starling	0	0	unprotected non-native species	cities, agricultural areas and other open country with mown or heavily grazed areas and scattered trees.	secondary cavity nester; often outcompetes native birds for nest sites	-
Phainopepla	300	TBD	3/1-8/15	desert riparian areas or along washes; closely associated with desert mistletoe	cup nest on tree branch or within clump of mistletoe, 2.0-5.0 m above ground	-
House Finch	300	TBD	2/15-9/1	generalist, inhabits wide variety of natural or human-modified landscapes, from desert to forest	cup nest in wide variety of substrates, including trees, shrubs, cacti, cliffs, buildings	-
Lesser Goldfinch	300	TBD	4/1-8/31	riparian woodlands and thickets, chaparral, desert oases, ranch and farmyards, and rural, urban, and suburban parks and gardens	cup nest in tree or shrub	-
Black-throated Sparrow	300	TBD	3/15-7/31	semi-open habitat with evenly spaced shrubs and trees 1–3 m high, including creosote bush flats, desert alluvial fans, canyons, washes, and desert scrub	cup nest in shrub	-
Song Sparrow	300	TBD	2/28-9/1	riparian areas with dense shrub layer	cup nest in shrub	-
Canyon Towhee	300	TBD	2/20-10/31	semiarid uplands and environments along dry watercourses to riparian mesquite woodlands	cup nest in shrub, 1.0-3.5 m above ground	-
Abert's Towhee	300	TBD	1/20-10/1	low-elevation desert riparian and desert wash habitats. Habitat includes dense vegetation, including thickets of willow, cottonwood, mesquite, and salt cedar.	cup nest in shrub, usually <2.0 m above ground	AZ-SGCN

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Rufous-crowned Sparrow	300	TBD	3/10-9/20	semiarid grassy shrublands and open woodlands on moderate to steep grassy and rocky hillsides and canyons	Cup nest on ground or occasionally <45 cm high in shrub	-
Yellow-breasted Chat	300	TBD	5/1-8/15	riparian thickets	cup nest, usually placed about 1.0 m above ground in dense thickets and shrubs	CA-SSC
Yellow-headed Blackbird	300	TBD	4/15-7/31	emergent vegetation of deep-water palustrine wetlands.	Nests constructed over deeper water, primarily in cattails (*Typha* spp.), bulrushes *(schoenoplectus* spp.), or reeds (*Phragmites* spp.)	CA-SSC
Western Meadowlark	300	TBD	3/15-8/31	wide range of grassland habitat, including agricultural areas and desert grasslands	cup nest on ground, well hidden beneath vegetation	-
Hooded Oriole	300	TBD	4/20-8/15	scattered trees, including desert oases, especially those with palms, and riparian areas with cottonwoods, willows, or sycamores	pendulous domed nest suspended from tree branch	-
Bullock's Oriole	300	TBD	3/15-7/31	riparian woodland	pendulous domed nest suspended from leaves of trees	-
Scott's Oriole	300	TBD	5/15-8/15	upper elevation deserts where yuccas are common	semi-pendulous domed nest. Most commonly associated with yucca trees, less commonly with palms	-
Red-winged Blackbird	300	TBD	3/1-8/10	marshes with emergent vegetation; also, agricultural areas and urban/suburban areas	Typically, in sturdy graminoid or shrub, from just above water level to 7.0 m high	-
Bronzed Cowbird	NA	NA	4/15-7/31	open fields, pastures, and scrubby areas	lay eggs in nests of other species	-
Brown-headed Cowbird	NA	NA	4/1-8/31	mixed habitats with open and wooded areas	lay eggs in nests of other species	-
Great-tailed Grackle	300	TBD	3/15-8/15	open areas with scattered trees and water nearby, including marshes, agricultural areas and urban areas	cup nest, suspended from small upright branches in shrub or sturdy graminoids	-
Lucy's Warbler	300	TBD	4/15-7/15	dense lowland riparian mesquite woodlands	nests behind loose bark of tree, in natural or woodpecker cavities, or in deserted nest of other species	-
Common Yellowthroat	300	TBD	4/15-7/15	wetlands with thick woody and/or herbaceous vegetation	cup nest usually ground in drier areas or just above water level in wet areas.	-

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Yellow Warbler	300	TBD	5/15-8/1	cottonwood, willow, and salt cedar riparian woodlands	cup nest in upright fork of shrub or tree, usually 1.0-3.0 m above ground, but up to 14 m	CA-SSC
Summer Tanager	300	TBD	4/15-8/31	mature cottonwood riparian woodlands along Colorado River; limited or no habitat within and near Project area	cup nest in tree, 1.0-22 m above ground	CA-SSC
Northern Cardinal	300	TBD	3/20-9/1	brushy areas, such as washes and mesquite woodlands	Cup nest in tangled vines, shrub, or tree; typically, about 1.0-3.0 m above ground	-
Blue Grosbeak	300	TBD	4/20-9/15	brushy areas, including woodland edge and early successional habitats	cup nest in shrub or tree, from 15 cm to 7.0 m above ground.	-
House Sparrow	0	0	unprotected non-native species	near human habitation and other disturbed areas	in nooks and crannies on buildings, and may build domed nests in vines on walls or in trees	-

[1] Current standardized American Ornithologist's Union names (November 2018). List is sorted in standard taxonomical order.
[2] Source: Cornell Lab of Ornithology 2018.
[3] Source: Draft EIS, Appendix 3. For additional information on special status species, see Tables F3-4-1, F3-4-2, and F3-4-3 of this APP/BBCS.
[4] TBD=to be determined.

6.4 Nesting Bird Deterrent Methods

Implementation of methods to deter or exclude birds from nesting within work areas may reduce the likelihood of avian nests becoming established within the work area, and thereby minimize risk to breeding birds as well as minimizing disruption of construction work and scheduling. Prior to implementation, DCRT will notify BLM, CPUC, USFWS, AZGFD, and/or CDFW of all deterrent or exclusion plans and obtain approval as necessary.

Nesting bird deterrent methods may include, but are not limited to the following:

- Removal of vegetation outside of the nesting season, in areas that would be directly disturbed by construction during the nesting season. All necessary vegetation clearing should be conducted outside the nesting season, to the extent practicable. And where it would not cause harm or degradation to other resources, for example soils. Because restoration of desert environments is difficult, in vegetation that is low in stature it's often recommended to not clear vegetation if construction can safely be done with minimal clearing (Personal communication, C. Fletcher, BLM, via April 2019 APP/BBCS draft review comment). Although vegetation-free construction areas are ideal for deterring nesting birds, vegetation removal will be limited to that which is necessary for construction and staging. To minimize long-term impacts to ecosystems and bird habitat, unnecessary vegetation clearing will not be conducted.
- Managing construction yard trash to avoid inadvertently providing food to birds. Effective management of food waste and other trash will be important to avoid attracting birds to construction areas. Such management measures will include daily removal of trash from the remote sites and covering trash bins located at stationary sites with tightly fitting lids (i.e., wildlife-proof containers).
- Covering staged/stored straw wattle and other potential nesting material or substrates in active construction or staging areas.
- Moving equipment, vehicles, and materials on a daily basis within an active construction area.
- Using colored gravel, such as white or red, in active construction areas, staging yards, or substations. Some ground-nesting species (e.g., plovers and nightjars) are attracted to naturally-colored gravel for concealing their eggs, which are similarly colored. Unnaturally-colored gravel which would strongly contrast with the birds' eggs, can effectively discourage nesting by these birds.
- Installing visual deterrents in active construction areas. There are a wide variety of visual deterrents that can be used to discourage birds from nesting, such as predator decoys (e.g., plastic owls) or reflective ribbon (e.g., Tangle Guard Bird Repeller Ribbon; http://www.nixalite.com/tangleguard.aspx), which provides visual and auditory discomfort to birds. Visual deterrents can be affixed to construction equipment, around the perimeter of storage yards, or on towers or other facilities as appropriate, to scare birds from the area, thereby reducing the likelihood of nesting.
- Installation of appropriate-sized tarps on construction equipment and materials. Tarps will be inspected at least once per week to identify and correct any openings that may allow cavity-nesting bird species to enter. If openings are found, the tarps will be inspected for trapped wildlife before re-closure. To avoid the risk of entanglement to birds or other animals, netting will not be used as a nesting deterrent.

- Covering the ends of pipes or other materials within which birds could nest.
- Removal of inactive nests (according to the protocols described in Section 7 below).

7 Nest Management: Inactive Nests

In conformance with APM/BMP BIO-29 and MM-WIL-CEQA-1, this APP/BBCS includes a Nest Management Plan (for inactive nests), as well as a Nesting Bird Management Plan (for active nests). Destruction of unoccupied migratory bird nests (i.e., no eggs or young present) is not a violation of MBTA (USFWS 2018). USFWS defines an active nest as one that contains viable eggs and/or chicks. A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest. Nests that are empty, contain non-viable eggs, or are being built but do not yet have an egg in them are considered inactive (USFWS 2018). Eggs will be assumed to be viable unless there are signs observed to the contrary (e.g., consistent absence of adult birds at nest over multiple days, signs of part of a clutch fledging, or timing considerations such as unhatched eggs remaining in nest longer than the expected incubation period for the species). If non-viability is suspected, questions of viability will be determined in consultation with USFWS and AZGFD or CDFW. Many species do not begin to incubate until the clutch is complete in order to facilitate synchronous hatching. These nests may appear to be unattended to a naive observer. Nests would be observed over the course of days to see if the number of eggs increases indicating that egg-laying is still in progress.

This Nest Management Plan describes the protocol to remove inactive nests in and within 500 feet of active construction and/or O&M areas, in the event that DCRT chooses to remove the nests. As some groups of birds, such as raptors, and colonial-nesting species such as swallows and herons, regularly reuse nest structures, the primary purpose of inactive nest removal is to prevent the potential reuse of these nests, which would trigger avoidance requirements during the nesting season. Inactive nests may be destroyed and dropped to the ground. No nests will be taken off site or collected. The nest location may be subsequently monitored to detect any re-nesting attempts. Re-nesting attempts may be deterred, using methods detailed below or in Section 6.4, until the bird selects an alternative nest site.

The preferable time to remove inactive nests is outside of the breeding season. If possible, nest removal would occur between August 16 and December 31 for raptors, or between September 16 and February 14 for other species. At least 24 hours prior to removal of any nests, an email notification will be sent to the appropriate agencies (USFWS and AZGFD, or CDFW and CPUC, and/or BLM). The notification will provide the details of the nest location, reason for nest removal, and species previously associated with the nest, if known. If the nest is confirmed or suspected to be associated with a special status species (see Tables F3-4-1, F3-4-2, and F3-4-3), permission must be acquired from the appropriate agencies prior to removal of the nest. Within one month following nest removal, the appropriate agencies will receive a summary of nests removed.

Though nest removal will be prioritized to occur outside of the nesting season, if practicable, there may be times when nest removal during the nesting season is desired. To ensure that only inactive nests are removed, if nest removal is sought during the breeding season the following procedures will be followed, in addition to those described above. An avian biologist will monitor each nest to be removed for a minimum of one hour, to document presence or absence of activity at the nest. For raptor nests, if the angle is such that an adult in incubating position would not be visible in the nest, then a minimum of two hours of

observation will be required. Recently fledged chicks of many species (e.g., raptors, swallows) often remain dependent on the nest for a period of time after fledging—returning to the nest periodically to roost. If the biologist observes evidence of recent fledging a longer period of observation may be necessary to confirm that the nest is inactive. For example, the nest may need to be revisited at dawn or dusk to check for roosting fledglings. If possible, the biologist will check the inside of the nest to confirm the absence of eggs or chicks in the nest. For inaccessible nests (e.g., on transmission towers), the construction team responsible for removing the nest will inspect and photograph the nest from above and provide the photograph(s) to the biologist or environmental monitor. Once the biologist or monitor confirms from the photograph that the nest is empty, the nest may be removed.

8 Burrowing Owl Nesting Management / Avoidance, Minimization, and Mitigation Plan

Avoidance and minimization measures identified in the Project Final EIS (APM/BMP BIO-25, APM/BMP BIO-30, LUPA BIO-IFS-12, LUPA BIO-IFS-13, LUPA BIO-IFS-14, MM WIL-CEQA-3, and MM WIL-CEQA-7) require DCRT to conduct preconstruction surveys for nesting burrowing owls and to implement avoidance measures for active burrows that are found. These measures include:

- In Arizona and California: APM/BMP BIO-25
- In California only: APM/BMP BIO-30, LUPA BIO-IFS-12, LUPA BIO-IFS-13, LUPA BIO-IFS-14, MM WIL-CEQA-3, and MM WIL-CEQA-7.

The purpose of this burrowing owl Nesting Management/Avoidance, Minimization, and Mitigation Plan is to describe the monitoring, avoidance, and mitigation strategy that will be implemented to avoid, minimize, and mitigate impacts to burrowing owls that could result from construction and operation of the Project.

8.1 Habitat Requirements and Occurrence Status

Burrowing owls inhabit a variety of open habitats that include grassland, shrub-steppe, desert, agricultural areas, and other grassy disturbed/ruderal areas. Habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils (CDFG 2012). Burrowing owls require the presence of a mammal burrow, desert tortoise burrow, or cavity (natural or manmade) that is the appropriate size for a nest burrow. Natural rock cavities, debris piles, culverts, and pipes also are sometimes used for nesting and roosting (CDFG 2012). Although burrowing owls can excavate holes where burrows are unavailable, they rarely do so (Thomsen 1971). Burrow availability is a major factor in defining suitable burrowing owl habitat (Coulombe 1971; Green and Anthony 1989).

Within the Project area burrowing owls are most likely to nest in valley bottoms in and around farmland at the eastern and western ends of the Project area (Stantec 2018); however, occurrence is possible throughout most of the Project area, if suitable burrows occur. The Desert Quartzite Solar project conducted extensive protocol level surveys for burrowing owls between 2012 and 2015, in an area overlapping the west end of the Ten West :Link. Up to four active burrows were documented over this time frame (Ironwood Consulting 2016), confirming that burrowing owl densities are very low across Palo Verde Mesa, southwest of Blythe, California.

8.2 Preconstruction Monitoring Procedures

8.2.1 Survey

Because burrowing owls occupy burrows year-round in this region, burrowing owl surveys will occur prior to construction regardless of the time of year. Prior to conducting a site visit, occurrence data will be acquired from AZGFD-Natural Heritage Program and the California Natural Diversity Database, to locate historical observations of burrowing owls, burrowing owl nests, desert tortoise burrows, and burrowing mammals (e.g., ground squirrels, badgers). All survey activity will be conducted by qualified avian biologist(s) knowledgeable with the species. In Arizona, surveyors will have burrowing owl survey protocol certification (training provided by AZGFD). In California, surveyors will be approved by CPUC, BLM, and CDFW. To assess potential burrowing owl habitat, the approved avian biologist(s) will conduct at least one site visit covering the entire area of proposed construction activity and surrounding areas within the appropriate avoidance buffer, depending on access/landowner permission. If lawful access to adjacent areas cannot be achieved, surveys can be performed with a spotting scope or other methods. In California, the survey area will include all areas within 492 feet of proposed construction activity, per MM-WIL-CEQA-3, MM-WIL-CEQA-7, and the California Burrowing Owl Consortium (1993) survey protocol.

Following the habitat assessment described above, and no more than 14 days prior to initial ground disturbance, DCRT will conduct a focused take avoidance survey for burrowing owls in all areas determined to have potential burrowing owl habitat that are within the appropriate avoidance buffer of planned construction activity. Surveys in Arizona will be conducted in conformance with AZGFD (2009) guidance and surveys in California will be in conformance with CDFG's 2012 Staff Report on burrowing owl mitigation, with the exception of the survey buffers, which follows the California Burrowing Owl Consortium (1993). The habitat assessment may be conducted during the same visit as the take avoidance survey or at any time prior to the take avoidance survey.

As described by CDFG (2012) and AZGFD (2009), the take avoidance survey will entail walking line transects spaced 20 meters apart in California, and 10 meters apart in Arizona. In either case, at approximately 100-meter intervals, the observer will scan the surroundings with binoculars, and listen for any calling burrowing owls. The surveyor(s) will record all burrowing owl detections and potential burrowing owl burrows, as determined by the presence of one or more of the following observations: burrowing owls, pellets, prey remains, whitewash, or decoration. Care will be taken to minimize disturbance near occupied burrows during all seasons and to avoid flushing burrowing owls. As the first few hours of the morning and last couple of hours of the afternoon provide the highest detection probabilities, an attempt will be made to utilize these times of day for surveying, to the greatest extent practicable, though surveys may be conducted at any time during daylight hours, except during inclement weather (e.g., strong wind, dense fog, or precipitation). As burrowing owls may re-colonize a site after disturbance ceases, time lapses of 14 days or more between Project activities will trigger additional rounds of take avoidance surveys prior to subsequent rounds of construction activity, including, but not limited to an additional survey within 24 hours of ground-disturbing activities. Implementation of avoidance and minimization measures would be triggered by positive owl presence.

8.2.2 Reporting

Following the habitat assessment/take avoidance survey effort, DCRT will provide a report on the survey methods and results to the BLM, AZGFD, and CDFW. The report will include the following information:

- Any avoidance or relocation recommendations for review and approval by BLM and the appropriate state agencies (AZGFD, CPUC and/or CDFW).
- A detailed map(s) showing the survey area, historical burrowing owl detections as acquired during the desktop assessment, current confirmed and potential burrowing owl burrows and detections, survey transects walked, and a delineation of areas deemed unsuitable.
- For areas deemed to have unsuitable habitat, a justification will be provided, including photograph(s) and/or a written description of one or more of the following characteristics used to rule out habitat potential: topography, land use, soil type, burrow presence/absence, and/or vegetation conditions present.
- Date, start, and end time of surveys.
- Description of weather conditions (ambient temperature, wind speed, percent cloud cover, precipitation and visibility).
- Name(s) of surveyor(s) and qualifications.
- A discussion of how the timing of the survey affected the comprehensiveness and detection probability.
- A description of survey methods used including: transect spacing, point count dispersal and duration, and any calls used.
- A description and justification of the area surveyed relative to the Project area.
- A description that includes: number of owls or nesting pairs at each location (classified as nestlings, juveniles, adults, and those of an unknown age), number of burrows being used by owls, and burrowing owl sign at burrows. Include a description of individual markers, such as bands (numbers and colors), transmitters, or unique natural identifying features. If any owls are banded, request information from the United States Geological Survey-Bird Banding Laboratory and bander to compile details regarding the known history of the banded burrowing owl(s) (age, sex, origins, whether it was previously relocated) and provide these details with the report if available.
- A description of the behavior of burrowing owls during the surveys, including feeding, resting, courtship, alarm, territorial defense, and those indicative of parents or juveniles.
- A list of possible burrowing owl predators detected and documentation of any evidence of predation upon owls.
- Signed field forms, photographs, etc., as appendices to the field survey report.
- Recent color photographs of the proposed project or activity site.
- For surveys conducted in California, original California Natural Diversity Database Field Survey Forms should be sent directly to the Department's California Natural Diversity Database office, and copies should be included in the environmental document as an appendix (http://www.dfg.ca.gov/bdb/html/cnddb.html).

8.3 Avoidance and Relocation Strategy

If preconstruction focused burrowing owl surveys determine that burrowing owls occupy the Project area, a tiered avoidance and relocation strategy will be implemented to avoid burrowing owls, relocate burrowing owls, and prevent recolonization of areas (if necessary) by burrowing owls, as outlined below. These methods generally adhere to the recommendations contained in the *Staff Report on Burrowing Owl Mitigation* currently used by CDFW to guide burrowing owl mitigation measures. The three avoidance and relocation strategy tiers incorporated in this plan are:

- Tier 1 – Avoidance Buffers
- Tier 2 – Burrow Exclusion and Passive Relocation
- Tier 3 – Prevention of Recolonization

Methods to avoid impacts to burrowing owls will take precedence over passive or active relocation. If preconstruction focused burrowing owl surveys determine that burrowing owls occupy burrows within 492 feet (150 meters) of proposed construction activities, the qualified avian biologist will assess the risk of construction activities to the burrowing owl. This risk assessment shall consider several factors, including, but not limited to, the following:

- Location of the burrow relative to planned construction activities.
- Type of burrow use (i.e., occupied nest burrow or non-nesting roost burrow that may include wintering or satellite burrows).
- Type of construction activity and level of potential disturbance.
- Timing of burrow use (e.g., occupation of a burrow after construction has been started versus prior to construction).

Based on the risk assessment, the avian biologist will determine, for each occupied burrow, whether the Project is likely to substantially impact the burrow such that injury or death of a burrowing owl could occur. Indirect impacts may be substantial if construction activities could potentially cause injury or mortality of owls, including from collisions with nearby construction equipment, vehicles, or fences. The Project biologist will have discretion in determining whether an indirect impact is substantial. Avoidance buffers can be implemented to avoid direct and substantial indirect impacts to owl burrows and individuals.

8.3.1 Nest Avoidance

To comply with MM-WIL-CEQA-3, APM/BMP BIO-30, and LUPA BIO-IFS-12, burrows occupied by owls will be buffered from disturbance. Unless otherwise authorized by the appropriate agencies (depending on location—BLM, AZGFD, CDFW, and/or CPUC), a buffer, within which no activity will be permissible, will be maintained between Project activities and nesting burrowing owls. The avoidance buffer will be TBD in Arizona and 656 feet in California.

Because burrowing owls occupy burrows year-round, including outside of the breeding season, burrows will be buffered in any season if currently occupied, whether for nesting or roosting. Burrows will be monitored by a qualified biologist using non-invasive methods to determine if a smaller buffer would be adequate to protect the occupied burrow. This

determination will be based on the risk assessment described in Section 8.3 above, as well as time of year and observed nesting phenology. A smaller buffer may be implemented, but only after consultation with and approval from CDFW or AZGFD as appropriate. This would be submitted to the BLM CIC in the form of a variance.

8.3.2 Burrow Exclusion and Passive Relocation

If there is any danger that owls will be injured or killed as a result of construction activity because occupied burrow(s) cannot be avoided on-site, the birds may be passively relocated during the non-breeding season (October 16 to March 31) using burrow exclusion, in coordination with USFWS and CDFW or AZGFD. Relocation of owls during the non-breeding season will be performed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. To avoid the potential for owls evicted from a burrow to occupy other burrows within the impact area, one-way doors will be placed in all potentially suitable burrows within the impact area when eviction occurs. These one-way doors will then be removed, and the burrows backfilled immediately prior to the initiation of grading.

Ideally, exclusion and burrow closure will be employed only where adjacent natural alternative burrows and non-impacted habitat occurs. If natural alternative burrows do not already occur in the adjacent habitat, artificial burrows will be installed prior to the exclusion.

Prior to implementing burrow exclusion, there must be verification that burrows are empty as specified below. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations. To ensure that take is avoided, biological monitoring of the occupied or potentially occupied burrow will be conducted prior to, during, and after exclusion of burrowing owls from their burrows. If the exclusion will occur immediately after the end of the breeding season, daily monitoring will be conducted for one week to confirm young of the year have fledged. Before burrow excavation, there must be verification that burrows are empty. This will be achieved through biological monitoring and burrow scoping. While the one-way doors are in place, a biologist will visit the burrows twice daily and check for evidence that owls are inside and unable to escape by looking for sign immediately inside the door and verifying that the sides of the one-way doors have not been excavated, which would allow the owl to bypass the exclusion.

If practicable, burrow excavation will be done using hand tools and backfilling to prevent reoccupation. If full visual confirmation of the burrow occupancy status cannot be achieved by means of the scope, the biologist will install corrugated piping or similar material within sections of the burrow prior to beginning excavation. Piping will be used to stabilize the burrow, prevent burrow collapse, and allow wildlife that may be present to escape the burrow during excavation if necessary. As excavation occurs, the burrow will be regularly inspected with the scope to verify that no owls or other wildlife are present, and piping will continually be re-installed for the portions of the burrow currently under excavation.

The biologist will photograph the excavation and collapsing of the burrow to document success and sufficiency.

8.3.3 Prevention of Recolonization

As practicable, the site will be rendered inhospitable to burrowing owls and fossorial mammals to avoid re-colonization until construction is complete through measures that

could include allowing vegetation to grow tall, heavy disking, or immediate, continuous grading and removal of other potential owl burrow surrogates or refugia on the site. The site will be monitored to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use and to avoid take.

8.3.4 Reporting

DCRT will develop a monthly report documenting implementation of avoidance, relocation, and monitoring for any active burrowing owl burrows detected in the survey area. This report shall be made available to the BLM, AZGFD, CPUC, and CDFW.

9 Bat Management and Protection Plan for California

Twenty-two bat species are present in the region and many of these may forage in the vicinity of the Project area, including eight special status species in California (Table F3-4-5). Monitoring and avoidance for bats will be implemented in compliance with the Final EIS avoidance and minimization measures, including: APM/BMP BIO-40, MM WIL-CEQA-4, MM WIL-CEQA-5. Each of these measures applies only within California.

9.1 Bat Roosts and Hibernacula

No known bat roosts or mines occur in or within 500 feet of the Project ROW. According to the Draft EIS, no mines, caves, or cliffs suitable for roosting are present in the Project area in California. Bat roosting may occur less commonly within trees—many species occasionally roost within tree cavities or behind large, loose flakes of bark which are likely to occur only in mature trees of relatively large species. *Lasiurus* species such as the western red bat (*L. blossevilli*) and western yellow bat (*L. xanthinus*) habitually roost (including maternity roosts) in the foliage of trees. Tree clearing during the maternity roosting season (March 1 – July 31) could result in mortality to bats if maternity roosts are destroyed or disturbed. Very few trees occur within the California portion of the Project area and tree clearing is not anticipated.

9.1.1 Survey

In conformance with MM WIL-CEQA-5, surveys for maternity roosts or hibernaculum will be conducted in California. Surveys will be conducted by a qualified bat biologist holding a CDFW collection permit and a CDFW Memorandum of Understanding allowing the handling of bats. The resume of the biologist will be provided to the CPUC and BLM for concurrence in consultation with CDFW and USFWS prior to the surveys. The bat biologist will conduct surveys for bat maternity roosts or hibernacula within 500 feet of Project activities, within 14 days prior to any grading of rocky outcrops or removal of trees with loose bark or other cavities, regardless of whether the construction disturbance occurs within the breeding season (1 March to 31 July) or the non-breeding season. Surveys will include a minimum of one day and one evening.

The methods and results of the surveys and any proposed avoidance or mitigation of roosts or hibernacula will be documented in a survey report and provided to CPUC, BLM, and CDFW for review and approval.

9.1.2 Avoidance and Mitigation

In conformance with MM WIL-CEQA-4, APM/BMP BIO-30, and APM/BMP BIO-40, the following avoidance and mitigation will be implemented to protect bat maternity roosts and hibernacula.

9.1.2.1 BLM Focus and Special Status Bat Species Maternity Roosts

Construction activities will not be sited within 500 feet of any occupied or presumed occupied maternity roost for BLM Focus or special status bat species in California. If construction activities cannot avoid these sites, construction at these sites will be delayed until the breeding cycles for the special status bats are completed. DCRT would consult with a bat specialist in order to determine when the breeding cycle for the special status bats is completed. If the maternity roost occurs within a bridge on an existing dirt or paved roadway within 500 feet of construction activities, construction may be allowed, provided that the construction activities occur only from 9:00 a.m. to 4:00 p.m. to avoid disturbance to nocturnal feedings.

9.1.2.2 Maternity Roosts with No BLM Focus or Special Status Bat Species

If an active maternity roost is found in California, the rock outcrop, structure, or tree occupied by the roost shall be avoided (i.e., not removed) by the Project if feasible. If the roost is not known or suspected to host BLM Focus or special status bat species, and avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of the CDFW, BLM, and CPUC that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required, and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roost sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described below.

If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony will be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat species requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.

9.1.2.3 Hibernacula and Non-maternity Roosts

If a bat hibernacula or non-maternity roost is found in California in a tree or structure scheduled to be removed or in crevices in rock outcrops within the grading footprint, the rock outcrop or tree occupied by the roost shall be avoided (i.e., not removed) by the Project if

feasible. If avoidance of the hibernacula or non-maternity roost is not feasible, the bats may be safely evicted, under the direction of a qualified bat biologist holding a CDFW collection permit and a CDFW Memorandum of Understanding allowing the handling of bats. If BLM Focus or special status bat species are known or suspected to occupy the hibernacula or non-maternity roost, DCRT would consult with CDFW prior to evicting the bats. The biologist may evict the bats by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week will pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern California. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified biologist will first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree will be removed, or the grading will occur the next day (i.e., there will be no less or more than one night between initial disturbance and the grading or tree removal). Eviction will not occur during times when the hibernacula are occupied by inactive, hibernating bats, as determined by the qualified bat biologist.

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ATTACHMENT A AVOIDANCE AND MINIMIZATION MEASURES

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BIO-01: Worker Environmental Awareness Program

Before starting any work, including mowing, staging, installing storm water control structures, implementing other best management practices (BMPs), removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. This Worker Environmental Awareness Program (WEAP) would include a discussion of the avoidance and minimization measures being implemented and would include information on the federal and state Endangered Species Acts (ESAs) and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special status species as well as a discussion of avoidance and minimization measures. The WEAP would provide interpretation for non-English speaking workers.

BIO-02: Biological Monitoring and Preconstruction Survey

A qualified biological monitor would be present on the Project site during all work activities within habitat of special status animal species. Multiple biological monitors would be provided so any work site within habitat of special status species is monitored concurrently if needed.

BIO-20: Migratory Bird Protection During Construction

If construction is scheduled during the nesting bird season (generally February 1 through August 31), the work area would be surveyed for birds protected under the Migratory Bird Treaty Act (MBTA) and applicable Arizona and California codes, as appropriate. Active nests identified during preconstruction surveys would require protective buffers or visual barriers to ensure compliance with those regulations. If the qualified biologist determines that construction activities would cause distress to nearby nesting birds, larger buffers or construction delays might be necessary to allow the birds to successfully fledge from the nest.

APM BIO-21: Reduction of Avian Collision and Electrocution

Current guidelines and methodologies (APLIC 2006 and 2012) would be used in the design of the proposed transmission facilities to minimize the potential for raptors and other birds to collide with the transmission line during operations and/or perch on the lines and be electrocuted. For example, aerial marker balls or other visibility markers would be placed at and near the crossing of the Colorado River to increase the visibility of the transmission line to birds using that movement corridor. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. Further, placement of lines significantly above existing transmission lines, topographic features, or tree lines would be avoided. These measures would be implemented where practicable, in conjunction with the Avian Protection Plan (APP) would include requirements for monitoring the effectiveness of anti-collision and anti-perching design.

Aerial marker balls or other visibility markers would be placed on overhead ground wires (not conductors) at crossing of the Colorado River and floodplain to increase visibility to birds using that movement corridor and marking any other static wires to improve visibility and reduce collisions. Deterrents would be added to reduce nesting and perching by ravens

and other predatory birds. The APP would include requirements for monitoring the effectiveness of anti-electrocution design.

BMP BIO-21: Reduction of Avian Collision and Electrocution

Aerial marker balls or other visibility markers would be placed on overhead ground wires (not conductors) at crossing of the Colorado River and floodplain to increase visibility to birds using that movement corridor and marking any other static wires to improve visibility and reduce collisions. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. The APP would include requirements for monitoring the effectiveness of anti-electrocution design.

BIO-25: Sensitive Animal Surveys

A survey would be conducted of the selected route prior to construction of all work areas to identify special status animal species, including Mojave desert tortoises (*Gopherus agassizii*), burrowing owls (*Athene cunicularia*), and Mojave fringe-toed lizards (*Uma scoparia*). Where possible, and as required by the Bureau of Land Management (BLM), special status species and vegetation alliances would be avoided during construction.

BIO-29: Bird and Bat Conservation Strategy

The Bird and Bat Conservation Strategy (BBCS) would provide guidance on conservation measures applicable to bird and bat species present in the Project area, including a nesting bird management plan and a nest management plan.

BIO-30: Burrowing Owl Nesting Management Plan

Plan would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14.

BIO-33 Construction Lighting

All long-term nighttime lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting, if required, would be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure. Long-term nighttime lighting would avoid the use of constant-burn lighting.

BIO-39: Bird- and Bat-Friendly Fencing

When fencing is necessary, use bird and bat compatible design standards.

BIO-40: Project Activity Siting Near Bat Maternity Roosts (applies only in California)

Activities would not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost for BLM Focus and special status bat species.

BIO-45: Protection from Loss and Harassment of Golden Eagles (applies only in California)

Provide protection from loss and harassment of active golden eagle nests through activities identified LUPA-BIO-IFS-24 through -31.

BIO-48: Flight Diverters (applies only in California)

Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by BLM, in coordination with United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), as appropriate.

REC-03: Guy Wire Marking

Plastic mesh or paint would be used to mark guy wires in areas used for recreation. Permanent high visibility guy markers would be installed during construction.

MM BIO-CEQA-2: Implement a Worker Environmental Awareness Program (applies only in California)

BMP-BIO 1 and CMA LUPA-BIO-5 shall be incorporated within this MM BIO-CEQA-2.

- Prior to any work activities on the Project site, including surveying, mobilization, fencing, grading, or construction, a WEAP shall be prepared and implemented by the Applicant. Prior to implementation the WEAP will be approved by the California Public Utilities Commission (CPUC) with a final version completed prior to the issuance of construction permits. The WEAP shall be implemented throughout the duration of Project, including operations and maintenance (O&M) phases. Successful implementation of the WEAP will result in all on-site Project personnel being properly informed and educated on the pertinent environmental concerns related to the Project. One of the main goals of the WEAP, is that it shall reduce unintentional impacts to biological resources within the Project area and ensure that all workers are trained in accordance with these mitigation measures (MM). The WEAP shall include, at a minimum, the following items: Maps showing the known locations of listed and/or special status wildlife, populations of listed and special status plants and sensitive vegetation communities, riparian habitats, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations.
- A discussion of measures to be implemented for avoidance of sensitive resources discussed in the Environmental Impact Statement (EIS; including this appendix) and the identification of an onsite contact in the event of the discovery of sensitive species on the Project site; this shall include a discussion on micro trash.
- Training materials and briefings shall include, but not be limited to: a discussion of the federal ESA and CESA; the Bald and Golden Eagle Protection Act; the MBTA; the Avian Power Line Interaction Committee (APLIC) Guidelines; the consequences of non-compliance with these regulations; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone

number in the event of the discovery of dead or injured wildlife; and a review of mitigation requirements.

- Protocols to be followed when road kill is encountered in the work area, or along access roads, and the identification of an onsite representative to whom the road kill shall be reported. Road kill shall be reported to the appropriate local animal control agency, the CPUC within 24 hours. Road kill of special status species shall also be reported to the CDFW and/or USFWS within 24 hours or otherwise specified in Project-specific permits.
- Literature and photographs or illustrations of potentially occurring special status plant and/or wildlife species shall be provided to all Project contractors and heavy equipment operators.
- A special hardhat sticker or wallet size card shall be issued to all personnel completing the training, which shall be carried with the trained personnel at all times while on the Project site.
- All new personnel shall receive this training and may work in the field for no more than five days without participating in the WEAP.
- A log of all personnel who have completed the WEAP training shall be kept on site.
- A copy of the WEAP shall be kept at an easily accessible location within the Project site (e.g., foreman's vehicle, construction trailer) for the duration of the Project.
- A standalone version of the WEAP shall be developed, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations.
- The Applicant shall ensure that interpretation of the WEAP is available for all non-English speaking workers.

MM BIO-CEQA-2 Implementation

Responsible Party: The Applicant shall ensure that a qualified biologist (approved by the CPUC) prepares the WEAP and that it is implemented for all on-site Project personnel.
Timing: Prior to construction, and during construction for all new on-site Project personnel.
Mitigation Monitoring and Reporting Program: The WEAP shall be developed by a qualified biologist designated by the Applicant and approved by the CPUC. A copy of the WEAP shall be kept at an easily accessible location within the Project site for the duration of the Project. A log of all personnel who have completed the WEAP training shall be kept on site.
Standards for Success: All construction/Project related personnel are trained in the key characteristics for identifying and avoiding impacts to special status species and sensitive habitats.

MM BIO-CEQA-3: Implement Biological Construction Monitoring (applies only in California)

APM BIO-2, BMP BIO-02, and CMA LUPA BIO-2 shall be incorporated within this MM BIO-CEQA-3.

No more than 30 days prior to the start of site mobilization or ground disturbing activities, the Applicant shall designate a qualified biologist(s) to monitor construction of the Project. Multiple qualified biologists shall be designated by the Applicant, as needed. Designated

qualified biologists must be approved by the CPUC, BLM, and CDFW prior to conducting construction monitoring. The biologist(s) must be knowledgeable with the life history and habitat requirements of federal and state listed and special status plants, mammals, reptiles, amphibians, and birds. The qualified biologist(s) shall conduct clearance surveys for listed and special status species prior to the start of construction activities each work day during initial site disturbance; clearance surveys can be conducted on a weekly basis thereafter. Any handling of special status species must be approved by the appropriate federal and state agencies and be done in accordance with species-specific handling protocols. During initial site disturbance, and for the duration of construction, the qualified biologist(s) shall remain on-site at all times when activities shall occur immediately adjacent to, or within, habitat that supports populations of listed and/or special status species. The designated biologist(s) shall relocate any terrestrial special status species that would be impacted by the Project. Permits and/or a Memorandum of Understanding may be required for some species. All locations of listed and/or special status plants shall be flagged for avoidance or salvage, relocation, or transplanting as described in MM VEG-CEQA-4. Similarly, locations of listed and/or special status wildlife shall be flagged for avoidance and appropriate avoidance buffers established as described in MM WIL-CEQA-1 through MM WIL-CEQA-11. Results of all monitoring shall be recorded on daily site observation reports and include details the construction activities. The daily monitoring reports shall be compiled and submitted to the CPUC, BLM, and CDFW for review on a weekly basis. Contents of the reports shall include at a minimum the date, time of monitoring, location, qualified biologists name, construction activities, biological conditions and species detections, and any issues encountered during the monitoring effort.

If dead or injured special status wildlife species and/or impacted special status plant are detected on the construction site, the qualified biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures shall be included within monitoring separate incident report. Species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, as well as all other appropriate Federal and State regulatory agencies, shall be contacted regarding ultimate disposal of the remains. The incident report shall be sent to the CPUC, CDFW and/or USFWS (as appropriate), as well as any other appropriate Federal and State agencies, within five calendar days. The construction biological monitoring report shall at a minimum include: the date, time of the finding or incident (if known), and location of the carcass, injured animal or other impacted species, and the circumstances of its death or injury (if known). Injured animals shall be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility.

MM BIO-CEQA-3 Implementation

Responsible Party: The Applicant is responsible for designating qualified biologists to monitor Project construction activities that are within and/or adjacent sensitive habitats, and/or have the potential to impact special status species.

Timing: During all Project phases if biological resources are pertinent or monitoring is required by the appropriate Federal or State regulatory agency.

Mitigation Monitoring and Reporting Program: Copies of daily monitoring reports shall be compiled and submitted to the CPUC, BLM, and CDFW on a weekly basis. Separate incident reports shall be compiled and submitted to the appropriate federal and state agencies if observations of dead, injured or impacted special status species are observed during monitoring within five calendar days.

Standards for Success: Sensitive biological resources are avoided and/or impacts are reduced to a less than significant level throughout all construction activities.

MM-WIL-CEQA-1: Develop and Implement an Avian Management and Protection Plan and Bird and Bat Conservation Strategy (applies only in California)

The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL CEQA-1: BMP BIO-19, APM BIO-20, APM BIO-21, BMP BIO-21, BMP BIO-29, BMP BIO-30, BMP BIO-33, BMP BIO-40, BMP BIO-45, BMP BIO-48, CMA LUPA-BIO-14, CMA LUPA-BIO-16, CMA LUPA-BIO-17, CMA LUPA-BIO-COMP-2, CMA LUPA-BIO-IFS-11, CMA-LUPA-BIO-IFS-12, CMA LUPA-BIO-BAT-1, CMA LUPA-BIO-COM-2, CMA LUPA-BIO-DUNE-5, CMA LUPA-BIO-IFS-13, CMA LUPA-BIO-IFS-14, CMA LUPA-BIO-IFS-24, CMA LUPA-BIO-IFS-25, CMA LUPA-BIO-IFS-26, CMA LUPA-BIO-IFS-27, CMA LUPA-TRANS-BIO-1, CMA LUPA-TRANS-BIO-2, and CMA LUPA-TRANS-BIO-3.

The Project Applicant shall prepare an APP and BBCS, which will also include a component for a Nesting Bird and Nest Management Plan (NBNMP), as identified in the BBCS in BMP BIO-29, in coordination with and approval by the applicable permitting/resource agencies (i.e., BLM, CDFW, USFWS, CPUC) prior to the start of construction. Additionally, the components of the Burrowing Owl Avoidance, Minimization, and Mitigation Plan (MM WIL-CEQA-3) and the Bat Management and protection Plan (MM WIL-CEQA-4) will also be included under the overarching APP/BBCS Plan. The specifics of the APP and BBCS will include the following:

- APP: The APP will follow the APLIC/USFWS 2005 APP Guidelines which specifies program design for transmission projects in order to reduce operational avian risks that result from interactions with transmission lines. This goal of this guidance is to reduce avian mortality from electrocution and collision with the transmission lines. The APP Guidelines state that although each APP developed for a specific project may be different, the overall goal of reducing avian mortality is the same across all developed APPs. The APP developed for the Project shall include, at a minimum, the following consideration and evaluation of principals identified in the APP Guidance:

    1. **Corporate policy:** Confirming the company's commitment to work cooperatively towards the protection of migratory birds.
    2. **Training:** All appropriate utility personnel, including managers, supervisors, line crews, engineers, etc. shall be properly trained in avian issues (which shall be enforced through MM BIO-CEQA-2, Implement a WEAP).
    3. **Permit Compliance:** Identify the process in which the Applicant will obtain and comply with all necessary permits related to avian issues.
    4. **Construction Design Standards**: Avian interactions shall be considered in the design and installation of the transmission line as well as during operations and maintenance of the facility. Construction configurations from the *Suggested Practices for Raptor on Power Lines; The State of the Art in 1996* and *Mitigating Bird Collisions with power Lines: The State of the Art in 1994*, or the most current editions of these documents shall be consulted during the design phase of the Project to ensure new construction is avian-safe.

5. **Nest Management:** Procedures for net management on the transmission lines shall be explained to employees during training to ensure uniform treatment of avian nest issues among personnel.
6. **Avian Reporting System:** Development of a reporting system which shall include reporting of any avian mortalities, as required by any federal or State permits. The reporting system can also help pinpoint areas of concerns by tracking both the specific locations where mortalities may be occurring, as well as the extent of such mortalities.
7. **Risk Assessment Methodology:** A focus on the areas with the highest risk to migratory birds shall be the focus of the APP and therefore, a method for evaluating the risks posed to migratory birds in a manner that identified areas and issues of particular concern shall be developed.
8. **Mortality Reduction Measures:** After completing the risk assessment, the efforts for avian protection shall be focused on areas of concern. A mortality reduction plan may need to be implemented depending on the results of the risk assessment. This approach could be implemented through direction of where monitoring should occur, where retrofits should be focused, and where new construction warrants special attention to raptor and other bird issues.
9. **Avian Enhancement Options:** In addition to taking steps to reduce mortality risk to avian species, the developed APP also may include opportunities to enhance avian populations or habitat, including developing nest platforms, managing habitats to benefit migratory birds, or working cooperatively with agencies or organizations in such efforts.
10. **Quality Control:** The developed APP may also include a mechanism to review existing practices, ensuring quality control.
11. **Public Awareness:** The developed APP shall include a method to educate the public about the avian electrocution issues, the developed APP, as well as its success in avian protection.
12. **Key Resources:** The developed APP shall identify key resources to address avian protection issues including, for example, a list of experts who may be called upon to aid in resolving avian issues.

- BBCS: The purpose of the BBCS is to outline measures/methods to minimize potential Project effects to nesting birds and avoid unauthorized take; the NBNMP (developed as a part of the BBCS) shall be approved by the above noted agencies prior to the site disturbance or preconstruction activities and be implemented by the Applicant throughout construction activities. Additionally, the current APLIC guidelines shall be incorporated into the NBNMP, which includes protections for nocturnal migrants (i.e., lighting controls) and species along the Colorado River and near agricultural fields (APLIC 2006 and 2012) (see BMP BIO-33). Specifically, these guidelines will be used to minimize the potential for attracting birds and bats to the proposed infrastructure (transmission lines and facilities). Any nighttime lighting associated with construction will be temporary and shielded in order to provide safe working conditions while limiting light spillover outside of the construction area. Implementation of APM AES-15 will also ensure that lighting, will be directed in a downward position. Preconstruction surveys shall be completed in accordance with MM WIL-CEQA-6 below and if breeding birds with active nests are found prior to or during construction, a qualified avian biologist shall establish a minimum 300-foot buffer (500 feet for raptors) around the nest and no activities

shall be allowed within the buffer(s) until the young have fledged from the nest or the nest fails (CPUC 2016). The prescribed buffers may be adjusted by a qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. Buffer reductions for listed or special status species may require coordination with the USFWS and/or CDFW. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. An avian biologist shall be responsible for documenting the results of the surveys (MM WIL-CEQA-6 below), nest buffers implemented, and the results of ongoing monitoring and shall provide a copy of the monitoring reports for impact areas to the appropriate resource agencies (i.e., USFWS and CDFW) (CPUC 2016).
If trees with nests are to be removed as part of Project construction activities, they shall be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided all trees shall be inspected for active nests by the avian biologist. If nests are found within these trees, and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors shall occur until the young have fledged the nest (CPUC 2016). At a minimum, the NBNMP shall include the following:

- Definitions of standard nest buffers for each species or group of species, depending on characteristics and conservation status for each species.
- A notification procedure for buffer distance reductions should they become necessary under special circumstances.
- A monitoring protocol including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Project-related effects to nesting birds shall be minimized.
- A protocol for documenting and reporting any inadvertent contact or effects to birds or nests.
- A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.
- A list of bird species potentially nesting on or near the Project area, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures), tolerance to disturbance (if known) and any conservation status for each species.
- A discussion of how construction of the Project has been scheduled, to avoid or minimize project impacts to nesting birds. Activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.
- Discussion on nest buffer modification or reduction guidelines, including reporting procedures to the appropriate agencies (i.e., CDFW, USFWS, and CPUC).
- Discussion on use of nest deterrents and communication protocols for on-site monitors.
- Monitoring and reporting requirements.

- Detailed noise monitoring guidelines for active breeding territories and/or nests for special status species that may occur within 500 feet of the Project area.
- Procedures for the calculation of a fee, to be reassessed every five years, to fund compensatory mitigation for bird and bat mortality impacts; this shall be based on requirements described in CMA LUPA-BIO-COMP-2.

MM WILCEQA-1 Implementation

Responsible Party: The APP/BBCS shall be developed and implemented by the Applicant and approved by the BLM, CDFW, USFWS, CPUC.
Timing: The APP/BBCS shall be prepared/approved prior to the start of construction activities and shall be implemented throughout the duration of construction. The APP specifically shall be implemented throughout the life of the Project while the BBCS shall focus on the construction and maintenance of the Project.

Mitigation Monitoring and Reporting Program: The Applicant shall retain a qualified avian biologist (approved by the CPUC) to perform monitoring surveys within 500 feet of the Project area. The qualified avian biologist shall report any inadvertent contact or effects to birds or nests within the Project area to the BLM, CDFW, USFWS, and CPUC. The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the NBNMP. This report shall be made available to the BLM, CDFW, USFWS, and the CPUC. The monitoring requirements for the APP shall conform to the APLIC Guidance including identifying and responding promptly to any avian mortality and including adaptive management for avian issues related to the Project.

Standards for Success: Adverse effects to birds shall be avoided or minimized to less than significant levels.

MM WIL-CEQA-3: Develop and Implement Burrowing Owl Avoidance, Minimization, and Mitigation Plan (applies only in California)

The following BMPs and CMAs shall be incorporated within this MM WIL-CEQA-3 and MM WIL-CEQA-7: BMP BIO-30, CMA-LUPA-BIO-IFS-12, CMA LUPA-BIO-IFS-13, and CMA LUPA-BIO-IFS-14.

The Burrowing Owl Avoidance, Minimization, and Mitigation Plan (BOAMMP) would include management direction consistent with LUPA-BIO-IFS-12, LUPA-BIO-IFS-13, and LUPA-BIO-IFS-14 and will be developed as a part of the APP/BBCS (MM WIL-CEQA-1). The Applicant shall submit a BOAMMP to BLM and CPUC for approval prior to any ground disturbing activities in California. The BLM and CPUC will include CDFW in the review process and incorporate their comments as appropriate. The BOAMMP will include direction for burrowing owls which shall include a combination of active and passive relocation efforts consistent with LUPA BIO-IFS-12, LUPA BIO-IFS-13, and LUPA-BIO-IFS-14. Any relocation shall include follow up monitoring procedures.

If burrowing owls, or burrowing owl habitat is found within the Project area during preconstruction surveys as described in MM WIL-CEQA-7, the following measures shall be implemented and enforced by the BLM and CPUC throughout construction of the Project. If preconstruction focused burrowing owl surveys determine that burrowing owls occupy the Project area, a tiered approach referred to as an Avoidance and Relocation Strategy shall be implemented to avoid burrowing owls, relocate burrowing owls, and prevent

recolonization of areas (where needed, such as construction and/or substation areas) by burrowing owls, as outlined below. These methods generally adhere to the recommendations contained in the *Staff Report on Burrowing Owl Mitigation* currently used by CDFW to guide burrowing owl mitigation measures. The four avoidance and relocation strategy tiers are:

- Tier 1 – Avoidance Buffers
- Tier 2 – Passive Relocation
- Tier 3 – Prevention of Recolonization
- Tier 4 – Active Relocation (Optional)

Methods to avoid impacts to burrowing owls shall take precedence over passive or active relocation. If preconstruction focused burrowing owl surveys determine that burrowing owls occupy the project area, including within the 150-meter buffer, the qualified Project biologist will evaluate each occupied burrow to determine whether the Project is likely to directly impact or substantially indirectly impact the burrow such that injury or death of a burrowing owl could occur. Avoidance buffers can be implemented to avoid direct and substantial indirect impacts to owl burrows and individuals. A substantial indirect impact would be a situation where even though the burrow is not directly impacted during construction, the construction activities could potentially cause injury or mortality of owls, including from collisions with nearby construction equipment, vehicles, fences, or walls. The Project biologist will have discretion in determining whether an indirect impact is substantial. If occupied burrowing owl burrows are found within the Project disturbance footprint or survey buffer during preconstruction surveys, or if burrowing owls arrive on site after construction activities commence, a qualified biologist shall assess the risk of construction activities to the burrowing owl. This risk assessment shall consider several factors, including, but not limited to, the following:

- Location of the burrow (e.g., inside the disturbance footprint, within 5.0 meters (16.4 feet) of the disturbance footprint, more than 40 meters (131.2 feet) from the disturbance footprint).
- Type of burrow use (i.e., occupied nest burrow or non-nesting roost burrow that may include wintering or satellite burrows, referred to herein simply as “roost burrow”).
- Type of construction activity and level of potential disturbance (e.g., high disturbance, such as mass grading and excavation versus low disturbance, such as painting and landscaping).
- Timing of burrow use (e.g., occupation of a burrow after construction has been started versus prior to construction).

Avoidance buffers shall be strictly required for occupied nest burrows so that nesting activities are not disturbed and nesting pairs have the opportunity to rear and successfully fledge young. Per the guidelines outlined by the *Staff Report on Burrowing Owl Mitigation*, a standard minimum avoidance buffer ranging between 200 meters (656 feet) and 500 meters (1,640 feet) will be initially applied to occupied nest sites between April 1 and October 15. Burrows will be monitored by a qualified biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW.

Establishing avoidance buffers from occupied roost burrows during October 16 through March 31 or from burrows that have been determined to not support nesting (through the

non-invasive methods cited above) during the breeding season will initially be based on the buffers described in the *Staff Report on Burrowing Owl Mitigation*. Burrows will be monitored by a qualified biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW. Roost burrows detected during preconstruction surveys fall into three categories: (1) burrows within the proposed project disturbance footprint; (2) burrows in close proximity to the disturbance footprint; and (3) burrows farther from the disturbance footprint, but still potentially within the impact area for burrowing owl.

The Applicant shall report any special status species and natural communities detected during Project surveys to the CNDDB.

MM WIL-CEQA-3 Implementation

Responsible Party: The BOAMMP shall be developed and implemented by the Applicant and approved by the BLM, CPUC, and CDFW.
Timing: The BOAMMP shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the BOAMMP. This report shall be made available to the BLM, CPUC, and CDFW.
Standards for Success: Any significant impacts to nesting or burrowing owls shall be avoided or minimized to less than significant levels.

MM WIL-CEQA-4: Develop and Implement a Bat Management and Protection Plan (applies only in California)

The following BMPs and CMAs shall be incorporated within this MM WIL CEQA-4: BMP BIO-29, BMP BIO-33, BMP BIO-40, CMA LUPA-BIO-14, CMA LUPA-BIO-16, CMA LUPA-BIO-17, CMA LUPA-BIO-BAT-1, CMA LUPA-BIO-COMP-2, CMA LUPA-BIO-DUNE-5, and CMA LUPA-TRANS-BIO-1.

The Bat Management and Protection Plan will be developed as a part of the with the BBCS (MM WIL-CEQA-1). The Bat Management and Protection Plan shall be submitted to the BLM, CPUC, and CDFW for approval prior to any ground disturbing activities. The Bat Management and Protection Plan will include direction for roosting bats and shall include, at a minimum, the following:

- If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the bats shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist. Roosts that need to be removed shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).
- If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (i.e., not removed) by the Project. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the

approval of the CDFW, BLM, and CPUC that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required, and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roosts sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above.

- If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat's requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.
- If special status bat species occur at these roosting/nursery sites, then construction activities shall avoid these sites and a surrounding buffer distance of 500 feet. If construction activities cannot avoid these sites, construction at these sites shall be delayed until the breeding cycles for the special status bats are completed. The Applicant shall consult with a bat specialist in order to determine when the breeding cycle for the special status bats is completed. The Applicant shall consult with CDFW regarding eviction of non-breeding special status bats.

  If roosting bats occur within bridges on existing dirt or paved roadways within 500 feet of construction activities, construction may be allowed, provided that the construction activities occur only from 9:00 a.m. to 4:00 p.m. to avoid disturbance to nocturnal feedings.

MM WIL-CEQA4 Implementation

Responsible Party: The Bat Management and Protection Plan shall be developed and implemented by the Applicant and approved by the BLM, CPUC, and CDFW.

Timing: The Bat Management and Protection Plan shall be prepared prior to the start of construction activities and shall be implemented throughout the duration of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop a monthly report documenting compliance with this measure and any actions taken regarding the Bat Management and Protection Plan. This report shall be made available to the BLM, CPUC, and CDFW.

Standards for Success: Any significant impacts from construction activities to bat species shall be avoided or minimized to result in less than significant levels.

MM WIL-CEQA-5: Conduct Preconstruction Surveys for Maternity Colonies or Hibernaculum for Roosting Bats (applies only in California)

The following BMPs and CMA shall be incorporated within this MM WIL-CEQA-5: APM BIO-2, BMP BIO-02, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-16, and CMA LUPA-BIO-DUNE-5.

The Applicant shall conduct surveys for roosting bats within 500 feet of Project activities, within 14 days prior to any grading of rocky outcrops or removal of trees with loose bark or other cavities. Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). The resume of the biologist shall be provided to the CPUC and BLM for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the Project. Surveys shall include a minimum of one day and one evening.

The Bat Management and Protection Plan (MM WIL-CEQA-4) shall be implemented throughout construction for any active bat roosts within the area. The Applicant shall submit documentation providing preconstruction survey results and any avoidance of roosting and nursery sites to the CPUC, BLM, and CDFW for review and approval.

MM WIL-CEQA-5 Implementation

Responsible Party: The surveys for maternity colonies or hibernaculum for roosting bats shall be completed by a qualified biologist (i.e., a biologist holding CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). **Timing:** The surveys shall be completed within 14 days prior to any grading activities or removal of trees within 500 feet of the Project.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report or technical memorandum that provides the preconstruction survey results and any avoidance of roosting and nursery sites to the CPUC, BLM, and CDFW for review and approval.

Standards for Success: Surveys for bat roosting and nursery sites are completed within the Project area and required buffer distances.

MM WIL-CEQA-6: Conduct Preconstruction Surveys for Nesting and Breeding. (applies only in California)

The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-6: APM BIO-2, BMP BIO-02, APM BIO-20, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-16, CMA LUPA-BIO-IFS-26, and CMA LUPA-BIO-RIPWET-3. The Applicant shall retain a qualified avian biologist(s) (approved by the CPUC, BLM, and CDFW) to conduct preconstruction nesting bird surveys, within the recognized breeding season (generally 15 February – 15 September [1 January – 15 August for raptors]), for all areas within 500 feet of construction activities; construction activities include mobilization, staging, grading, and/or construction. These survey dates may only be modified with the approval of CDFW and USFWS (where applicable). Measures intended to exclude nesting birds shall only be implemented with the prior approval by the CDFW and/or USFWS. If breeding birds with active nests are found prior to or during construction, the qualified avian biologist shall establish a minimum 300-foot buffer (500 feet for raptors) around the nest and

no activities shall be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. Buffer reductions for listed or special status species may require coordination with the USFWS and/or CDFW. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, implementing nest buffers, and documenting the results of ongoing monitoring by providing a copy of the monitoring reports for impact areas to the appropriate resource agencies (i.e., USFWS and CDFW). If trees with nests are to be removed as part of Project construction activities, they shall be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided, all trees shall be inspected for active nests by the avian biologist. If nests are found within these trees, and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors shall occur until the young have fledged the nest.

MM WIL-CEQA-6 Implementation

Responsible Party: The surveys for nesting and breeding avian species shall be completed by a qualified avian biologist (approved by the CPUC, BLM, and CDFW).

Timing: The surveys shall be completed within the recognized breeding season prior to construction activities for all areas within 500 feet of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report or technical memorandum that provides the preconstruction survey results and any avoidance of nesting recommended to the CPUC, CLM, and CDFW for review and approval.

Standards for Success: Nesting and breeding bird surveys are conducted within the Project site and required buffer distances prior to ground disturbing activities.

MM WIL-CEQA-7: Conduct Focused Preconstruction Burrowing Owl Surveys. (applies only in California)

To meet CEQA requirements, the following APMs, BMPs, and CMAs are incorporated within this MM BIO-CEQA-7: APM BIO-2, BMP BIO-02, BMP BIO-25, CMA DFA-BIO-IFS-1, CMA LUPA-BIO-1, CMA LUPA-BIO-12, and CMA LUPA-BIO-16. Prior to initial ground disturbance (no more than 14 days prior) the Project Applicant shall conduct focused surveys for burrowing owls within suitable burrowing owl habitat. Surveys will be completed by a qualified biologist(s) with proven burrowing owl experience. Focused burrowing owl surveys shall be conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 Staff Report; CDFG 2012), with the exception of the survey buffers, which follows the California Burrowing Owl Consortium (1993). Surveys shall be conducted by walking 20-meter transects. Preconstruction surveys shall be conducted not only within construction area, but also within a reasonable buffer around the area, generally 150 meters (492 feet). If burrowing owls, including any active burrowing owl burrows, are not found during the preconstruction survey, no further action is required.

The only exception to the above requirements would be if any given construction area has become inactive for more than 14 days. Because burrowing owls can recolonize a site after a few days, if time lapses between Project activities for 14 days or more, this shall trigger subsequent preconstruction avoidance surveys, including, but not limited to an additional survey within 24 hours of ground-disturbing activities.

MM WIL-CEQA-7 Implementation

Responsible Party: The focused preconstruction surveys for burrowing owls shall be conducted by a qualified biologist (approved by the CPUC, BLM, and CDFW).

Timing: The focused preconstruction burrowing owl surveys shall be completed no more than 14 days prior to the start of construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report of technical memorandum that provides the preconstruction survey results and any avoidance or relocation recommendations to the CPUC, BLM, and CDFW for review and approval.

Standards for Success: Burrowing owl surveys are completed within all suitable habitats in the Project area and required buffer distances.

MM WIL-CEQA-8: Conduct Preconstruction Protocol Surveys for Arizona Bell's Vireo, Southwestern Willow Flycatcher, and Willow Flycatcher; Avoid Occupied Habitat; Compensate Impacts (applies only in California)

The following APMs, BMPs, and CMAs shall be incorporated within this MM WIL-CEQA-8: APM BIO-20; APM BIO-21; BMP BIO-21; BMP BIO-29; BMP BIO-35; BMP BIO-36; BMP BIO-40; BMP BIO-48; BMP BIO-55; CMA LUPA-BIO-1; CMA LUPA-BIO-2; CMA LUPA-BIO-3; CMA LUPA-BIO-4; CMA LUPA-BIO-12; CMA LUPA-BIO-16; CMA LUPA-BIO-17; CMA LUPA-BIO-COMP-2; CMA LUPA-TRANS-BIO-1; and CMA LUPA-TRANS-BIO-2.

If Project related activities are scheduled to occur during the breeding season (generally 15 February – 15 September) the Applicant shall have a qualified avian biologist, approved by the CPUC, BLM, and CDFW, conduct protocol surveys prior to the start of construction for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher in suitable habitat within the Project area and 500 feet of disturbance areas. The surveys shall follow all current agency protocols (i.e., CDFW, USFWS). Prior to construction, documentation shall be submitted providing the results of the preconstruction focused surveys for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher to the CPUC for review and approval in consultation with USFWS and CDFW. Protocol or focused nest location surveys, as appropriate, shall be conducted within one year prior to the start of construction and shall continue annually until completion of construction and restoration activities. If an active breeding territory or nest is confirmed, the CPUC, USFWS, and CDFW shall be notified immediately. All active nests shall be monitored on a weekly basis until the nestlings fledge or the nest becomes inactive. The Applicant shall provide monitoring reports to the CPUC for review on a weekly basis. In coordination with the USFWS and CDFW, a minimum 300-foot disturbance-free ground buffer shall be established around the active nest and demarcated by fencing or flagging. No construction or vehicle traffic shall occur within nest buffers.

The qualified biologist shall have the authority to halt construction activities and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge.

Impacts and mitigation for federal- and state-listed species shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal ESA with the USFWS, and either the Section 2080 or Section 2080.1 process under the CESA with the CDFW. Additionally, direct impacts to federally-listed species' critical habitat that cannot be avoided shall also be addressed through either the federal ESA Section 7 or Section 10(a)(1)(B) process. Formal federal ESA consultation for federally-listed species that have at least a moderate potential to occur and may be impacted by the Project include the Mojave Desert tortoise, razorback sucker, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma Ridgway's rail. CESA consultation for state-listed species that have at least a moderate potential to occur and may be impacted by the Project include greater sandhill crane, Mojave Desert tortoise, razorback sucker, Swainson's hawk, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma Ridgway's rail. Additional mitigation may be required by each agency during the regulatory permitting process. Mitigation for impacts to listed species habitat shall consider and overlap with compensation for special status plants, sensitive vegetation communities, and jurisdictional waters and wetlands.

MM BIO-CEQA-8 Implementation

Responsible Party: The focused protocol surveys for Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher shall be conducted by a qualified biologist(s).

Timing: The focused surveys shall be conducted during the required protocol windows should construction activities occur between 15 February and 15 September.

Mitigation Monitoring and Reporting Program: The Applicant shall submit documentation in the form of a report of technical memorandum that provides the survey results and any avoidance or relocation recommendations to the CPUC, BLM, and CDFW for review and approval. Responsible parties for the consultation include USFWS and CDFW.

Standards for Success: Protocol Arizona Bell's vireo, southwestern willow flycatcher, and willow flycatcher surveys are completed within all suitable habitats in the Project area and required buffer distances.

LUPA-BIO-16 (California):

For activities that may impact Focus and BLM sensitive birds, protected by the ESA and/or MBTA, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity-specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities. Activity-specific measures to avoid and minimize impacts may include, but are not limited to:

- Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers.
- For activities that impact bird and bat Focus and BLM special status species, during project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the project site using the most current survey methods and best procedures available at the time.
- Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks.
- Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes.
- When fencing is necessary, use bird and bat compatible design standards.
- Using lighting that does not attract birds and bats or their prey to project sites including using non-steady burning lights (red, dual red and white strobe, strobe-like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen).
- Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.

LUPA-BIO-17 (California)

For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a BBCS will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The BBCS actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate, and may include, but is not limited to:

- Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.
- Activity-specific operational avoidance and minimization actions that reduce the level of mortality on the populations of bird and bat species, such as:
    - Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction.

The following provides the DRECP vegetation type and Focus and BLM special status species biological CMAs to be implemented throughout the LUPA Decision Area.

Riparian and Wetland Vegetation Types and Associated Species (RIPWET)

Riparian Vegetation Types

- Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub

Riparian and Wetland Bird Focus Species

- Southwestern Willow Flycatcher
- Western Yellow-billed Cuckoo
- Yuma Ridgway's Rail

LUPA-BIO-COMP-2: Birds and Bats (California)

The compensation for the mortality impacts to bird and bat Focus and BLM special status species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every five years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, a Resource Equivalency Analysis. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D of the LUPA) is used to estimate the necessary compensation fee.

Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D of the LUPA. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date Department of the Interior mitigation policy.

LUPA-BIO-IFS-11 (California)

If Bendire's thrasher is present, conduct appropriate activity-specific biological monitoring to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

LUPA-BIO-IFS-12

If burrowing owls are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656-foot (200-meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

LUPA-BIO-IFS-13

If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist through the use of one-way doors will occur according to the specifications in Appendix D or

the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

LUPA-BIO-IFS-14

Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

LUPA-BIO-IFS-24

Provide protection from loss and harassment of active golden eagle nests through the following actions: Activities that may impact nesting golden eagles, will not be sited or constructed within one mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.

LUPA-BIO-IFS-25

Cumulative loss of golden eagle foraging habitat within a one to four mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20 percent. See **CONS-BIO-IFS- 5** for the requirement in Conservation Lands.

LUPA-BIO-IFS-26

For activities that impact golden eagles, the Applicant will conduct a risk assessment per the applicable USFWS guidance (e.g., the Eagle Conservation Plan Guidance) using best available information as well as the data collected in the pre-project golden eagle surveys.

LUPA-BIO-IFS-27

If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.

LUPA-BIO-IFS-28

In order to evaluate the potential risk to golden eagles, the following activities are required to conduct two years of pre-project golden eagle surveys in accordance with USFWS Eagle Conservation Plan Guidance as follows: 1) Wind projects and solar projects involving a power tower; 2) other activities for which the BLM, in coordination with USFWS, and CDFW as appropriate, determines take of golden eagle is reasonably foreseeable or there is a potential for take of golden eagle.

LUPA-BIO-IFS-29

For active nests with recreational conflicts that risk the occurrence of take, provide public notification (e.g., signs) of the sensitive area and implement seasonal closures as appropriate.

LUPA-BIO-IFS-30

For activities where ongoing take of golden eagles is anticipated, develop advanced conservation practices per USFWS Eagle Conservation Plan Guidance.

LUPA-BIO-IFS-31

As determined necessary by BLM in coordination with USFWS and CDFW, as appropriate, for activities/projects that are likely to impact golden eagles, implement site-specific golden eagle mortality monitoring in support of the preconstruction, pre-activity risk assessment surveys.

LUPA—TRANS-BIO-1 (California)

Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the Common raven, and minimize collision risks for birds and bats.

LUPA—TRANS-BIO-2 (California)

Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by BLM, in coordination with USFWS and CDFW as appropriate, and will be based on the best available scientific and commercial data regarding the prevention of bird collisions with transmission and guy wires.

DFA-BIO-IFS-2: Implement the following setbacks shown below in Table 22 from the DRECP LUPA (see below) as applicable in the DFAs.

Table 22
Individual Species DFA Setback Requirements

Species	DFA Setbacks
Reptile	
Desert tortoise	None.
Flat-tailed horned lizard	None.
Bird	
Bendire's thrasher	Setback pre-construction, construction, and decommissioning, and other activities 500 feet from active nests.
Burrowing Owl	656 feet (200 meters) from active nesting sites.
California condor	Setback wind and transmission projects 5 miles from nest sites. Setback solar, geothermal, and other activities than may impact condors 1.5 miles from nest sites and out of direct line of site from nest sites.
Gila woodpecker	Setback pre-construction, construction, and decommissioning, and other activities that may impact the species 0.25 mile from suitable habitat during the breeding season (April 1 through July 31).
Golden eagle	Setback activities 1 mile from active or alternative nests within an active territory as described in **LUPA-BIO-IFS-24**.
Swainson's Hawk	0.5 mile from active nests.
Mammal	
Desert bighorn sheep	None.
Mohave ground squirrel	None.

2B.6 COMPENSATORY MITIGATION PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Compensatory Mitigation Plan, California

PROJECT NUMBER:
154320

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POWER ENGINEERS

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Compensatory Mitigation Plan

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TABLES:

ACRONYMS AND ABBREVIATIONS

APM	Applicant Proposed Measure
APP	Avian Protection Plan
BBCS	Bird and Bat Conservation Strategy
BIO	Biology
BLM	Bureau of Land Management
BMP	Best Management Practices
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CMAs	Conservation and Management Actions
CMP	Compensatory Mitigation Plan
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Ranking
DCRT	Delaney Colorado River Transmission, LLC
DFA	Development Focus Area
DRECP	Desert Renewable Energy Conservation Plan
EIS	Environmental Impact Statement
FESA	Federal Endangered Species Act
FP	Fully Protected
kV	kilovolt
LUPA	Land Use Plan Amendment
MM	Mitigation Measures
MSL	Mean sea level
PA	Programmatic Agreement
POD	Plan of Development
Project	Ten West Link Transmission Project
RMPs	resource management plans
ROD	Record of Decision
ROW(s)	right(s)-of-way
SCS	Series Compensation Station
SSC	Species of Special Concern
Ten West Link	Ten West Link Transmission Project
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VPL	Variance Process Lands
VRI	Visual Resource Inventory
VRM	Visual Resource Management

1 Introduction

1.1 Project Description

The Ten West Link Transmission Line Project (Project) proposed by Delaney Colorado River Transmission, LLC (DCRT) would consist of a single-circuit, series-compensated, 500 kilovolt (kV) transmission line. The Project would begin at the Delaney Substation near Tonopah, Arizona, and terminate at the Colorado River Substation near Blythe, California. The Project would be located in Maricopa and La Paz Counties in Arizona, and Riverside County in California. The Project route (Bureau of Land Management [BLM] Preferred Alternative) would parallel an existing transmission line and other linear facilities, primarily within designated utility corridors.

The BLM Preferred Alternative would span approximately 125.0 miles, including 103.4 miles in Arizona and 21.6 miles in California. Of the total length, approximately 81.2 miles would be on federal land, 17.6 miles would cross state of Arizona land, and approximately 26.2 miles would cross private land. Most of the route would cross federal land, including lands managed by the BLM and Bureau of Reclamation (79.4 miles and 1.6 miles, respectively). A 0.2-mile section of the Project would also span Department of Defense land (Yuma Proving Ground military installation).

Construction, operation, and maintenance activities would occur primarily within a 200-foot-wide right-of-way (ROW). The Project would also include upgrades at both the Delaney and Colorado River Substations in the existing footprint. Up to four staging areas would be required for material staging and laydown yards during construction. These areas would be temporary in terms of disturbance; selected based upon the final alignment chosen for this Project; and would be approximately 10 acres in size each. Currently identified staging and laydown yards occupy 34.5 acres.

The proposed support structures would be steel structures of various configurations. Tangent and small-angle steel lattice structures include self-supporting, four-legged tangent structures (i.e., structures placed where the line does not angle more than one degree); guyed-V structures with a single footing and four support guy wires; and two-legged, H-frame (steel lattice or tubular steel pole) structures as the primary structure types. Permanent guy guards/markers will be installed on guy wires for the guyed-V structures as required by BMPs and mitigation measures described in the Project Draft Environmental Impact Statement (EIS) and as summarized in Appendix B of the Plan of Development (POD). For areas of conductor tension change, large angles, and phasing transpositions, self-supporting, four-legged structures would be utilized. Steel monopoles may be used for areas of active agricultural activity and to facilitate entrance into the two substations. The transmission towers would typically be between 72 and 195 feet in height, depending on the span length required and topography, with the average tower height being approximately 160 feet. Span lengths between structures would vary from 400 to 2,300 feet, depending upon terrain conditions, current land use, structure type used, and to achieve site-specific mitigation objectives.

The transmission line will utilize three alternating current phases of conductors. The conductors are the wire cables strung between transmission line structures over which the electric current flows. The conductors within each phase will be bundled and are typically spaced approximately 18 inches apart in an equilateral triangle configuration. Conductor bundles for all structure types except the proposed monopoles would be installed

horizontal to one another (at the same height on the structure), with approximately 34 feet of spacing between the center of each conductor bundle. The static wire and optical ground wire would be approximately 30 feet above the phase conductors at the top of the structures. The minimum conductor height above ground for the transmission line would be 36.25 feet for most of the segments and 41.25 feet for the Colorado River crossing. Insulators would be used to suspend the conductors from each structure to inhibit the flow of electrical current from the conductor to the ground, the structure, or another conductor. To protect conductors from lightning strikes, two overhead ground wires would be installed on top of the structures that would transfer current from lightning strikes through the ground wires and structures into the ground. Other hardware, such as bird flight diverters, not associated with the transmission of electricity will be installed as part of the Project. This hardware may include aerial marker spheres or aircraft warning lighting, as required for the conductors or structures by Federal Aviation Administration regulations.

The Project requires a transmission line Series Compensation Station (SCS) located at the approximate midpoint of the route. The Proposed SCS site is located near the intersection of Segments i-03 and i-04 approximately two miles south of Brenda, Arizona. The SCS would be fenced and access would be restricted. The new SCS would be connected to an existing 12 kV distribution line via a new 3.13-mile-long 12 kV line.

Access to the ROW would be provided by existing roads and trails, such as those associated with the Devers to Palo Verde transmission line and nearby pipelines, to the extent practicable. Five types of access would be used for this transmission line: existing maintained public or private roads, upgraded existing roads, new centerline access, spur roads, and helicopter access. The existing roads would be used in their present condition without improvements, unless improvements are required or are deemed to be in the Project's best interest and for future use. Where existing roads can be used to access the ROW, only spur roads to each structure site would be required. Roads for access into the transmission lines would be also utilized for access to the SCS, given that the roads are adequate for the transport of materials and equipment necessary at the SCS.

After construction, Project operation and maintenance would be an ongoing activity including transmission line inspections, preventative and emergency maintenance, vegetation management including trimming and removal of vegetation within the ROW, SCS maintenance, substation maintenance, and long-term access to the ROW through general road maintenance and installation of signs and markers.

Should the ROW and facilities no longer be needed, the transmission lines and associated facilities would be decommissioned and removed. All areas of long-term disturbance would be reclaimed in accordance with a Decommissioning Plan to be developed by the ROW grant holder and approved by the BLM prior to issuance of the ROW grant. A reclamation bond would also be required per BLM bonding policy to ensure performance of reclamation activities. Access routes and other sites disturbed during decommissioning would be reclaimed and revegetated in accordance with the Decommissioning Plan.

1.2 Purpose, Need, and Plan Progression

As the lead federal agency, the BLM released the Draft EIS on August 31, 2018. Mitigation measures identified within the Draft EIS require avoidance and minimization measures to reduce Project impacts and require compensatory mitigation for residual impacts to sensitive resources. Implementation of avoidance and minimization measures are described in detail in the POD and associated plan appendices, while this Compensatory

Mitigation Plan (CMP) specifically focuses on Compensatory Mitigation. This Draft CMP is a living document, anticipated to progress through three main stages. In the current stage, this document is a compilation and summary of compensatory mitigation requirements and the approaches identified, to date, for satisfying the requirements. It identifies the mitigation approach to be used, as well as data needs, and identifies areas where discrepancies within the Draft EIS will need to be clarified. After the appropriate parties review and reach consensus on the approach (this would include, at a minimum, DCRT, BLM, California Public Utilities Commission [CPUC], California Department of Fish and Wildlife [CDFW], and United States Fish and Wildlife Service [USFWS]), the second phase will entail calculating compensatory mitigation requirements (mitigation debits) based on final engineering design and spatial analysis of impacted resources. Final compensatory mitigation calculations will be determined following analysis of pre-construction surveys, micrositing of facilities, final impact calculations, and consultation with the regulatory agencies during the environmental permitting process. After mitigation debits are calculated, the third phase will involve disseminating out the details of specific mitigation actions (credits), potentially including mitigation lands to be placed under conservation easements, locations and methods of habitat restoration efforts, specific mitigation banks, in lieu fee payments, or other compensatory mitigation actions. The Final CMP will document specific mitigation actions, calculate the anticipated mitigation credits and debits, and set up a tracking mechanism to document the ongoing balance of mitigation credits and debits in order to document sufficiency in meeting compensatory mitigation requirements.

The avoidance, minimization, and mitigation requirements associated with the EIS, California Environmental Quality Act (CEQA), and Desert Renewable Energy Conservation Plan (DRECP) and Land Use Plan Amendment (LUPA; BLM 2016) often differ between California and Arizona. Within Section 1.4 and Section 2, measures that apply only within California are listed separately from measures that apply only within Arizona and measures that apply Project-wide within Arizona and California. As such, many components and sections of this plan apply only within one state and, where applicable, that is indicated within the section heading and contents.

1.3 Applicable Regulations and Management Policies

Impacts to sensitive resources will be compensated in accordance with mitigation measures identified in the Project Draft EIS (including the CEQA mitigation measures contained in Appendix 1C of the Draft EIS), and any revisions contained in the Final EIS, Record of Decision (ROD) and ROW Grant, and the DRECP LUPA, described below.

1.3.1 Desert Renewable Energy Conservation Plan and Land Use Plan Amendment.

The DRECP LUPA was prepared to implement the Desert Renewable Energy Conservation Plan, which amends the California Desert Conservation Area (CDCA) Plan. The DRECP LUPA is applicable only to BLM-administered land in California and does not address the Colorado River corridor. The DRECP LUPA provides a landscape approach to renewable energy and conservation planning in the California Desert that streamlines the process for development of utility-scale renewable energy generation and transmission consistent with federal and state renewable energy targets and policies, while simultaneously providing for the long-term conservation and management of biological, cultural, and aesthetic resources. In addition to BLM designated sensitive species, the DRECP LUPA identifies additional “Focus” species, which it defines as species whose conservation and management are provided for in the DRECP LUPA. The DRECP LUPA

includes Conservation and Management Actions (CMAs) that establish avoidance, minimization, and mitigation requirements within the planning area, including those that are specific to Development Focus Area (DFA) allocations that the Project crosses along all BLM Preferred Segments on BLM managed land in California.

1.4 Mitigation Measures in the Final EIS that are Directly Applicable to this Plan

All Applicant Proposed Measures (APMs) and BLM-required Best Management Practices (BMPs) are listed in Appendix 2A of the Draft EIS. Additionally, Mitigation Measure (MM) BIO-01 is found in Appendix 2 of the Draft EIS. MMs required under CEQA and CMAs from the DRECP LUPA are listed in Appendix 1C of the Draft EIS. The CEQA MMs are required only within California, and the DRECP LUPA CMAs are required only on BLM land within California. Numerous APMs, BMPs, MMs, and CMAs, are applicable to avoidance, minimization, and onsite mitigation measures. The measures directly applicable to this CMP are listed below. Each of the following measures applies in California only. There are no requirements for compensatory mitigation that apply to the Arizona portion of the Project

- MM BIO-01
- APM/BMP BIO-28
- APM/BMP BIO-31
- APM/BMP BIO-46
- APM/BMP CULT-05
- MM BIO-CEQA-4
- MM BIO-CEQA-5
- MM BIO-CEQA-9
- MM BIO-CEQA-10
- MM BIO-CEQA-12
- MM BIO-CEQA-13
- MM VEG-CEQA-4
- MM WIL-CEQA-1
- MM WIL-CEQA-2
- MM WIL-CEQA-8
- MM WIL-CEQA-9
- MM WIL-CEQA-10
- MM WIL-CEQA-11
- CMA LUPA-BIO-COMP-1
- CMA LUPA-BIO-COMP-2
- CMA LUPA-BIO-COMP-3
- CMA LUPA-BIO-COMP-4
- CMA LUPA-COMP-1
- CMA LUPA-TRANS-CUL-2
- CMA DFA-VPL-BIO-COMP-1
- CMA DFA-VRM-2
- CMA DFA-VPL-CUL-2

2 Compensation Ratios and Overview of Requirements

The required compensation ratios and general compensatory mitigation requirements, as stipulated in the Project Draft EIS and DRECP LUPA, are compiled and summarized in Table 2-1. Compensatory ratios and requirements vary among the resources, and locations (California or Arizona, BLM or non-BLM land) as well as the type of impact (temporary habitat loss, permanent habitat loss, or direct mortality).

Temporary habitat loss will include structure work areas, staging areas, and temporary access routes. Areas where temporary disturbance impacts sensitive resources (as listed in Table 2-1) will be reclaimed with similar native species compositions to those present prior to construction, as described in the Reclamation, Vegetation, and Monitoring Plan (Appendix L-1 of the POD). Mitigation ratios for temporary impacts will be 1:1, except where specifically noted otherwise within this plan.

Permanent habitat loss will be associated with permanent Project features such as new structures, permanent travel surfaces of access roads, vegetation trimming for conductor clearance, and the SCS. Mitigation ratios for permanent habitat loss will range from 1:1 up to 5:1, depending on resource. Compensation would also be required for direct mortality, should it occur, to birds and bats (e.g., from electrocution or collision with shield wires or conductors). As consistent with BLM policy, compensatory mitigation for permanent habitat loss or direct mortality could include payment of an in-lieu fee; acquiring mitigation land or conservation easements; restoration or habitat enhancement activities on public lands; or a combination of these approaches.

The exact amount of compensatory mitigation required for each resource will be determined following analysis of all pre-construction surveys, micrositing of facilities, final impact calculations, and consultation with the regulatory agencies during the environmental permitting process. All created or restored habitats will be monitored per the requirements in the Reclamation, Vegetation, and Monitoring Plan (Appendix L-1 of the POD). All lands identified for preservation would require the recordation of a conservation easement. The easement could be held by the CDFW (in California) or an approved land management entity; the easement will be recorded upon purchase of the lands; refer to MM-BIO-CEQA-5 for details and requirements for easements on mitigation lands. All lands identified for preservation will require approval from the resource/permitting agencies where applicable (i.e., BLM, USFWS, Arizona Game and Fish Department, CDFW, and CPUC).

On July 24, 2018, BLM instructed its personnel, via Instruction Memorandum 2018-093, that the agency lacks authority to require monetary payments and other forms of offsite compensatory mitigation as a condition of obtaining authorization for the use of public lands. However, according to discussions between DCRT and BLM, the pre-existing DRECP-LUPA is not superseded by Instruction Memorandum 2018-093. The Project is subject to existing stipulations that require compensatory mitigation. Consistent with Instruction Memorandum 2018-093, and as an alternative to fee payments or offsite mitigation, it may be appropriate to amend the DRECP-LUPA to rescind the compensation requirements. The Final CMP will reflect any DRECP-LUPA amendments that remove or reduce compensatory requirements. This Draft CMP reflects current requirements within the DRECP LUPA, as reflected in the Draft EIS.

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TABLE 2-1 COMPENSATION RATIOS AND REQUIREMENTS

APPLICABLE AREA	RESOURCE	MITIGATION RATIO	MITIGATION COMMENTS	SOURCE
Arizona	-	-	There are no compensatory mitigation requirements for the portion of the Project within Arizona.	-
California	Temporary impacts to Jurisdictional Waters and Wetlands	1:1	On-site habitat restoration with similar species compositions to those present prior to construction, as described in the Reclamation, Vegetation, and Monitoring Plan. All mitigation for temporary impacts to jurisdictional waters/wetlands shall be approved by the appropriate federal and state regulatory agencies prior to Project activities.	MM BIO-CEQA-4
California	Permanent impacts to Jurisdictional Waters and Wetlands	2:1	Minimum of 2:1 mitigation ratio or as otherwise specified by the appropriate federal and state regulatory agencies. Permanent impacts to riparian desert woodland habitats that are jurisdictional shall be mitigated at a ratio of 5:1. Off-site creation, enhancement, and/or preservation; or participation in an established mitigation bank program. All mitigation for permanent impacts to jurisdictional waters/wetlands shall be approved by the appropriate federal and state regulatory agencies prior to Project activities. All lands identified for preservation would require the recordation of a conservation easement. Delaney Colorado River Transmission, LLC (DCRT) shall coordinate with the California Public Utilities Commission (CPUC), Bureau of Land Management (BLM) and California Department of Fish and Wildlife (CDFW) to determine the conditions of the conservation easement, including the required acreage to be conserved and the required monitoring and management of the conserved lands, as appropriate.	CMA LUPA-BIO-COMP-1, MM BIO-CEQA-4, MM VEG-CEQA-4
California	Temporary impacts to sensitive vegetation communities (blue palo verde-ironwood woodland, mesquite thickets, big galleta alliance, arrowweed alliance, and bush seepweed scrub)	1:1	On-site habitat restoration with similar species compositions to those present prior to construction, as outlined in the Reclamation, Vegetation, and Monitoring Plan. All mitigation for temporary impacts to sensitive vegetation communities shall be approved by the appropriate federal and state regulatory agencies prior to Project activities.	MM BIO-CEQA-4

APPLICABLE AREA	RESOURCE	MITIGATION RATIO	MITIGATION COMMENTS	SOURCE
California	Permanent impacts to sensitive vegetation communities (blue palo verde-ironwood woodland, mesquite thickets, big galleta alliance, arrowweed alliance, and bush seepweed scrub)	5:1	Creation, restoration, enhancement, land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization. All mitigation for permanent impacts to sensitive vegetation communities shall be approved by the appropriate federal and state regulatory agencies prior to Project activities. All lands identified for preservation would require the recordation of a conservation easement. DCRT shall coordinate with CPUC, BLM, and CDFW to determine the conditions of the conservation easement, including the required acreage to be conserved and the required monitoring and management of the conserved lands, as appropriate.	CMA LUPA-BIO-COMP-1, APM/BMP BIO-46, MM BIO-CEQA-4, MM VEG-CEQA-4
California	Temporary impacts to special status plant species	1:1	On-site habitat restoration with similar species compositions to those present prior to construction, as outlined in the Reclamation, Vegetation, and Monitoring Plan. All mitigation for temporary impacts shall be approved by the appropriate federal and state regulatory agencies prior to Project activities.	MM VEG-CEQA-4
California	Permanent impacts to special status plant species	3:1	Identification of impacts to special status plants will be based on the results of the floristic surveys. Compensation shall include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program. DCRT shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate federal and state regulatory agencies prior to Project activities.	MM VEG-CEQA-4
California	Permanent impacts to Mojave desert tortoise, including habitat loss and potential take	2:1? (per MM WIL-CEQA-10; or 3:1? Per MM WIL-CEQA-11)	MM WIL-CEQA-10 defines habitat loss as “all lands directly disturbed…that will no longer provide viable long-term habitat for the Mojave Desert tortoise. Mitigation may include off-site creation, enhancement, and/or preservation, and/or participation in an established mitigation bank program. Impacts and mitigation for the Mojave desert tortoise shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the Federal Endangered Species Act (FESA) with the United States Fish and Wildlife Service (USFWS), and either the Section 2080 or Section 2080.1	MM WIL-CEQA-10, MM WIL-CEQA-11

APPLICABLE AREA	RESOURCE	MITIGATION RATIO	MITIGATION COMMENTS	SOURCE
			process under the California Endangered Species Act (CESA) with the CDFW.	
California	Temporary impacts to Mojave fringe-toed lizard	1:1	On-site habitat restoration with similar species compositions to those present prior to construction, as outlined in Reclamation, Vegetation, and Monitoring Plan.	MM WIL-CEQA-11
California	Permanent impacts to Mojave fringe-toed lizard	3:1	Compensation may include preservation through acquisition of offsite lands with an attached conservation easement, purchase of credits from an approved mitigation ban, or onsite or offsite enhancements of habitat that support known population of Mojave fringe-toed lizard.	MM WIL-CEQA-9, MM WIL-CEQA-11
California	Temporary or Permanent impacts to potential habitat of federal or California state-listed T&E species	TBD	Impacts and mitigation for federal- and state-listed species shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the FESA with the USFWS, and either the Section 2080 or Section 2080.1 process under the CESA with the CDFW.	MM WIL-CEQA-8
California	Temporary impacts to other special status wildlife, including terrestrial herpetofauna	1:1	On-site habitat restoration with similar species compositions to those present prior to construction, as outlined in Reclamation, Vegetation, and Monitoring Plan.	MM WIL-CEQA-11
California	Permanent impacts to other special status wildlife, including terrestrial herpetofauna	2:1 or 3:1	MM WIL-CEQA-11 appears to provide conflicting guidance as to the appropriate mitigation ratio. Compensation will include: a) off-site creation, enhancement, and/or preservation, and/or b) participation in an established mitigation bank program.	MM WIL-CEQA-11
BLM land in California	Golden eagle mortality	Consistent with USFWS Eagle Conservation Plan guidance	Required to contribute to a Desert Renewable Energy Conservation Plan (DRECP)-wide golden eagle monitoring program, if the activity/project(s) has been determined, through the environmental analysis, to likely impact golden eagles. The Project is not likely to impact golden eagles, thus compensatory mitigation should not be required.	CMA LUPA-BIO-COMP-3, CMA LUPA-BIO-COMP-4
BLM land in California	Mortality to bird and bat Focus and BLM Special Status Species		Compensation will be determined based on monitoring of bird and bat mortality and a fee re-assessed every five years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, a	LUPA-BIO-COMP-2; MM WIL-CEQA-1

APPLICABLE AREA	RESOURCE	MITIGATION RATIO	MITIGATION COMMENTS	SOURCE
			Resource Equivalency Analysis. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D) is used to estimate the necessary compensation fee. Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date Department of Interior mitigation policy.	
BLM land in California	Common Raven		Compensatory mitigation would be provided that contributes to LUPA-wide raven management associated with lands in the DRECP. DCRT shall submit payment into an account established for the Project held by the National Fish and Wildlife Foundation to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or more current guidance as provided by USFWS. The contribution to the regional raven management plan will be $105 per acre impacted.	APM/BMP BIO-28, MM WIL-CEQA-2, CMA LUPA-BIO-6
BLM land in California	Cultural Resources: Effects to historic properties.		Only for the portion of the undertaking in California, the BLM will impose a compensatory mitigation fee for cumulative and indirect effects to historic properties as a result of construction. The mitigation fee will be calculated in a manner that is determined by Appendix G of the DRECP Programmatic Agreement (PA). If Appendix G of the DRECP	APM/BMP CULT-05, POD Appendix E1: Programmatic Agreement, CMA LUPA-TRANS-CUL-2, CMA DFA-

APPLICABLE AREA	RESOURCE	MITIGATION RATIO	MITIGATION COMMENTS	SOURCE
			PA has not been completed at the time the PA is executed, the BLM will develop mitigation in a manner that is commensurate to the size and regional impacts of the Undertaking, in consultation with the Consulting Parties. The BLM will have final approval of these treatment measures and the BLM will ensure that these treatment measures are described in the Historic Property's Treatment Plan All types of project-specific treatment may be considered to mitigate the specific cumulative and indirect adverse effects of the Undertaking.	VPL-CUL-2
BLM land in California	Visual: Visual Resource Inventory (VRI) Class II	1:1	The Draft EIS visual impact analysis determined that the introduction of the Project into the viewshed would not result in a scenic quality reduction of VRI Class II areas enough to lower the VRI class (e.g., from VRI Class II to VRI Class III). Therefore, no compensatory mitigation is required for visual resources.	CMA DFA-VRM-2

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3 Jurisdictional Waterways and Wetlands

The Project is not expected to directly impact wetlands, but will cross numerous dry washes, some of which will likely be Waters of the United States. As required by MM BIO-CEQA-4, all mitigation for temporary or permanent impacts to jurisdictional waters/wetlands in California shall be approved by the appropriate federal and state regulatory agencies prior to Project activities. MM BIO-CEQA-4 stipulates that temporary impacts to jurisdictional waterways and wetlands will be restored onsite at a ratio of 1:1. Although MM BIO-CEQA-4 does not explicitly specify whether it's use of the term "jurisdictional" applies to United States Army Corps of Engineers (USACE)-jurisdictional waters or to Waters of the State, the wording implies that it intended USACE-jurisdiction waters and that is the interpretation proposed to be followed within this CMP. These areas will be restored to similar species compositions to those present prior to construction, utilizing methodology described in the Reclamation, Vegetation, and Monitoring Plan (Appendix L-1 of the POD). MM BIO-CEQA-4 also stipulates that, within California, permanent impacts to jurisdictional waterways and wetlands will be mitigated at a ratio of 2:1 (which will also satisfy the 2:1 ratio stipulated for wetlands in CMA LUPA-BIO-COMP-1).

Compensatory mitigation of permanent impacts may be in the form of off-site creation, enhancement, and/or preservation; or participation in an established mitigation bank program. All created or restored habitats shall be monitored per the requirements in the Vegetation Management Plan, and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. All lands identified for preservation would require the recordation of a conservation easement. As required by MM BIO-CEQA-4, DCRT would coordinate with CPUC, BLM, and CDFW to determine the conditions of the conservation easement, including the required acreage to be conserved and the required monitoring and management of the conserved lands, as appropriate.

The specific compensatory mitigation acreage and method will be determined when final engineering design, wetland and waterway delineations, and a USACE Preliminary Jurisdictional Determination facilitate calculation of the acreage of permanent impacts to jurisdictional waterways and wetlands. Mitigation shall consider overlap with compensation for other resources.

4 Sensitive Vegetation Communities

Within California, per APM/BMP BIO-46, MM BIO-CEQA-4, MM VEG-CEQA-4, and CMA LUPA-BIO-COMP-1, permanent impacts to desert riparian woodland and other sensitive vegetation communities will be compensated at the ratio of 5:1. Specific desert riparian woodland vegetation types that may be present within the Project area include blue palo verde (*Parkinsonia florida*)-ironwood (*Olneya tesota*) woodland and honey mesquite (*Prosopis glandulosa*) thickets. Additional sensitive vegetation communities that may be present include big galleta (*Pleuraphis rigida*) alliance, arrowweed (*Pluchea sericea*) alliance, and bush seepweed (*Suaeda moquinii*) scrub.

Per MM BIO-CEQA-4 and MM VEG-CEQA-4, temporary impacts to sensitive vegetation communities in California will require on-site habitat restoration (1:1) with similar species compositions to those present prior to construction, as outlined in the Reclamation, Vegetation, and Monitoring Plan. All mitigation for temporary impacts to sensitive vegetation communities will be approved by the appropriate federal and state regulatory agencies (CPUC, CDFW, and BLM) prior to Project activities, prior to implementation.

Compensation will be identified in coordination with the appropriate federal and state regulatory agencies. Compensation requirements may be fulfilled through restoration and enhancement, land acquisition (i.e., conservation easement/preserve), an established mitigation bank program (if available), or a combination of these options, depending on the activity specifics and state and federal approval/authorization.

Off-site compensation lands would consist of habitat occupied by the impacted sensitive vegetation community(s). Off-site compensation will be documented within the Final CMP and approved in consultation with the appropriated federal and state regulatory agencies. DCRT would provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a “qualified easement holder”; CDFW is a qualified easement holder. To qualify as a “qualified easement holder” a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements for impacts to special-status species, have adopted the Land Trust Alliance’s Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. DCRT would also provide the “qualified easement holder” with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity.

Restoration or enhancement can be used to mitigate impacts and depending upon the degree of impact, habitat restoration may be as simple as removing debris and controlling public access. In more complex situations, however, partial or total restoration of degraded habitat may require extensive revegetation, and soil protection and stabilization programs. The strategy would include at a minimum: (a) BLM approved genetically and ecologically appropriate native plant materials suitable for the site; (b) a description of any required topsoil salvage, plant salvage, seeding techniques, and methods to stabilize and shape soil surface to reduce soil erosivity; (c) monitoring and reporting protocols; and (d) success criteria. Restoration would be tailored to the specific project site based on the habitat and species involved.

Any restoration or enhancement for sensitive vegetation communities would be monitored to assess progress and to make recommendations for successful management. Monitoring would be performed by a qualified biologist/botanist designated by DCRT. At a minimum, Monitoring would include qualitative and quantitative methods as described in the Vegetation Management Plan and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. Monitoring would identify the need for remediation or maintenance work well in advance of final success/failure determination. Monitoring and maintenance progress toward achieving success criteria, conditions, and all observations pertinent to eventual success would be documented in the Post-Construction Vegetation Management Quarterly Monitoring Progress Reports, and the Annual Post-Construction Vegetation Management Report, as described in the Vegetation Management Plan.

The specific compensatory mitigation acreages and method will be determined in coordination with the appropriate federal and state regulatory agencies when final route selection and engineering design facilitates calculation of the acreage of permanent impacts to sensitive plant communities. Mitigation shall consider overlap with compensation for other resources.

5 Special Status Plant Species

5.1 Species with Potential to Occur

Per MM VEG-CEQA-4 impacts to special status plant species in California will be mitigated. For the purposes of this mitigation, special status plants are defined as those with a California Rare Plant Ranking (CRPR) of 1 or 2 and/or BLM sensitive species. Table 5-1 below, adapted from Table 3.4-5 in the Draft EIS, lists the special status species identified in the Draft EIS as having potential to occur in the Project area in California. Many of the species are unlikely to occur. Per BMP BIO-24 and MM VEG-CEQA-2, special status plant surveys will be conducted prior to construction. They are currently scheduled to be conducted in 2020. Temporary and permanent impacts will be assessed based on the results of the floristic surveys and final engineering design.

TABLE 5-1 SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA IN CALIFORNIA*

Common Name	Scientific Name	Status (California/BLM)	Habitat
Euphorbia abramsiana	Abrams' spurge	CRPR: 2B.2	Sandy soils in Mojave desert scrub and Sonoran desert scrub from 5 to 915 meters (15 to 3,000 feet) above MSL. Annual herb. Blooms September to November. Has been found north of Interstate 10 near McCoy Mountains and could occur within or near biological Project area in creosote bush association with sandy soil.
Hymenoxys odorata	Bitter hymenoxys	CRPR: 2B.1	Occurs in sandy soils in riparian scrub and Sonoran desert scrub from 45 to 150 meters (147 to 492 feet) above MSL. Annual herb. Blooms February to November. Low potential to occur along Colorado River and in woodland washes within Project area.
Teucrium cubense ssp. depressum	Dwarf germander	CRPR: 2B.2	Occurs in Desert dunes, playa margins and Sonoran desert scrub from 45 to 400 meters (147 to 1,312 feet) above MSL. Annual herb. Blooms March to November. Has not been found in or near Project area but could occur on sandy soils there and in surrounding region.
Euphorbia platysperma	Flat-seeded spurge	CRPR: 1B.2 BLM: Sensitive	Sonoran deserts scrub habitats with sandy soils and dunes below 200 meters (660 feet) above MSL. Could occur on sandy soils within or near Project area but has not been found there.
Ditaxis claryana	Glandular ditaxis	CRPR: 2B.2	Perennial herb that prefers low-elevation sandy soils in Mojave and Sonoran desert creosote scrub habitats in southern California below 100 meters (328 feet) above MSL. Could occur within or near Project area but has not been found there.
Astragalus sabulonum	Gravel milkvetch	CRPR: 2B.2	Occurs in desert dunes and Mojave/Sonoran desert scrub from –53 to 910 meters (–173 to 2,985 feet) above MSL. Annual herb. Blooms February to July. Could occur within or near Project area but has not been found there.
Eriastrum harwoodii	Harwood's eriastrum	CRPR: 1B.2 BLM: Sensitive	Occurs in Desert dunes from 125 to 915 meters (410 to 3,001 feet) above MSL. Annual herb. Blooms March to June. This species has been found on stabilized dunes and other sandy soils in the biological Project area.
Astragalus insularis var. harwoodii	Harwood's milkvetch	CRPR: 2B.2	Occurs in sandy or gravelly soils along desert dunes and Mojave desert scrub below 710 meters (2,329 feet) above MSL. Annual herb. Blooms January to May. This species has been found in the biological Project area.

Common Name	Scientific Name	Status (California/BLM)	Habitat
Colubrina californica	Las Animas colubrina	CRPR: 2B.3	Perennial deciduous shrub found in Mojave and Sonoran desert scrub and Joshua Tree woodland. Preferred habitat includes sandy, gravelly soils and dry canyons from 10 to 1,000 meters (32 to 3,280 feet) above MSL. Blooms April to June. Has been found north of Interstate 10 near McCoy Mountains but not within Project area. Unlikely to occur in sandy soil within Project area.
Calliandra eriophylla	Pink fairy-duster	CRPR: 2B.3	Perennial deciduous shrub associated with dry wash woodlands in the Sonoran Desert from 120 to 1,500 meters (393 to 4,921 feet) above MSL. Blooms January to March. Low potential to occur in desert woodlands within Project area.
Carnegiea gigantea	Saguaro	CRPR: 2B.2	Large perennial succulent and signature species of Sonoran desert scrub. Known to prefer gravelly slopes and rocky soils on mountains or bajadas. Blooms May to June. Could occur in desert woodlands and upper slopes surrounding Project area.

* Adapted from Table 3.4-5 in the Draft EIS. Includes plant species with a CRPR of 1 or 2.
CRPR = California Rare Plant Ranking
MSL = mean sea level
1A = Plants presumed extirpated in California and either rare or extinct elsewhere
1B = Plants rare, threatened, or endangered in California and elsewhere
2A = Plants presumed extirpated in California, but common elsewhere
2B = Plants rare, threatened, or endangered in California, but more common elsewhere
0.1 Seriously endangered in California
0.2 Fairly endangered in California
0.3 Not very endangered in California

5.2 Mitigation for Impacts

All mitigation shall be approved by the appropriate federal and state regulatory agencies (CPUC, CDFW, and BLM) prior to Project activities.

Temporary impacts to special status plant species in California will require on-site habitat restoration (1:1) with similar species compositions to those present prior to construction, as outlined in the Reclamation, Vegetation, and Monitoring Plan.

According to MM VEG-CEQA-4, permanent impacts to special status plant species will require compensatory mitigation at a ratio of 3:1.

Compensation will be identified in coordination with the appropriate federal and state regulatory agencies. Compensation requirements may be fulfilled through restoration and enhancement, land acquisition (i.e., conservation easement/preserve), an established mitigation bank program (if available), or a combination of these options, depending on the activity specifics and state and federal approval/authorization.

Off-site compensation lands would consist of habitat occupied by the impacted special status plant species at the appropriate ratio of acreage and the number of plants for any occupied habitat affected by the Project. Occupied habitat will be calculated on the Project site and on the compensation lands as including each special-status plant occurrence. Off-site compensation will be documented within the Final CMP and approved in consultation with the appropriated federal and state regulatory agencies.

The Proponent shall provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a “qualified easement holder”; CDFW is a qualified easement holder. To qualify as a “qualified easement holder” a private land trust must have substantial experience managing open space/conservation

easements that are created to meet mitigation requirements for impacts to special-status species, have adopted the Land Trust Alliance's Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. The Proponent shall also provide the "qualified easement holder" with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity.

For special-status plant restoration or enhancement activities, several techniques may be applied including salvage, propagation and off-site introduction, and restoration.

Salvage: DCRT will consult with the designated qualified biologist/botanist, as well as the appropriate federal and state regulatory agencies, regarding the feasibility and likely success of salvage efforts for each special-status plant species. If salvage is deemed to be feasible, then DCRT will incorporate salvage measures into the Project-specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, which shall be approved by the appropriate federal and state regulatory agencies prior to implementation.

Propagation and Off-Site Introduction: If salvage and relocation is not believed to be feasible for one or more impacted species, then DCRT will consult with the appropriate federal and state agencies, as well as other qualified entities if needed, to develop an appropriate experimental propagation and relocation strategy, based on the life history of the species affected. The strategy will include at minimum: (a) a planting methodology including strategies for species specific collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d); time of year that the salvage and other planting or transplantation practices will occur; (e) irrigation; (f) erosion controls; (g) success criteria; and (h) a detailed monitoring program. All propagation and off-site introduction strategies shall be documented in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan for the Project.

Restoration: Restoration may be used to mitigate impacts and depending upon the degree of impact, habitat restoration may be as simple as removing debris and controlling public access. In more complex situations, however, partial or total restoration of degraded habitat may require extensive revegetation, and soil protection and stabilization programs. The strategy will include at a minimum: (a) BLM approved genetically and ecologically appropriate native plant materials suitable for the site; (b) a description of any required topsoil salvage, plant salvage, seeding techniques, and methods to stabilize and shape soil surface to reduce soil erosivity; (c) monitoring and reporting protocols; and (d) success criteria. Restoration would be tailored to the specific site based on the habitat and species involved.

All mitigation for special-status plant species will be monitored to assess progress and to make recommendations for successful establishment. Monitoring will be performed by a qualified biologist/botanist designated by DCRT. At a minimum, monitoring will include qualitative and quantitative methods as described in the Vegetation Management Plan and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. Monitoring shall identify the need for remediation or maintenance work well in advance of final success/failure determination. Monitoring and maintenance progress toward achieving success criteria, conditions, and all observations pertinent to eventual success shall be documented in the Post-Construction Vegetation Management Quarterly

Monitoring Progress Reports, and the Annual Post-Construction Vegetation Management Report, as described in the Vegetation Management Plan. In addition to the Vegetation Management Plan annual and quarterly reporting specifications, reporting for mitigation monitoring and maintenances shall also include progress reports that: (a) estimated species survival; (b) species health and overall vigor; (c) the establishment of volunteer native species; (d) topographical/soils conditions; (e) problem weed species; (f) the use of the site by wildlife; (g) significant drought stress; and (h) recommended remedial measures deemed necessary to ensure compliance with specified success criteria.

If federally- and/or state-listed plant species are identified within Project disturbance areas, then impacts and mitigation will be addressed through either the Section 7 or Section 10(a)(1)(B) process under the Federal Endangered Species Act (FESA) with the USFWS, and either the Section 2080 or Section 2080.1 process under the California Endangered Species Act (CESA) with the CDFW. Consultation with the appropriate resource agencies would be required to develop acceptable mitigation prior to construction.

The specific compensatory mitigation acreages and method will be determined in coordination with the appropriate federal and state regulatory agencies when final route selection and engineering design facilitates calculation of the acreage of impacts. Mitigation shall consider overlap with compensation for other resources.

6 Special Status Wildlife

6.1 Mojave Desert Tortoise

Mojave desert tortoise (*Gopherus agassizii)* is a federally-listed threatened species that is known to occur in desert scrub on the Palo Verde Mesa of California southwest of the Colorado River Substation. Designated critical habitat occurs outside the Project area, approximately three miles west of the substation, and will not be impacted.

The Mojave Desert Tortoise Protection and Compensation Plan details the avoidance, minimization, and onsite mitigation measures to be implemented to protect Mojave Desert tortoise. Currently it appears that there are no measures within the Final EIS requiring mitigation for temporary impacts to Mojave desert tortoise habitat. MM WIL-CEQA-11 states that: “With the exception of desert tortoise, compensation for temporary impacts to special-status terrestrial herpetofauna (including Couch’s spadefoot toad and Mojave fringe-toed lizard) potential/modeled habitat shall include on-site habitat restoration at a minimum 1:1 ratio.” Impacts and mitigation for the Mojave desert tortoise shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the FESA with the USFWS, and either the Section 2080 or Section 2080.1 process under the CESA with the CDFW.

MM WIL-CEQA-10 requires a 2:1 mitigation ratio for permanent impacts to Mojave desert tortoise, including habitat loss and potential take. MM WIL-CEQA-11 appears to provide conflicting guidance, indicating that “compensation for permanent impacts to desert tortoise and special-status wildlife on-site surveyed habitat shall include a) off-site creation, enhancement, and/or preservation, and/or b) participation in an established mitigation bank program at a minimum 3:1 ratio”. It is anticipated that the conflict between these requirements will be resolved prior to issuance of the ROD, and that the mitigation ratio requirements will be clearly presented within the ROD. MM WIL-CEQA-10 defines habitat loss as “all lands directly disturbed…that will no longer provide viable long-term habitat for

the Mojave Desert tortoise." Compensation for permanent impacts may include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program such as the National Fish and Wildlife Foundation. The Proponent shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate federal and state regulatory agencies prior to Project activities.

DCRT will fund or acquire, protect and transfer two acres of Mojave Desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands. DCRT will acquire the land, in fee or in easement, within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

- Be within the appropriate Habitat Unit or, if sufficient land is unavailable, in other locations within approved by the appropriate federal and state regulatory agencies.
- Provide habitat for Mojave Desert tortoise with capacity to regenerate naturally when disturbances are removed.
- Be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation.
- Be connected to lands with Mojave Desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover.
- Not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible.
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration.
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat.
- Have water and mineral rights included as part of the acquisition, unless consultation with the appropriate federal and state agencies occurs and there is an agreement in writing to the acceptability of land.

The DRECP provides two habitat models for Mojave desert tortoise habitat. The first model is a 2009 model created by the United States Geological Survey (Nussear et al. 2009; DRECP 2019a), models a continuous surface of habitat suitability from 0 (non-habitat) to 1 (habitat), with areas greater than 0.6 being considered predicted occupied habitat. In this model, the habitat suitability ranges from 0-0.2 in the eastern portions of the Palo Verde Mesa, up to 0.2-0.4 at and near the Colorado River Substation—not within the range of predicted occupied habitat. The other model provided by the DRECP was created in 2012 by combining additional data to refine the United States Geological Survey model and

provide a binary output (suitable habitat or not habitat; DRECP 2019b). According to the more recently refined binary model, there is not any suitable Mojave desert tortoise habitat within the Project area, thus compensatory mitigation may not be necessary. In conformance with MM WIL-CEQA-10 and MM WIL-CEQA-11, DCRT will retain a designated qualified biologist to assess for Mojave Desert tortoise habitat. The results of those surveys, along with final engineering design, will be used to determine the mitigation requirements for Mojave Desert tortoise habitat loss.

The specific compensatory mitigation acreages and method will be determined in coordination with the appropriate federal and state regulatory agencies when final route selection and engineering design facilitates calculation of the acreage of permanent impacts to sensitive plant communities. Mitigation shall consider overlap with compensation for other resources.

6.2 Impacts to Federally or California-listed Threatened and Endangered Species

Formal FESA consultation for federally-listed species that have potential to occur and may be impacted by the Project include the Mojave Desert tortoise, razorback sucker, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma Ridgway's rail. CESA consultation for state-listed species that have potential to occur and may be impacted by the Project include greater sandhill crane, Mojave Desert tortoise, razorback sucker, Swainson's hawk, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma Ridgway's rail. Mitigation may be required by each agency during the regulatory permitting process, and would be incorporated in this CMP prior to construction. The specific compensatory mitigation acreages and method will be determined in coordination with the appropriate federal and state regulatory agencies when final route selection and engineering design facilitates calculation of the acreage of permanent impacts to sensitive plant communities. Mitigation shall consider overlap with compensation for other resources.

6.3 Mojave Fringe-toed Lizard

Mojave fringe-toed lizard (*Uma scoparia*) is a BLM-sensitive species that inhabits sparsely vegetated dunes, flats, riverbanks and washes with fine, loose sand. This species is common on sandy soils on the Palo Verde Mesa within the Project area. The Fringe-Toed Lizard Linear ROW Protection Plan describes the potential for Mojave fringe-toed lizard to occur in the Project area, including known occurrences, location of potential suitable habitat. It also details the avoidance, minimization, and onsite mitigation methods proposed to protect Mojave fringe-toed lizard.

Mitigation for Mojave fringe-toed lizard will take into account overlap with mitigation for other resources, particularly Harwood's eriastrum, as the two species are associated with similar habitat.

In compliance with MM WIL-CEQA-11, temporary impacts to Mojave fringe-toed lizard potential/modeled habitat will require on-site habitat restoration with similar species compositions to those present prior to construction, as outlined in the Reclamation, Vegetation, and Monitoring Plan.

For permanent habitat loss and direct impacts to Mojave fringe-toed lizards, MM WIL-CEQA-10 requires compensatory mitigation at a ratio of 3:1. DCRT will coordinate with

CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation will be approved by the appropriate federal and state regulatory agencies prior to Project activities. Compensation may include preservation through acquisition of offsite lands with an attached conservation easement, purchase of credits from an approved mitigation ban, or onsite or offsite enhancements of habitat that support known population of Mojave fringe-toed lizard. Off-site compensation lands and/or established mitigation bank program would be identified, if available, in coordination with the appropriate federal and state regulatory agencies.

On all acquired lands, DCRT would provide for open space/conservation easements or provide the required funds for the acquisition of easements to a “qualified easement holder”; the CDFW is a qualified easement holder. To qualify as a “qualified easement holder” a private land trust must have substantial experience managing open space/ conservation easements that are created to meet mitigation requirements, have adopted the Land Trust Alliance’s Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. DCRT would also provide the “qualified easement holder” with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity.

The compensation lands selected for acquisition will meet the following criteria:

- Be deposits of Aeolian or fine windblown sands typically associated with dunes, washes, hillsides, and margins of dry lakes, with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat.
- To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard.
- To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation.
- Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed.
- Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible.
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration.
- Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat.
- Not be subject to property constraints (i.e., mineral leases, cultural resources).
- Be on land for which long-term management is feasible.

The specific compensatory mitigation acreages and method will be determined in coordination with the appropriate federal and state regulatory agencies when final route selection and engineering design facilitates calculation of the acreage of permanent impacts to sensitive plant communities. Mitigation shall consider overlap with compensation for other resources.

6.4 Impacts to Other Special Status Wildlife

Table 6-2 below summarizes the status and habitat information for each special status wildlife species (that was not covered above) with potential to occur in the California portion of the Project. Many, but not all, of the special status species in Table 6-2 have DRECP habitat models identifying potential habitat. The models are coarse in scale and do not appear likely to reliably represent suitable habitat distribution for most species. After the final route is selected, prior to construction, it may be appropriate to conduct a Project-scale field-based habitat assessment for special status wildlife species in California, to validate and/or refine the existing coarse-scale models in support of implementation of compensatory mitigation.

6.4.1 Terrestrial Herpetofauna

Compensation for impacts to Mojave Desert tortoise and Mojave fringe-toed lizard are discussed above in Section 6.1 and Section 6.3. MM WIL-CEQA-11 requires compensatory mitigation for other special status herpetofauna in California. According to the Draft EIS, other special status herpetofauna with potential to occur within the Project area in California include Couch's spadefoot toad (*Scaphiopus couchii*), Sonoran desert toad (*Bufo alvarius*), and Sonoran mud turtle (*Kinosternon sonoriense*). Couch's spadefoot is associated with desert upland and cropland/hedgerow, as well as aquatic environments. According to the Draft EIS they have a high potential to occur in and near ephemeral pools and agricultural areas in the eastern portion of Project area in California. The Sonoran desert toad occurs in a variety of upland habitats within several miles of permanent or temporary water sources. These upland habitats include creosote bush desert scrub, and the edges of agriculture. The Sonoran mud turtle inhabits aquatic environments and are rare along the lower Colorado River.

In compliance with MM WIL-CEQA-11, temporary impacts to potential/modeled habitat for special status terrestrial herpetofauna will require on-site habitat restoration with similar species compositions to those present prior to construction, as outlined in the Reclamation, Vegetation, and Monitoring Plan.

Impacts in California to the habitat of special status wildlife species (that are not already covered above) will be mitigated, per MM WIL-CEQA-11, at a minimum mitigation ratio of 2:1. MM WIL-CEQA-11 appears to provide conflicting guidance as to the appropriate mitigation ratio, as detailed below in Section 6.4.2. It is anticipated that the conflict between these requirements will be resolved prior to issuance of the ROD, and that the mitigation ratio requirements will be clearly presented within the ROD. Compensation will be identified in coordination with the appropriate federal and state regulatory agencies (CPUC, CDFW, and BLM), and may include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program.

DCRT would provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a "qualified easement holder"; CDFW is a qualified easement holder. To qualify as a "qualified easement holder" a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements for impacts to special-status species, have adopted the Land Trust Alliance's Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. DCRT would also provide the "qualified easement holder" with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting

endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity.

The specific compensatory mitigation acreages and method will be determined in coordination with the appropriate federal and state regulatory agencies when final route selection and engineering design facilitates calculation of the acreage of permanent impacts to sensitive plant communities. Mitigation shall consider overlap with compensation for other resources.

6.4.2 All Other Special Status Wildlife Habitat

Clarification is needed from CPUC regarding three statements within MM WIL-CEQA-11: *Conduct Pre-construction Surveys for Listed and Special-Status Terrestrial Herpetofauna and Compensation for Impacts.* The three statements are specifically:

- *Compensation for permanent impacts to desert tortoise and special-status wildlife on-site surveyed habitat shall include: a) off-site creation, enhancement, and/or preservation; and/or b) participation in an established mitigation bank program at a minimum 3:1 ratio.*

- *Compensation for temporary and permanent impacts for all other special-status wildlife habitat shall include a combination of: a) on-site habitat creation or enhancement with similar species compositions to those present prior to construction; b) off-site creation, enhancement, and/or preservation, and/or; c) participation in an established mitigation bank program at a 2:1 minimum ratio.*

- *With the exception of desert tortoise, compensation for temporary impacts to special-status terrestrial herpetofauna (including Couch's spadefoot toad and Mojave fringe-toed lizard) potential/modeled habitat shall include on-site habitat restoration at a minimum 1:1 ratio.*

Five issues associated with these three statements require clarification in order to interpret mitigation requirements for the preparation of this CMP:

- The 3:1 ratio identified in the first statement seems to contradict the 2:1 mitigation ratio for Mojave desert tortoise identified in MM WIL-CEQA-10.

- It is not clear what if any difference there is between "special-status wildlife on-site surveyed habitat" in the first statement (requiring 3:1 mitigation ratio) and "all other special-status wildlife habitat" in the second statement (requiring 2:1 mitigation ratio).

- It is not clear if "special-status wildlife" refers to all special status wildlife (e.g., mammals, birds), or if it only refers to special status terrestrial herpetofauna. The latter interpretation seems more consistent with the rest of the content of MM WIL-CEQA-11: *Conduct Pre-construction Surveys for Listed and Special-Status Terrestrial Herpetofauna and Compensation for Impacts*.

- Depending on which species each of the statements is intended to apply to, the second statement may conflict with the third statement regarding the appropriate mitigation ratio for temporary impacts.

- The third statement explicitly excludes desert tortoise (in California) from the 1:1 mitigation requirement for temporary impacts. There does not appear to be any other APM, BMP, or MM in the Final EIS requiring mitigation for temporary impacts to Mojave desert tortoise, which would make it unique among resources requiring compensatory mitigation.

TABLE 6-2 SPECIAL STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA IN CALIFORNIA[1]

SCIENTIFIC NAME	COMMON NAME	STATUS [2]	HABITAT INFORMATION
Scaphiopus couchii	Couch's spadefoot	California: SSC BLM: Sensitive	Desert, arid, and semi-arid shrublands/chaparral, shortgrass plains, cropland/hedgerow, savanna. High potential to occur in and near ephemeral pools and agricultural areas in eastern portion of Project area in California.
Bufo alvarius	Sonoran desert toad	California: SSC	Occurs in a variety of habitats including creosote bush desert scrub, grasslands, along major river corridors, and the edges of agriculture. Generally, within several miles of permanent or temporary water sources.
Uma scoparia	Mojave fringe-toed lizard	California: SSC BLM: Sensitive	Sparsely vegetated dunes, flats, riverbanks and washes with fine, loose sand. This species is common on sandy soils within the Project area.
Kinosternon sonoriense	Sonoran mud turtle	California: SSC	Usually found in rocky streams, creeks, and rivers. It also inhabits ponds, cattle tanks, and ditches. Within Project area, rare along lower Colorado River.
Taxidea taxus	American badger	California: SSC	Agricultural land, grassland, and other open areas and brush lands with sparse groundcover. This species has been detected near the Project area.
Myotis occultus	Arizona myotis	California: SSC	Ponderosa pine and oak-pine woodland near water and wooded riparian areas in desert areas.
Macrotus californicus	California leaf-nosed bat	California: SSC BLM: Sensitive	Lowland desert scrub roosting in caves, abandoned mine tunnels and rock shelters in canyon walls.
Myotis velifer	Cave myotis	California: SSC BLM: Sensitive	Evergreen or pine-oak forest and pine forest at mid-high elevations and riparian habitats near desert scrub at lower elevations.
Sigmodon arizonae plenus	Colorado River cotton rat	California: SSC	Riparian thickets, dense grass cover, drier grassy areas. Likely rare or absent along Colorado River in Project area.
Felis concolor brownii	Yuma mountain lion	California: SSC	From mountains to valley bottoms where prey is abundant. Absent or very rare in Project area.
Ovis canadensis nelson	Desert bighorn sheep	California: FP BLM: Sensitive BLM: Focus Species	Canyons, hills, and mountains in rough terrain throughout the southwestern United States. There is no habitat for this species within the Project area.
Antrozous pallidus	Pallid bat	California: SSC BLM: Sensitive	Deserts and grasslands, mostly near rocky outcrops and water. Roosts in rock crevices.
Nyctinomops femorosaccus	Pocketed free-tailed bat	California: SSC	Rocky canyons with outcroppings and high cliffs. Roosts in rock crevices and caves. Observed near shrubland, mixed tropical deciduous forest, and floodplains with sycamore and mesquite with nearby high cliffs.

SCIENTIFIC NAME	COMMON NAME	STATUS [2]	HABITAT INFORMATION
Corynorhinus townsendii	Townsend's big-eared bat	California: SSC BLM: Sensitive	Near the entrance of caves, mine tunnels, and other well-ventilated areas. Night roosts can include caves as well as buildings and tree cavities. Potential foraging habitat exists along the Colorado River and in adjacent agricultural fields, and it is likely that this species is present in the area at least occasionally.
Lasiurus xanthinus	Western yellow bat	California: SSC	Roosts in trees, including woodland and riparian habitat.
Myotis yumanensis	Yuma myotis	BLM: Sensitive	Riparian, desert scrub, moist woodlands, and forests, typically near open water.
Toxostoma bendirei	Bendire's thrasher	California: SSC BLM: Sensitive BLM: Focus Species	Rare or uncommon during summer, dry and semi-arid washes and other areas containing shrubs, trees, and especially yucca. Unlikely to occur in Project area.
Athene cunicularia	Burrowing owl	California: SSC BLM: Sensitive BLM: Focus Species	Open grasslands, savannas and plains with mammal burrows. Occasionally in vacant lots. This species has been detected within the Project area.
Toxostoma crissale	Crissal thrasher	California: SSC	Microphyll woodland and riparian washes, mesquite woodlands, other dense scrub vegetation. Uncommon year-round resident in region.
Aquila chrysaetos	Golden eagle	California: FP Eagle Protection Act BLM: Sensitive BLM: Focus Species	Open areas, plains, and mountains throughout North America. This species is not known to nest or forage in the vicinity of the Project area in California, and the Palo Verde Mesa offers low prey availability.
Toxostoma lecontei	Le Conte's thrasher	California: SSC	Vegetated washes and desert scrub with saltbush, shadscale, cholla cacti, or other species suitable for nesting. This species has been detected within or near the Project area.
Asio otus	Long-eared owl	California: SSC	Uncommon to rare year-round resident in riparian and desert woodlands throughout deserts of southern California. There are no stands or riparian trees or large desert woodlands within the Project area that would be suitable habitat for this species.
Lanius ludovicianus	Loggerhead shrike	California: SSC	Year-round resident in open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. This species has been detected in or near the Project area.
Charadrius montanus	Mountain plover	California: SSC BLM Sensitive	Winters in and near cultivated fields along lower Colorado River. Could occur uncommonly within and near cultivated fields.
Circus cyaneus	Northern harrier	California: SSC	Grasslands, flat areas, and hills with open habitat. This species has been detected within or near the Project area.
Asio flammeus	Short-eared owl	California: SSC	Rare in open areas, fields, and wetlands. Unlikely to occur in Project area.
Setophaga petechia sonorana	Sonora yellow warbler	California: SSC	Cottonwood, willow, and salt cedar riparian woodlands. Limited habitat within the Project area.
Piranga rubra	Summer tanager	California: SSC	Summer resident in mature cottonwood riparian woodlands along Colorado River. Limited or no habitat within and near Project area.

SCIENTIFIC NAME	COMMON NAME	STATUS [2]	HABITAT INFORMATION
Pyrocephalus rubinus	Vermilion flycatcher	California: SSC	Cropland, cultivated lands, desert, shrubland, riparian woodlands near water. Could occur uncommonly near cultivated fields.
Icteria virens	Yellow-breasted chat	California: SSC	Summer resident in dense, early successional riparian woodlands and thickets with willows, salt cedar, vine tangles, and dense brush with well-developed understories and some overstory for perches.
Xanthocephalus xanthocephalus	Yellow-headed blackbird	California: SSC	Freshwater wetlands with open water and dense, emergent vegetation. Foraging in fields and open cultivated areas. Could occur uncommonly along Colorado river and among agricultural fields.

[1] Specific mitigation requirements have not been determined and may not be required for all species.
Table is adapted from Table 3.4-8 and Table 3.4-14 in the Draft EIS.
[2] BLM = Bureau of Land Management
FP = Fully Protected
SSC = Species of Special Concern
BLM Focus Species = as designated under the DRECP LUPA

6.5 Bird and Bat Mortality

The DRECP LUPA emphasizes conservation related to wind and solar energy development, as well as transmission. Among the larger biological impacts of wind, and to some extent solar, development are bird and bat collision fatalities. Transmission lines are known to result in bird and bat mortality from collision and/or electrocution, though with the implementation of BMPs, the transmission line fatalities are anticipated to be much fewer than what are typically observed at wind and solar facilities. In compliance with mitigation measures specified in the DRECP LUPA, the Draft EIS requires assessment of and compensatory mitigation for bird and bat mortality that occurs as a result of the Project.

6.5.1 Bird and Bat Monitoring to Facilitate Estimates of Mortality

MM-WIL-CEQA-1 includes a requirement to provide "*procedures for the calculation of a fee, to be reassessed every five years, to fund compensatory mitigation for bird and bat mortality impacts; this shall be based on requirements described in CMA LUPA-BIO-COMP-2*". LUPA-BIO-COMP-2, which is applicable to the Project on BLM land in California, states that compensatory mitigation for mortality impacts to bird and bat DRECP Focus and BLM Special Status Species will be determined based on monitoring of bird and bat mortality, and that a fee will be re-assessed every five years to fund compensatory mitigation. It goes on to state that "*Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required."* And that "*The initial compensation fee for bird and bat mortality impacts is to be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity."*

The proposed monitoring strategy is described in The Draft Avian Protection Plan/Bird and Bat Conservation Strategy (APP/BBCS; Appendix F3 of the POD), and will include, at a minimum, two years of standardized post-construction bird and bat fatality monitoring; an opportunistic avian reporting system for avian and bat mortalities detected during standard operation and maintenance activities, nest searching and monitoring for all protected birds; nest surveys specifically for golden eagles and other raptors; species-specific surveys for burrowing owls; roost surveys for bats; presence/absence surveys for willow flycatcher and

Bell's vireo; and presence/absence surveys for Ridgway's rail if suitable habitat is present. Additional preconstruction surveys may be conducted if determined necessary through discussions with BLM and CDFW. The monitoring results would be used to estimate mortality impacts and calculate compensatory mitigation requirements for mortalities occurring on BLM land in California.

6.5.2 Species That May Require Compensatory Mitigation

Bird and bat Focus and BLM Sensitive Species analyzed in the Draft EIS that would require mitigation for mortality on BLM land in California are listed below along with the anticipated occurrence likelihood/relative abundance within the Project area on BLM land in California. The occurrence likelihood/relative abundance is based on DRECP habitat models (DRECP 2019a and 2019b), eBird data (eBird 2019), aerial imagery, vegetation cover type information presented in the Draft EIS, and the professional opinion of the biologist/plan author. Additional information about each species status and habitat associations may be found within Tables 6-1 and 6-2. Species that would require mitigation are:

- Birds
    - Southwestern willow flycatcher—very unlikely to occur (within the Project area on BLM land in California)
    - Yuma Ridgway's rail—very unlikely to occur
    - Arizona Bell's vireo—very unlikely to occur
    - California black rail—very unlikely to occur
    - Elf owl—unlikely to occur
    - Gila woodpecker—unlikely to occur
    - Gilded flicker—unlikely to occur
    - Greater sandhill crane—unlikely to occur
    - Swainson's hawk—may occur uncommonly
    - Western yellow-billed cuckoo—very unlikely to occur
    - Bendire's thrasher—unlikely to occur
    - Burrowing owl—may occur uncommonly
    - Golden eagle—may occur uncommonly
    - Mountain plover—may occur uncommonly
- Bats—Bat fatalities have rarely been reported under power lines.
    - California leaf-nosed bat—may occur
    - Cave myotis—unlikely to occur
    - Pallid bat—may occur
    - Townsend's big-eared bat—may occur uncommonly
    - Yuma myotis—may occur uncommonly

6.5.3 A Priori Fatality Predictions

It is likely that the Project will not result in any mortality to bird and bat DRECP Focus and BLM Special Status Species for the following reasons. None of the DRECP Focus and BLM Sensitive bird species are anticipated to commonly occur within the California portion of the Project area, and many of the species are very unlikely to occur. Bat fatalities have only rarely been reported under power lines and likely do not occur in substantial numbers. DCRT will implement numerous BMPs as recommended by the Avian Power Line Interaction Committee and described within the APP/BBCS, including but not limited to the following:

- The Project transmission line conductor spacing will exceed the necessary avian-safe separation distance which will greatly reduce the probability of electrocution.
- The transmission line will be collocated with an existing transmission line (Devers-Palo Verde 1) for much of its length, including the Colorado River Crossing.
- At the Colorado River Crossing, the Project will match spans and conductor height with the existing line to the greatest extent practicable.
- Conductor bundles for all structure types except the proposed monopoles would be installed horizontal to one another (at the same height on the structure), and the two ground wires would be horizontal to one another, approximately 30 feet above the conductors.
- Permanent guy guards/markers will be installed on all guy wires for the guyed-V structures.
- The Project's ground wires and any other static wires will be marked with marker balls or other flight deterrents at the crossing of the Colorado River and its floodplain and within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water.
- To minimize potential bird collisions with Project fencing, all newly constructed fences will utilize high visibility fencing or will be marked to increase visibility of the top wire.
- Surveys for, and avoidance of, active nests.

It is likely that most or all bird or bat fatalities will be common, non-Special-Status species. Monitoring and avoidance of nesting birds is anticipated to prevent mortality to eggs or nestling birds during construction.

Given all the above considerations, the most reasonable a priori estimate for the first five-year period is that the Project would not cause any mortality for each of the above species.

6.5.4 Calculation of Compensation for Bird and Bat Mortality.

The mortality estimates will be reassessed every five years based on the results of fatality monitoring, which will be conducted using the methodologies described in the APP/BBCS. If at one of the five-year reassessments mortality has been documented or estimated to occur to any DRECP Focus or BLM Sensitive species, compensation will be satisfied by

restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the mortality impact. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance).

The approach to calculating the operational bird and bat compensation would involve measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D of the DRECP LUPA) is used to estimate the necessary compensation fee.

Based on the description of analysis methods found in Appendix D of the DRECP LUPA, it appears that "bird year" losses and gains were estimated using species maximum longevity, rather than the more appropriate metric of annual survival rate, thus yielding questionable estimates of life expectancy. More importantly, it is not clear why the "bird years" should differ (in a generalizable and predictable way) between a bird life that is "lost" and a bird life that is "gained," and indeed the estimates provided in DRECP LUPA Appendix D for DRECP Focus species result in statistically identical "bird year" estimates for "losses" and "gains," i.e., the range of estimates for "lost bird years" for each species overlaps the range of estimates for "gained bird years." Therefore, for the sake of simplicity and clarity, if mortality occurs and triggers compensatory mitigation, it would be assumed that "bird years" per lost bird equals "bird years" per gained bird, and each bird life "gained" will offset a single bird life "lost."

If compensation is to occur in the form of restoration or preservation of breeding habitat, the restored nesting habitat compensation acreage per whole bird loss would be the most pertinent metric. If mortality occurs to one of the species for which estimates are provided in DRECP LUPA Appendix D, then the provided estimate will be used. Otherwise an estimate will be calculated using average home-range size estimates for the species in question if available or for taxonomically and ecologically similar species, if necessary.

Restored Nesting Habitat Compensation Acreage per Whole Bird Loss estimates provided in DRECP LUPA Appendix D are as follows:

- Willow flycatcher—5 acres
- Bell's vireo—2 acres
- Yellow-billed cuckoo—20 acres
- Gila woodpecker—24 acres
- Ridgway's rail—2 acres
- Black rail—2 acres

For species that do not breed within the DRECP LUPA Plan Area (e.g., mountain plover and greater sandhill crane), restoration or improved management of breeding habitat is not feasible. However, restoration and maintenance of foraging habitat, with the aim of increasing winter survival may be possible.

An alternative to habitat restoration or preservation, threat reduction actions could be used to compensate for mortality. According to DRECP LUPA Appendix D, compensation for bat mortality would need to take the form of threat reduction compensation, rather than habitat preservation or restoration. DRECP LUPA Appendix D recognizes several threat reduction measures, including the following which may be considered for this Project, if impacts trigger mitigation requirements:

- Nest site and roost protections.
- Retrofitting – Power line retrofitting following current Avian Power Line Interaction Committee standards in the LUPA Plan Area could reduce the risk of future electrocutions. As a compensation action, power line retrofitting must be in addition to existing, ongoing retrofitting programs being conducted by the utilities.
- Repowering existing wind facilities – Aging, inefficient wind power generation facilities that may kill or injure birds and bats may present an opportunity to repower or re-site or remove them to reduce the amount of ongoing mortality.
- Predator control and management programs, such as this Project's Raven Management Program (Appendix F-5 of the POD) or cowbird control. Again, the effectiveness of these compensation actions requires an understanding of both the lifetime contribution of an individual and the gains to the population in terms of avoided losses. It is unknown if the scale at which it would need to be implemented would make this a feasible approach for compensation.
- For bats, compensation would almost entirely consist of management actions designed to reduce threats from encroachment of human activity on significant roosts. For example, human access to mines may be restricted by funding gating and/or fencing that does not block bat access at abandoned mine features.

Given the low likelihood that the Project will result in mortality to any DRECP Focus or BLM sensitive species, and the inability to predict which, if any, species will experience mortality, a specific and detailed calculation of specific compensatory mitigation actions would not be appropriate at this time. Prior to each five-year reassessment, if mortality triggers a need for compensatory mitigation, DCRT, in collaboration with BLM, will identify commensurate specific compensatory actions or monetary compensation.

6.5.5 Golden Eagle Mortality

CMA LUPA-BIO-COMP-3 and CMA LUPA-BIO-COMP-4 require Project proponents to contribute to a DRECP-wide monitoring program, if the Project is determined, through environmental analysis, to likely impact golden eagles within the DRECP area (as it pertains to the Project, BLM land in California). According to the Draft EIS, there is no golden eagle nesting habitat in or near the DRECP portion of the Project area and while the Project area may provide eagle foraging habitat, but the prey base of black-tailed jackrabbits and desert cottontails is considered very low. The Project is not likely to impact golden eagles through direct mortality or indirect impacts. Therefore, DCRT will not be responsible for contributing to the golden eagle monitoring program. If new evidence leads to the documentation or expectation of golden eagle mortality, compensatory mitigation will be provided as described above.

7 Raven Management

During the past few decades, the population of the common raven (*Corvus corax*) has increased substantially in the Desert Southwest, primarily in response to human-provided subsidies of food, water, and nest sites. Ravens are a major predator of many special status species, including the federally threatened Mojave desert tortoise. Per BMP BIO-28, MM WIL-CEQA-2, and CMA LUPA-BIO-6 compensatory mitigation will be provided that contributes to LUPA-wide raven management. The Raven Management Plan, Appendix

F-5 of the POD, provides a detailed prescription of measures to avoid and minimize the Project's unintentional augmentation of raven populations. Per MM WIL-CEQA-2, DCRT will submit payment into an account established for the Project held by the National Fish and Wildlife Foundation to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or more current guidance as provided by USFWS. The contribution to the regional raven management plan will be $105 "per acre impacted." The correct interpretation of the words "per acre impacted" will be determined based on conversations with BLM and/or CDFW. Preliminarily, this document assumes it to mean acres of permanent and temporary ground disturbance.

8 Cultural Resources

Per BMP CULT-05 and LUPA-TRANS-CUL-2, DCRT will pay a compensatory mitigation fee for cumulative and indirect effects to historic properties as a result of construction. The fee structure of the compensatory mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the Project, as determined by Appendix G of the DRECP Programmatic Agreement (PA), which has not been completed to date. If Appendix G of the DRECP PA has not been completed at the time the PA is executed, the BLM will develop mitigation to address cumulative and indirect adverse effects in a manner that is commensurate to the size and regional impacts of the Undertaking, in consultation with the Consulting Parties. This fee structure would be determined by the BLM and contained in the Project-specific PA.

According to the Draft EIS, *"Specific impacts to historic properties are unknown until Class III identification studies and indirect effect analyses of the selected route are completed, and additional information regarding engineering design is available. As a result, evidence is currently insufficient to state specific direct or indirect impacts to particular historic properties or to discuss specific measures to resolve potential effects to those properties."* When the potential impacts to historic properties are identified, avoidance and minimization measures will be adopted to the extent practicable to prevent impacts, and any remaining residual impacts will be compensated as described above.

9 Visual Resources

As detailed in Appendix 1c of the Draft EIS and in the DRECP LUPA, CMA DFA-VRM-2 requires compensatory mitigation for visual impacts based on underlying Visual Resource Inventory (VRI) Classes. Specifically, DFA-VRM-2 states that regional mitigation is required.

> "…based on the VRI class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the activity area as it stands at the time the ROD is signed for the DRECP LUPA. Compensatory mitigation may take the form of reclamation of other BLM lands to maintain (neutral) or enhance (beneficial) visual values on VRI Class II and III lands. Other considerations may include acquisition of conservation easements to protect and sustain visual quality within the viewshed of BLM lands. The following mitigation ratios will be applied in DFAs:
>
> - VRI Class II 1:1 ratio
> - VRI Class III ½ (0.5): 1 ratio

- VRI Class IV, no mitigation required

Additional mitigation will be required where activities affect viewsheds of specially designated areas (e.g., National Scenic and Historic Trails)."

As detailed in the Draft EIS (Table 3.11-5, page 3-78; Appendix 2C, page 62), only VRI Class II areas are crossed by the Project, and the visual impact analysis determined that the introduction of the Project into the viewshed would not result in a scenic quality reduction of VRI Class II areas enough to lower the VRI class (e.g., from VRI Class II to VRI Class III). Therefore, no compensatory mitigation is required for visual resources, and no additional analysis has been conducted as part of this CMP.

10 References

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2B.7 MOJAVE FRINGE-TOED LIZARD AVOIDANCE AND CLEARANCE PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Mojave Fringe-Toed Lizard Avoidance and Clearance Plan

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154320

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Mojave Fringe-Toed Lizard Avoidance and Clearance Plan

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ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius
°F	Degrees Fahrenheit
AGFD	Arizona Game and Fish Department
APM	Applicant Proposed Measure
AQ	Air Quality
BIO	Biological Mitigation Measure
BLM	Bureau of Land Management
BMP	Best Management Practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CMA	Conservation and Management Action
CPUC	California Public Utilities Commission
DCRT	Delaney Colorado River Transmission, LLC
DFA	Development Focus Areas
DRECP	Desert Renewable Energy Conservation Plan
DUNE	Dune Habitat Measure
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
IFS	Individual Focus Species
LUPA	Land Use Plan Amendment
MM	Mitigation Measures
Plan	Mojave Fringe-Toed Lizard Avoidance and Clearance Plan
POD	Plan of Decision
Project	Ten West Link Transmission Project
ROW	Right-of-way
TRANS	Transportation
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
VPL	Variance Process Land Designation
WEAP	Worker Environmental Awareness Program

1 Introduction

The data and information provided with this Mojave Fringe-Toed Lizard Avoidance and Clearance Plan (Plan) is for the Ten West Link Transmission Project (Project) proposed by Delaney Colorado River Transmission, LLC (DCRT) on the California portion only. The purpose of this Plan is to address direct impacts resulting from the construction, operation, and maintenance of the Project to the Bureau of Land Management (BLM) sensitive (and California species of concern) Mojave fringe-toed lizard (*Uma scoparia*) and their associated sand dune habitats. Direct impacts would be potential habitat loss and species injury and/or mortality. This project-specific Plan describes the avoidance management strategy and mitigation procedures that would minimize impacts to the species and their habitat. The DCRT is responsible to ensure all supervision, guidance, and verification of the mitigations and protocols outlined in the Plan are achieved and receive approval by the BLM.

1.1 Project Description and Location

As shown in Figure F-6-1 – Ten West Link Proposed Action Overview, the Project is approximately 125.3 miles of 200-foot-wide right-of-way (ROW) with 103.7 miles of the route in Maricopa and La Paz Counties, Arizona and 21.6 miles in Riverside County, California. Of the total length, approximately 81.3 miles cross lands managed by federal agencies including the BLM, the Department of Defense, and the Bureau of Reclamation.

The Project's overhead transmission line would extend between Arizona Public Service's Delaney Substation near Tonopah, Arizona and Southern California Edison Company's Colorado River Substation, located near Blythe, California. The Project route (BLM Preferred Alternative) would parallel an existing transmission line and other linear facilities, primarily within designated utility corridors. For further design and details, refer to the Plan of Development (Volume I). Any changes or additions to the requirements for this Plan will be updated when the Record of Decision has been issued.

1.2 Relevant Laws, Regulations, and Management Policies

1.2.1 Federal

Administered by the United States Fish and Wildlife Service (USFWS), the Endangered Species Act (ESA) of 1973, as revised, was established to protect species at risk of becoming extinct (16 United States Code [U.S.C.] § 1531). In 2006, a private-citizen petition was sent to the USFWS to list the Mojave fringe-toed lizard populations residing near the Amargosa River in Southern California. After a 12-month review of current population and genetic trends during 2008, the USFWS Ventura Field Office concluded that the species did not warrant protection under the ESA (Federal Register, Volume 76, No. 61321). However, the BLM Colorado River District Offices list the species as sensitive, requiring special management consideration to promote conservation and reduce the likelihood of future listing of the species.

1.2.2 State of Arizona

The Mojave fringe-toed lizard is a Species of Greatest Conservation Need under the Arizona Game and Fish Department's State Wildlife Action Plan (Arizona Game and Fish

Department [AGFD] 2016) and a sensitive species on BLM administered lands in Arizona. The preferred alternative passes very close to suitable habitat within Arizona borders; however, the Project will not impact these areas. There is no suitable habitat for Mojave fringe-toed lizards for the portion of the Project in California for which BLM Arizona governs.

1.2.3 State of California

The California Department of Fish and Wildlife (CDFW) lists the Mojave fringe-toed lizard as a species of concern. This classification lists species either as state-extirpated; experiencing population declines or range retractions; or having small, existing populations demonstrating high vulnerability to risk (CDFW 2018).

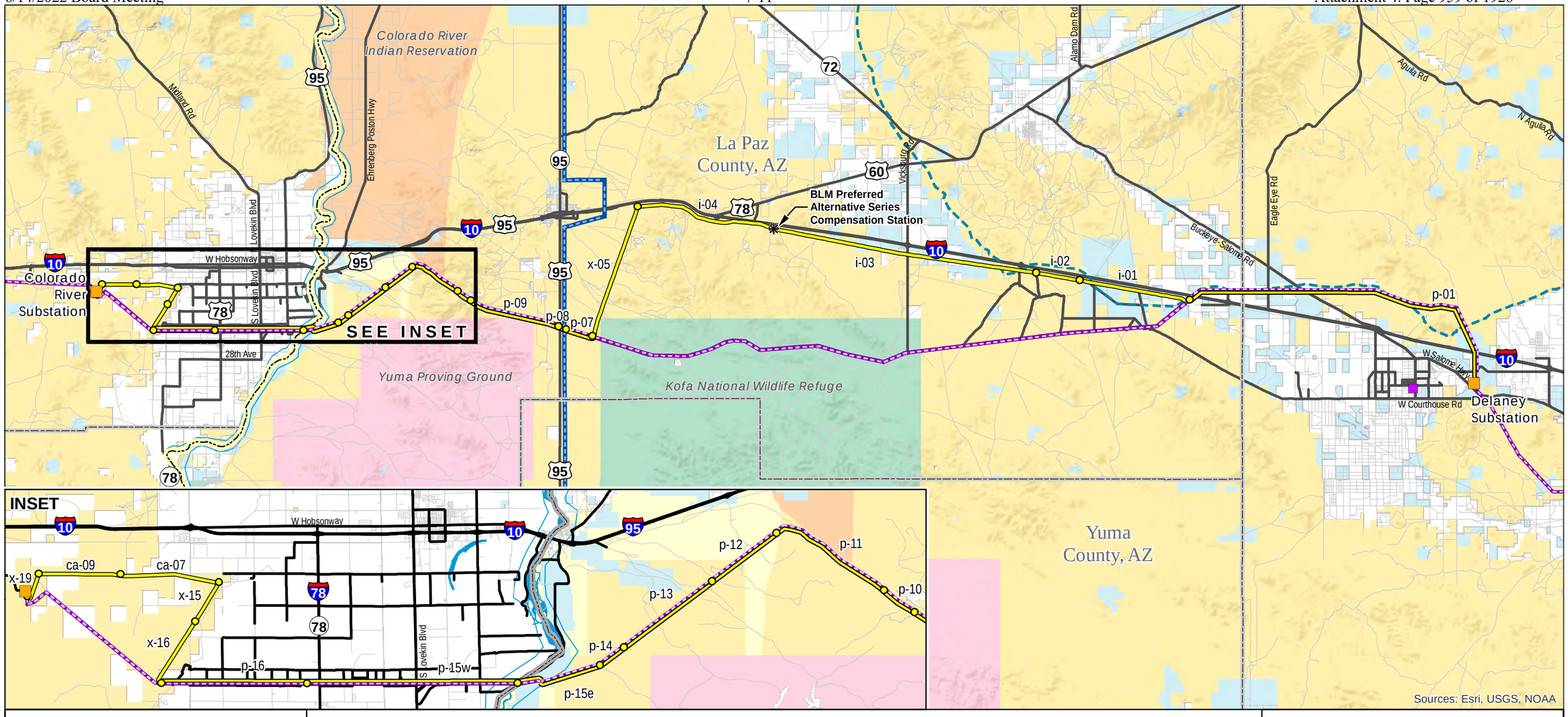
A statute passed in 1970, the California Environmental Quality Act (CEQA) requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible (California Natural Resources Agency 2014). Under CEQA guidelines, any species of concern should be included in project-impacts analysis (California Public Resources Code § 15380). The California Public Utilities Commission (CPUC) is responsible for determining if the Project will be constructed in accordance with CEQA requirements and issue to DCRT a Certificate of Public Convenience and Necessity for transmission infrastructure within California.

The Plan covers the requirements of the following Mitigation Measures (MM) under CEQA, as depicted in Appendix 1C of the Draft Environmental Impact Statement (EIS), for the Mojave fringe-toed lizard:

- MM Biological (BIO)-CEQA-1: Implement Biological Resources Applicant Proposed Measures (APMs), BLM Best Management Practices (BMPs), and Conservation and Management Actions (CMAs) as part of the Project and applied prior to, during, and after Project activities to avoid or minimize Project related impacts on biological resources (see Section 1.2.4). Where an APM, BMP, or CMA is subjective (i.e., “where appropriate,” “where feasible”), DCRT or their contractor will consult with BLM and CPUC to determine applicability of each measure prior to the disturbance of a covered resource. Weekly and monthly documentation of compliance will be provided to the BLM and CPUC; further details are provided in Appendix 1C of the Draft EIS.

- MM BIO-CEQA-2: Prior to any work activities on the Project including but not limited to surveying, mobilizations, fencing, grading, or construction, DCRT will implement a Worker Environmental Awareness Program (WEAP) approved by the CPUC and will be implemented throughout the duration of Project-related construction activities including the operation and maintenance phases (see Sections 1.2.3 and 4.3).

- MM BIO-CEQA-3: DCRT will implement biological construction monitoring no more than 30 days prior to the start of site mobilization or ground disturbance activities; approved, designated biologist(s) will be retained by DCRT to monitor construction of the Project (see Sections 1.2.3, 4.1, 4.2, and 4.4).



0 5 10 15 20
Miles

N

Project Components
- Substation
- BLM Preferred Alternative Series Compensation Station
- Route Segment Node
- BLM Preferred Alternative*

Base Features
- Existing DPV1 500kV Transmission Line
- Existing WAPA 161kV Transmission Line
- Harquahala Power Plant
- CAP Canal
- Interstate Highway
- Major Road
- Local Road
- State Boundary
- County Boundary

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Colorado River Indian Tribe Lands
- Department of Defense
- Private
- State
- USFWS

*DPV1, the DEIS Alternative Route Segments, and the BLM Preferred Alternative are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Ten West Link

Figure F-6-1

Ten West Link Proposed Project

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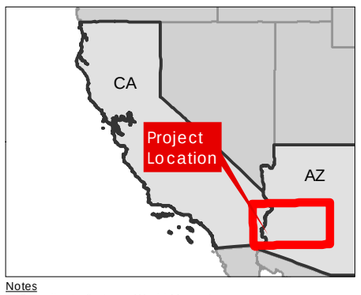

Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Aeolian System Mapping - Lancaster 2014
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Substation
- Boundary of Presumed Fringe-toed Lizard Habitat

California Natural Diversity Database (CNDDB) Species
- Harwood's Eriastrum
- Mojave Fringe-toed Lizard

Aeolian System Mapping for the DRECP, California Geological Survey
- D - Developed areas
- Qe - Active windblown deposits > 1.5 m thick
- Qe/Qal -Active windblown deposits < 1.5 m thick
- Qoa -Pleistocene alluvial deposits
- Qw -Alluvial wash deposits
- Qye/Qal - Stabilized windblown deposits
- Qyf - Alluvial fan deposits
- br - Bedrock

* = Existing DPV1 follows Proposed Action. DPV1 is cartographically offset for display purposes.

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1:48,000 (At original document size of 11x17)

Figure **F-6-2**
Ten West Link
Presumed **Mojave** Fringe-toed Lizard Habitat

1

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- MM WIL-CEQA-9: DCRT will be responsible for compensation as a result of impacts to the Mojave fringe-toed lizard. Compensation is determined after field surveys are conducted by qualified/approved biologists; all avenues of avoidance and minimization measures have been applied to the Project design; and impacts (temporary and permanent) have been identified. DCRT will submit to the BLM and CPUC a Mojave Fringe-Toed Lizard Protection and Compensation Plan that will be in accordance with the BLM and CPUC regulatory agencies policies and protocols. Approval from the BLM and CPUC will proceed Project commencement and be implemented during all Project phases, as necessary (see Section 5).

- MM WIL-CEQA-11: Where suitable habitat is present, pre-construction biological surveys must be conducted prior to the start of Project construction for listed and special status terrestrial herpetofauna (i.e., lizards, snakes, tortoise). DCRT will retain qualified biologists approved by the BLM and CPUC (see Sections 4.1, 4.3, and 4.4).

  Clearance surveys for special-status terrestrial herpetofauna shall be conducted prior to the initiation of construction each day in suitable habitat. Specimens found within disturbance areas or potentially affected by the Project shall be relocated to the nearest suitable habitat outside work areas and away from construction activity (see Section 4.4).

In addition, Mojave fringe-toed lizards are a Focus species identified in the Desert Renewable Energy Conservation Plan (DRECP). The DRECP is a primary constituent on Mojave fringe-toed lizard conservation in California and provides known occurrences of the species and associated habitats, particularly on the Palo Verde Mesa near the west end of the Project (DRECP 2014).

1.2.4 Project-Specific Requirements

As depicted in the MM BIO-CEQA-1, the Plan has been prepared to address Project-specific requirements for Biological Resource APMs and BLM's BMPs and are summarized in Table F-6-1. The APMs and BMPs listed are applicable during the pre-construction, construction, post-construction/restoration, and operation and maintenance phases of the Project. Their comprehensive nature covers the listed CEQA requirements (MM BIO-CEQA-1, BIO-CEQA-2, BIO-CEQA-3, WIL-CEQA-9, and WIL-CEQA-11), as well as the CMA standards required in regard to the Mojave fringe-toed lizard listed in Table F-6-2.

The CMA standards comply with the California Desert Conservation Area Plan of 1980, as amended (see Project's DEIS Appendix 2B.2; BLM 2018a). Several CMA standards listed in Table F-6-2 also meet requirements of MM WIL-CEQA-9 in minimizing impacts to the Mojave fringe-toed lizard; further details can be found in Section 4.3. All Project-specific requirements listed provide the regulatory framework that the Project must wholly comprehend and comply with.

TABLE F-6-1 DCRT AND BLM PROJECT-SPECIFIC REQUIREMENTS

Measure[1]	Description [1, 2]
APM BIO-01	Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the federal and state Endangered Species Acts and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special-status species as well as a discussion of avoidance and minimization measures. (Addresses California Management Action [CMA] standard Land Use Plan Amendment [LUPA]-Biological Mitigation Measure [BIO]-05 and Mitigation Measure [MM] BIO-California Environmental Quality Act [CEQA]-2)
BMP BIO-01	The worker education program would provide interpretation for non-English speaking workers. (Addresses CMA standard LUPA-BIO-05 and MM BIO-CEQA-2)
APM BIO-02	A qualified biological monitor would be present on the Project site during all work activities within habitat of special-status animal species. The qualified biologist would conduct a preconstruction survey of those areas immediately before work activities begin and would locate and fence off any present individuals of special status plant species. (Addresses CMA standard LUPA-BIO-2, LUPA-BIO-DUNE-5, LUPA-BIO-Individual Focus Species [IFS]-06 and 07, Development Focus Area [DFA]-BIO-IFS-01 and 02, and MM BIO-CEQA-3)
BMP BIO-02	A qualified biological monitor would be present on the Project site during all work activities within habitat of special-status animal species. The qualified biologist would conduct a preconstruction survey of those areas immediately before work activities begin and would locate and fence off any present individuals of special status plant species. (Addresses CMA standard LUPA-BIO-2, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-06 and 07, and DFA-BIO-IFS-01 and 02 and MM BIO-CEQA-3)
APM BIO-03	To the extent practicable, stockpiling of material would be allowed only within the established work area. Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed areas within identified work areas or access roads. (Addresses CMA standard LUPA-BIO-13)
BMP BIO-03	The BLM would approve areas to be used for stockpiling, vehicle parking, or other construction support activity that would occur outside established work areas. (Addresses CMA standard LUPA-BIO-13)
APM BIO-09	All excavated steep-walled holes or trenches more than 1.0-foot deep would be covered at the end of each working day with plywood or similar material or would be provided with one or more escape ramps constructed of earth fill or wooden planks. Each trench or hole would be inspected for wildlife at the beginning of each work day and before such holes or trenches are filled. Wildlife found trapped in trenches or holes would be relocated to suitable habitat outside the work area. If possible, pipes and culverts greater than three inches in diameter would be stored on dunnage to prevent wildlife from taking refuge in them, to the extent feasible. (Addresses CMA standard LUPA-BIO-14)

Measure[1]	Description [1, 2]
APM BIO-10	The Best Management Practices (BMPs) included in the Stormwater Pollution Prevention Program would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as described previously (Air Quality [AQ]-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access). (Addresses CMA standard LUPA-BIO-14)
APM BIO-17	Vehicular travel would be limited to established roads to the maximum extent practicable. (Addresses CMA standard LUPA-BIO-13)
BMP BIO-25	A survey would be conducted of the selected route prior to construction of all work areas to identify special-status animal species, including Mojave desert tortoises, burrowing owls, and Mojave fringe-toed lizards. Where possible, and as required by the Bureau Land Management (BLM), special-status species and vegetation alliances would be avoided during construction. (Addresses CMA standards LUPA-BIO-01, LUPA-BIO-DUNE-04/05, and LUPA-BIO-IFS-06, DFA-BIO-IFS-01, and MM WIL-CEQA-11)
BMP BIO-32	Species-specific seasonal restriction dates per AGFD and CDFW and in applicable RMPs would be observed. (Addresses CMA standard LUPA-BIO-04 and LUPA-BIO-DUNE-5)
BMP BIO-35	All construction materials would be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed. (Addresses CMA standard LUPA-BIO-14)
BMP BIO-36	The intentional feeding or harassment of wildlife on site is prohibited. (Addresses CMA standard LUPA-BIO14)
BMP-BIO-38	Use state-of-the-art, commercially available construction and installation techniques, as approved by BLM, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation. (Addresses CMA standards LUPA_BIO-09 and 15)
BMP BIO-49 (California only)	A Mojave Fringe-toed Lizard Management Plan would be prepared that identifies specific conservation measures to minimize Project-related impacts to sand dunes and sand transport areas, to map suitable habitat within construction zones, and methods to achieve clearance survey within suitable habitat so animals are not killed by construction activities. (Addresses CMA standard LUPA-BIO-01 and LUPA-BIO-DUNE-02/04/05, and MM BIO-CEQA-9)
BMP BIO-53 (California only)	Project facilities would be sited to avoid dune vegetation. Unavoidable impacts to dune vegetation would be limited and Project facilities access roads that would be sited to minimize unavoidable impacts. Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation. Access roads would be unpaved, and access roads would be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transport. (Addresses CMA standard LUPA-BIO-01 and 13, LUPA-BIO-DUNE-02 and 04, LUPA-Transportation [TRANS]-BIO-4, and DFA-Variance Process Land designation [VPL]-BIO-DUNE-1)
BMP BIO-54 (California only)	Within aeolian corridors that transport sand to dune formations and vegetation types downwind, all activities would be designed and operated to facilitate the flow of sand across activity sites and avoid the trapping or diverting of sand from the aeolian corridor. Structures would consider the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences would be designed to allow sand to flow through and not be trapped. (Addresses CMA standard LUPA-BIO-01, LUPA-BIO-DUNE-01/02/04, LUPA-TRANS-BIO-04, and DFA]-VPL-BIO-DUNE-02)

Measure[1]	Description [1, 2]
BMP BIO-55 (California only)	Construction of new roads and/or routes would be avoided to the extent practicable within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas would have a goal of "no net gain" of Project roads and/or routes. (Addresses CMA standard LUPA-BIO-13 and LUPA-BIO-DUNE-04)
BMP VEG-01	Any removal of vegetation resources would be conducted in accordance with BLM IB 2012-097 (Addresses CMA standard LUPA-BIO-15)
BMP VEG-02	Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely. Locations for drive and crush travel or cut/mow would be determined in conjunction with the Access Road Plan (Appendix 2B of the Project DEIS). (Addresses CMA standard LUPA-BIO-14)

[1] APM = Applicant Proposed Measure; BIO = Biological Mitigation Measure; BLM =, Bureau of Land Management; BMP = Best Management Practices; CMA = Conservation and Management Action; DFA = Development Focus Areas; DRECP = Desert Renewable Energy Conservation Plan; DUNE = Dune Habitats; IFS = Individual Focus Species; LUPA = Land Use Plan Amendment; TRANS = Transportation; VPL = Variance Process Land designation.

[2] The Draft Environmental Impact Statement (EIS) mitigation measure language was copied from the Project Draft EIS Appendix 2A and 2B (BLM 2018a). References for the requirement descriptions can be found in the source documents. Any requirements from the Final EIS will be updated in the final Plan of Decision management plans.

TABLE F-6-2 CMA PROJECT SPECIFIC REQUIREMENTS (CALIFORNIA ONLY)

Measure[1]	Description [1, 2]
LUPA-BIO-01	Conduct a habitat assessment of Desert Renewable Energy Conservation Plan (DRECP) Focus and Bureau of Land Management (BLM) Special Status Species' suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat for DRECP Focus and BLM Special Status Species. If required by the relevant species-specific California Management Actions (CMAs), conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species-specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat.
LUPA-BIO-03	Resource setbacks (see Glossary of Terms in the Project Draft Environmental Impact Statement [EIS]) have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions (see Draft EIS Glossary of Terms), as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from: • The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in Land Use Plan Amendment [LUPA]-Biological Mitigation Measure [BIO]-01). • The edge of the vegetation extent for specified DRECP Focus and BLM sensitive plant species. • The edge of suitable habitat or active nest substrates for the appropriate DRECP Focus and BLM Special Status Species.

Measure[1]	Description [1, 2]
LUPA-BIO-04	For activities that may impact DRECP Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities. Species-specific seasonal restriction dates are described in the applicable CMAs. Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.
LUPA-BIO-05	All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about: • Site-specific biological and nonbiological resources. • Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources. • The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc. • Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist. • Measures that personnel can take to promote the conservation of biological and nonbiological resources.

Measure[1]	Description [1, 2]
LUPA-BIO-13	Implement the following CMA for project siting and design: • To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for DRECP Focus and BLM Special Status Species (see "avoid to the maximum extent practicable" in Draft EIS Glossary of Terms). • The siting of projects along the edges (i.e., general linkage border) of the biological linkages identified in Appendix D of the Project Draft EIS (Figures D-1 and D-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to DRECP Focus and BLM Special Status Species' dispersal, and (2) informed by existing available information on modeled DRECP Focus and BLM Special Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of Special Status Species connectivity and their associated habitats in the following linkage and connectivity areas: o Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla Areas of Critical Environmental Concern and Mule-McCoy Linkage Areas of Critical Environmental Concern). • Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, Project vehicles, and equipment to the delineated Project areas to protect vegetation types and focus and BLM Special Status Species. • Long-term nighttime lighting on project features will be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting. • Long-term nighttime lighting on project features will be limited to the minimum necessary for Project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting. • To the maximum extent practicable (see Draft EIS Glossary of Terms), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas. • To the maximum extent practicable (see Draft EIS Glossary of Terms), confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance. • To the maximum extent practicable (see Draft EIS Glossary of Terms),construction of new roads and/or routes will be avoided within DRECP Focus and BLM Special Status Species suitable habitat within identified linkages for those DRECP Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of "no net gain" of project roads and/or routes. • Use nontoxic road sealants and soil stabilizing agents.

Measure[1]	Description [1, 2]
LUPA-BIO-14	Implement the following general standard practices to protect DRECP Focus and BLM Special Status Species: • Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited. • Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed. • Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act. • All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed. • All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork. • Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.
LUPA-BIO-15	Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.
LUPA-BIO-COMP-01	Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA Decision Area will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-Compensation [COMP]-2 through -4, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization. Refer to CMA LUPA-COMP-1 for the timing requirements for initiation or completion of compensation (compensation activities must be initiated or completed within 12 months from the time the resource impact occurs).
LUPA-BIO-DUNE-01	Because DRECP sand dune vegetation types and aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or aeolian sand transport corridors must conduct studies to verify the location [refer to Appendix D of the Project Draft EIS, Figure D-7] and extent of the sand resource(s) for the activity-specific environmental analysis to determine: • Whether the proposed activity(s) occur within a sand dune or an aeolian sand transport corridor. • If the activity(s) is subject to dune/aeolian sand transport corridor CMAs. • If the activity(s) needs to be reconfigured to satisfy applicable avoidance requirements.

Measure[1]	Description [1, 2]
LUPA-BIO-DUNE-02	Activities that potentially affect the amount of sand entering or transported within aeolian sand transport corridors will be designed and operated to: • maintain the quality and function of aeolian transport corridors and sand deposition zones, unless related to maintenance of existing facilities/operations/activities; • avoid a reduction in sand-bearing sediments within the aeolian sand system; • and minimize mortality to dune-associated DRECP Focus and BLM Special Status Species.
LUPA-BIO-DUNE-03	Any facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the aeolian corridor in a way that maintains the aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this transport function must be approved by BLM in coordination with United States Fish and Wildlife Service and California Department of Fish and Wildlife as appropriate.
LUPA-BIO-DUNE-04	Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center.
LUPA-BIO-DUNE-05	Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center. If suitable habitat characteristics are identified during the habitat assessment, clearance surveys (see Draft EIS Glossary of Terms) for Mojave fringe-toed lizard will be performed in suitable habitat areas.
LUPA-BIO-IFS-06	When working in areas where protocol or clearance surveys are required (see Appendix D of the Project Draft EIS), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.
LUPA-TRANS-BIO-04	Siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in aeolian corridors, rare vegetation alliances and DRECP Focus and BLM Special Status Species. Transmission substations will be sited to avoid aeolian corridors, rare vegetation alliances, and sand-dependent DRECP Focus and BLM Special Status Species habitats.
DFA-VPL-BIO-DUNE-01	Activities in Development Focus Areas (DFAs) and Variance Process Land designations (VPLs), including transmission substations, will be sited to avoid dune vegetation (i.e., North American Warm Desert Dune and Sand Flats). Unavoidable impacts (see “unavoidable impacts to resources” in the Draft EIS Glossary of Terms) to dune vegetation will be limited to transmission projects, except transmission substations, and access roads that will be sited to minimize unavoidable impacts. • For unavoidable impacts (see “unavoidable impacts to resources” in the Draft EIS Glossary of Terms) to dune vegetation, the following will be required: o Access roads will be unpaved. Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.
DFA-VPL-BIO-DUNE-02	Within aeolian corridors that transport sand to dune formations and vegetation types downwind inside and outside of the DFAs, all activities will be designed and operated to facilitate the flow of sand across activity sites and avoid the trapping or diverting of sand from the aeolian corridor. Buildings and structures within the site will take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences will be designed to allow sand to flow through and not be trapped.

Measure[1]	Description [1, 2]
DFA-BIO-IFS-01	Conduct the following surveys as applicable in the DFAs (see Appendix 1C of the Project Draft EIS).

[1] BIO = Biological Mitigation Measure; BLM = Bureau of Land Management; CMA = Conservation and Management Action; COMP = Compensation Mitigation Measure; DFA = Development Focus Areas; DRECP = Desert Renewable Energy Conservation Plan; DUNE = Dune Habitats; IFS = Individual Focus Species; LUPA = Land Use Plan Amendment; TRANS = Transportation; VPL = Variance Process Land designation.
[2] The Draft Environmental Impact Statement (EIS) mitigation measure language was copied from the Project Draft EIS Appendix 2B and 2C (BLM 2018a). References for the requirement descriptions can be found in the source documents. Any requirements from the Final EIS will be updated in the final Plan of Decision management plans.

2 Purpose and Objectives

Per MM WIL-CEQA-9 and WIL-CEQA-11, the purpose of this Plan is to discuss species occurrences and known suitable habitat; provide potential for indirect and/or indirect permanent impacts; and site-specific enhancement measures for the protection of sand sources and sand transport corridors on the compensation lands (CPUC and BLM 2011). The implementation of the APMs, BMPs, and CMA measures listed in Table F-6-1 and F-6-2 avoid and minimize impacts to the Mojave fringe-toed lizard and the sandy habitats this species requires. These measures apply during construction, operation, and maintenance of the Project. The specific Plan objectives include:

1. Identify suitable habitat for the Mojave fringe-toed lizard.
2. Provide avoidance and minimization measures and identify roles and responsibilities for their implementation.
3. Provide the survey and monitoring requirements for successful salvaging of existing Mojave fringe-toed lizards within the Project area.
4. Identify compensation requirements for direct impacts to dune habitats and/or habitats with fine-loose sand accumulations and Mojave fringe-toed lizard.

As a whole, the primary objective to the Plan is to ensure no Mojave fringe-toed lizards are injured or killed during construction activities and to protect the species range from being altered.

3 Species Habitat

The Mojave fringe-toed lizard is only found in habitats with loose, fine-grained sand and is widespread on the Palo Verde Mesa west of the agricultural fields in Riverside County, California; it is not expected to be found in agricultural fields. These habitats or sand dune systems require “aeolian” or wind transport of requisite sand into areas from upwind sources. The avenues of sand transport provide the freedom of movement that is critical to numerous plants and animals found only on active dunes, or habitats that have a layer of mobile fine sand. Other sand accumulations including sand ramps, sand sheets, and alluvial fans where sand buildup occurs are also suitable habitat for the Mojave fringe-toed lizard. Sand-covered alluvial fans known to occur in Riverside County, California; Riverside County encompasses the Project west of the Colorado river. Small parcels of habitat exist along the west-central border of Arizona within the northern portion of La Paz County (AGFD 2017); however, the Project does not impact these parcels and these areas will not be considered for surveys.

Patches of active dunes and fine-grained sandy habitats are dependent on the dominant vegetation for stability and natural barriers, which include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), white ratany (*Krameria grayi*), and cheesebush (*Ambrosia salsola*; University of California 2019; DRECP 2014). Details on data sources and habitat mapping development can be found in the Project Draft EIS Chapter 3.4.2.1 – Vegetation Resources, Including Special Status Plants and Noxious and Invasive Weeds (BLM 2018a).

Harwood's eriastrum (*Eriastrum harwoodii,* BLM Sensitive Species) is an annual herb that is often associated with sand accumulation or dune systems and is commonly associated with the Mojave fringe-toed lizard due to their shared habitat preference for active sand and dune systems. As shown in Figure F-6-2 – Ten West Link Mojave Fringe-toed Lizard Habitat, a majority of Harwood's eriastrum plants are located within known Mojave fringe-toed lizard habitat polygons. Further details on mapped data can be found in the Project's Draft EIS Chapter 3.4 (BLM 2018a).

As shown in Figure F-6-2, the majority of the Colorado River Substation is surrounded by active windblown sand deposits from the aeolian process. Three segments (x-19, ca-09, ca-07) cross documented occurrences of Mojave fringe-toed lizards and Harwood's eriastrum. Potential Project-related impacts to the Mojave fringe-toed lizard include injury or mortality during vegetation removal, collapsed burrows, and being struck by construction equipment and vehicles. The primary defense mechanism of this species is to flee and bury themselves in loose sand; thus, increasing the potential that Project activities may crush individuals during the use of access roads and construction areas (BLM 2018a).

4 Avoidance and Clearance Plan

The following subsections describe the Mojave fringe-toed lizard avoidance mitigation and clearance practices that will be implemented during the pre-construction, construction, post-construction/restoration phases of the Project. DCRT or their contractor shall be responsible for all aspects of management of this species as described in this Plan.

4.1 Designated Biologist

The Designated Biologist(s) will be independently or jointly assigned by DCRT or their contractor for their components of the Project and will have been approved by BLM, CPUC, and CDFW, 30 days before the start of surveys or monitoring. The Designated Biologist(s) will be responsible for facilitating the implementation of avoidance, minimization, and mitigation measures for the Plan. In addition, the Designated Biologist(s) will be responsible for drafting the methods for biological surveys, schedule development, agency coordination, reporting, supervision of field staff including Biological Monitors, and ensuring Biological Monitors working in aeolian sand and dune systems have expertise identifying Mojave fringe-toed lizards, as well as their tracks, and behaviors.

4.2 Biological Monitor

As outlined in BMPs BIO-01 and BIO-02 and per MM BIO CEQA-2, the Biological Monitor(s) will meet the requirements of a qualified biologist, must be approved by the CPUC and BLM prior to conducing biological monitoring for construction. Each Biological Monitor must be knowledgeable with the life history and habitat requirements of the Mojave fringe-toed

lizard; have prior construction monitoring experience on projects within desert habitats; and knowledge working in aeolian sand and dune systems is desirable (BLM 2018a). The duties of the Biological Monitor(s) will be on-site at all times when activities (i.e., initial site disturbance, all construction phases) will occur immediately adjacent to, or within, habitat that supports populations of the Mojave fringe-toed lizard. This will ensure that Project activities remain in compliance with the conservation measures outlines in this Plan, which are designed to minimize impacts to special status species, native vegetation, wildlife habitat, and unique resources. The Biological Monitor(s) will report biological impact concerns to the Designated Biologist(s), where applicable. The Biological Monitor(s) will be the field contact representative(s) for construction workers and the Designated Biologist(s).

4.3 Avoidance Procedures

Management of the Mojave fringe-toed lizard includes avoidance and minimization of species impacts, as well as preservation of occupied habitat and avenues that transport aeolian sand. Based on the established management strategies for the closely-related Coachella Valley fringe-toed lizard (*Uma inornata*), which are outlined in the Coachella Valley Multiple Species Habitat Conservation Plan (Coachella Valley Conservation Commission 2012 and 2014) and the DRECP Draft Environmental Impact Report (EIR)/EIS Appendix Q – Baseline Biological Report (DRECP 2014), and the Project Draft EIS mitigation measures (Table F-6-1 and F-6-2) required by the BLM and CPUC (per CEQA standards MM BIO-CEQA-1/2/3, WIL-CEQA-9, and WIL-CEQA-11), the following actions will be implemented:

A. WEAP: As part of the APM/BMP BIO-01 and per requirement of MM BIO-CEQA-2, the Project is required to implement a WEAP and include pertinent information in the WEAP about the potential presence of the BLM-sensitive Mojave fringe-toed lizard including identification of the species, mitigation actions, and a procedure to be followed should the species be found during construction.

B. Public Access: The Project is required to control and manage impacts that degrade aeolian sand systems and prevent flow of sand transport including public access in known occupied and potential habitat (except on designated routes of travel), road development that would produce habitat fragmentation, and other human disturbance. In the event that habitat degradation appears to be unavoidable, inform the Designated Biologist and BLM so that the BLM may determine appropriate mitigation or compensation (see Section 5 for further details on compensation).

C. Invasive Plants: Implement mitigation actions that minimize or avoid introduction of any identified noxious or invasive weed species, where feasible, if their presence has been determined to impact to Mojave fringe-toed lizards and Harwood's eriastrum-associated habitats. For further details, see Appendices F-6 and F-7 in the Plan of Decision (POD).

D. Invasive and Nuisance Animals: Control of invasive and nuisance animal species will be implemented to minimize or avoid indirectly impacting the Mojave fringe-toed lizard species. Further details are provided in Appendix F-4 of the POD.

E. Active Season: Construction activities will be conducted during Mojave fringe-toed lizard active periods (March-October), to allow for lizards to be located during surveys and make it easier to avoid them (see BMP BIO-32). Due to their ability to

be highly mobile, this will increase the likelihood of species detection during surveys. Thus, direct causes of mortality will be minimized.

F. Open Excavations: Open trenching, holes, or other excavations that are more than 1.0-foot deep must be covered at the end of each working day or would be provided with one or more escape ramps constructed of earthen fill or wooden planks (see APM BIO-09). Each trench, hole or other excavation would be examined for Mojave fringe-toed lizards prior to start of work. No backfilling will occur until the excavated hole has been examined for this species and relocated by a Biological Monitor to suitable habitat outside the work area. If exclusion fencing around trenches are required and located adjacent or within suitable habitat, DCRT or their contractor must have prior BLM approval, in order to ensure the Mojave fringe-toed lizards will not become entangled or trapped.

If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.

G. Resource Setbacks: If resource setbacks are identified, DCRT or their contractor will coordinate with BLM and CPUC to determine the edges of aeolian sand habitats in order for construction activity to avoid or minimize adverse effects of these desert vegetation types (see CMA standard LUPA-BIO-03). Any resource setbacks likely would be identified during pre-construction habitat assessments. Environmental Resource Area signage will be installed at the appropriate buffer distance (i.e., resource setback), if suitable habitat is within or encroaches into Project work areas and access roads. If required and approved, exclusion fencing will also be installed at the appropriate buffer distance (see Section 4.4).

H. Construction Techniques: Construction activities will use state-of-the-art and commercially-available techniques per BLM approval, to minimize new disturbance, soil erosion, soil compaction, vegetation removal, and disturbance of topography, in order to avoid impacts to the Mojave fringe-toed lizard and its vegetation alliances (see BMP BIO-55, VEG-01, and VEG-02).

I. Overland Access: In areas where possible, minimize or avoid vegetation clearing and/or soil disturbance of topography suitable for overland driving or access (see APM BIO-10). In addition, construction activity that alters hydrology of work sites and roads must take into consideration the continued-sediment transport and deposition within aeolian corridors and have BLM prior approval; in order to maintain the sorting and transporting to downward deposition zones to the extent feasible (see CMA standard LUPA-BIO-DUNE-03).

J. Facility Design: Project facilities are near or within aeolian sand systems, the facilities will be designed in a manner that will allow flow of sand transport and minimize removal of Mojave fringe-toed lizard habitats (see BMP BIO-53).

K. New Roads/Routes: New roads/routes will avoid Mojave fringe-toed lizard suitable habitat within identified linkages, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern (BMP BIO-55).

L. Designated Areas: Designated areas for stocking materials and parking Project-related vehicles and equipment must be BLM approved and/or by the biological staff prior to use within or near aeolian sand habitats (see APM/BMP BIO-03).

M. Speed: All vehicles and equipment traveling onsite on unpaved public and private roads and on work sites adjacent to and/or within sandy habitats must follow speed limits of 15 miles per hour or less. Off-road traffic outside of designated areas for the Project will be prohibited (MM BIO CEQA-3).

N. Water Usage: To avoid attracting Mojave fringe-toed lizards to the Project work areas, water use for dust suppression will not allow prolonged ponding of surface water (see APM BIO-10) and no feeding or harassing of wildlife will not be tolerated on the Project (BMP BIO-36).

O. Material Mobilization: Prior to transporting any stock piles and stored materials near or within aeolian sand habitats or transport corridors, a biological monitor must check for any presence of Mojave fringe-toed lizards (see BMP BIO-35).

P. Sand Corridors: When possible, Project activity and operation will be designed to facilitate flow of aeolian sand corridors which transport sand to dune formations, sand sheets/ramps, and vegetation types preferred by the Mojave fringe-toed lizard. Avoid trapping or diverting sand transport that may attract Mojave fringe-toed lizards to work areas (see BMP BIO-54).

4.4 Survey and Monitoring Procedures (California Only)

4.4.1 Pre-construction Surveys

Pre-construction surveys for the Mojave fringe-toed lizard will be conducted to identify suitable habitats (i.e., dune systems, aeolian sand, sand accumulations, scattered vegetation), extent of sand resources, and presence of the species (BMP BIO-25 and MM WIL-CEQA-11). The Designated Biologist that conducts these surveys must be approved by BLM and CPUC. Suitable habitat, if present, shall be mapped using the BLM National Operations Center habitat-mapping standards.

As stated in MM WIL-CEQA-11, surveys will be conducted at a minimum of three daytime surveys and one nighttime survey within one week of vegetation clearing, or per further instruction from BLM and CPUC. All potential indirect and direct impacts shall be evaluated, and avoidance, minimization, compensation, and mitigation shall be approved by the appropriate federal and state regulatory agencies prior to project commencement. Where possible, the Mojave fringe-toed lizard and their vegetation alliances will be avoided during Project activities (BMP BIO-25).

As stated in MM WIL-CEQA-11, DCRT or their contractor will prepare a technical report that includes the detailed results of pre-construction surveys of the Mojave fringe-toed lizard combined with the other terrestrial herpetofauna survey results and submitted to the BLM, CPUC, and CDFW.

4.4.2 Clearance Surveys

As outlined in BMP BIO-25, BIO-49, MM WIL-CEQA-11, and based on surveying protocols for the closely-related Colorado fringe-toed lizard (*Uma notata*) defined within the Habitat Conservation Plan and Final EIR/EIS for the Imperial Irrigation District in Southern California (BLM 2018a; Imperial Irrigation District 2002), a clearance survey will be conducted within suitable habitat as defined in BIO-49, to ensure any existing Mojave fringe-toed lizards within Project work areas (i.e., pad/wire sites, access roads, yards, project disturbance) are avoided. All observations of the species tracks, burrows, discovered lizards, and relocations must be documented including a description of the observation, appropriate coordinates, time, temperature, and date.

Per MM WIL-CEQA-11, the clearance surveys will occur each day prior to construction at each work area in suitable habitat. At completion of surveys, a Biological Monitor will be on-site during construction activities if potential habitat is identified adjacent or within the Project work areas. Specimens found within disturbance areas or potentially affected by the Project shall be relocated to the nearest suitable habitat outside disturbance areas.

When additional conservation efforts are necessary, work areas near or within sandy habitats will be evaluated to determine if perimeter/exclusion fencing should be installed to preserve sensitive species and habitat from entering an active site during construction.

4.4.3 Monitoring

Per requirements of MM BIO-CEQA-3, Biological Monitor(s) will be qualified biologists designated by DCRT or their contractor and must be approved by the CPUC, BLM and CDFW prior to conducting construction monitoring. Biological Monitors will be during Project construction or maintenance activity that is adjacent or within a sand dune system or sand avenue to ensure the Project follows all of the Projects POD requirements (see APM/BMP BIO-02). Monitoring for the species will only occur when surface temperatures are between 96 degrees Fahrenheit (°F) and 112°F (36 degrees Celsius [°C] and 44°C) and during their active season between March and October (Imperial Irrigation District 2002; BLM 2018b). Construction activity that must occur within suitable habitat for the Mojave fringe-toed lizard will take place during the active season for this species, if possible. In the event that construction activity must occur outside the active season, inform the Designated Biologist so that the BLM may determine appropriate mitigation or compensation. Construction during active season will allow for a greater probability of detecting Mojave fringe-toed lizards during pre-construction surveys and will increase the effectiveness of avoidance measures.

As stated in the MM BIO-CEQA-3, monitoring reports will be completed daily and copies will be compiled and submitted to the CPUC, BLM, and CDFW on a weekly basis. When necessary, the Biological Monitor(s) will relocate the Mojave fringe-toed lizard that would be impacted by the Project; permits and/or a Memorandum of Understanding may be required (MM BIO-CEQA-3; Draft EIS Appendix 1C).

If any fringe-toed lizards are captured within the Project work areas, they will be released immediately outside the Project work areas. Specimens will be released in the shade of a shrub. No lizards will be held in captivity or in transport for longer than 10 minutes after their initial capture. If necessary, lizards will be transported in clean, white, plastic 5-gallon buckets (Center of Conservation Biologist 2005). Survey specifications will be updated based on the Final EIS requirements.

If an injured or dead Mojave fringe-toed lizard is encountered during activity on the construction site, an incident report will be submitted to the CPUC, CDFW and/or USFWS (as appropriate) within five calendar days. The incident report will include the date, time of the finding or incident (if known), and location of the carcass or injured animal and circumstances of its death or injury (if known). As feasible and approved by the BLM, injured animals will be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility. The Biological Monitor will, immediately upon finding the remains or injured animal, coordinate with the Designated Biologist and construction supervisory staff to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures will be included with the report. Species remains will be collected and frozen as soon as possible, and CDFW and USFWS, as appropriate, will be contacted regarding ultimate disposal of the remains (MM BIO-CEQA-3; Draft EIS Appendix 1C).

When unforeseen circumstances arise during the implementation of avoidance and mitigation efforts, DCRT or their contractor may be required to coordinate with BLM and USFWS on adaptive management strategies. The monitoring program as depicted in APM/BMP BIO-02 is designed to be flexible. The Plan balances the requirements of management with the need to adapt through monitoring and construction and per guidance from the BLM, CPUC, and/or USFWS. Any adaptive management strategies required for the Mojave fringe-toed lizard or their habitats will be addressed on a case-by-case basis for the Project (LADWP 2015). Specific adaptive monitoring will be updated based on the Final EIS requirements.

5 Compensation for Direct Impacts

As stated in CMA standard LUPA-BIO-COMP-01, DCRT will be required to provide compensation as a result of permanent habitat loss and direct impacts to the Mojave fringe-toed lizards on the Project. The standard biological resource compensation ratio will be at a minimum 3:1, which may include compensation lands purchased in fee, or in easement in whole or in part (see CMA standard LUPA-BIO-COMP-1). This may include off-site creation, enhancement, and/or preservation, and/or participation in an established mitigation bank program. In the case for temporary impacts, compensation provided by DCRT will include on-site habitat creation or enhancement with similar species compositions to those present prior to construction at a ratio of 1:1 (see Appendix 1C of the Project Draft EIS).

Where land acquisition fulfills the 3:1 mitigation for direct impacts, DCRT will provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a six month extension is approved by the appropriate federal and state regulatory agencies (MM WIL-CEQA-9). For compensation lands, the following criteria must be met (MM WIL-CEQA-9; BLM 2018c; CPUC and BLM 2011):

- Be deposits of aeolian or fine windblown sands typically associated with dunes, washes, hillsides, and margins of dry lakes, with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat.
- To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard.

- To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation.
- Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed.
- Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible.
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration.
- Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat.
- Not be subject to property constraints (i.e., mineral leases, cultural resources).
- Be on land for which long-term management is feasible.

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2B.8 PLANT AND WILDLIFE SPECIES CONSERVATION MEASURES PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Plant and Wildlife Species Conservation Measures Plan

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Plant and Wildlife Species Conservation Plan

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ACRONYMS AND ABBREVIATIONS

ADA	Arizona Department of Agriculture
ANPL	Arizona Native Plant Law
APM	Applicant Proposed Measure
A.R.S.	Arizona Revised Statute
AZGFD	Arizona Game and Fish Department
BGEPA	Bald and Golden Eagle Protection Act
BIO	Biological Mitigation Measure
BLM	Bureau of Land Management
BMP	Best Management Practice
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CMA	Conservation and Management Action
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Ranking
DCRT	Delaney Colorado River Transmission, LLC
DFA	Development Focus Area
DRECP	Desert Renewable Energy Conservation Plan
EIS	Environmental Impact Statement
ESA	Endangered Species Act
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
MOU	Memorandum of Understanding
Plan	Plant and Wildlife Species Conservation Plan
POD	Plan of Development
Project	Ten West Link Transmission Project
ROW	Right-of-way
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
VEG	Vegetation Mitigation Measure
VPL	Variance Process Lands

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1 Introduction

The data and information provided in this Plant and Wildlife Species Conservation Measures Plan (Plan) is for the Ten West Link Transmission Project (Project) proposed by Delaney Colorado River Transmission, LLC (DCRT). The purpose of the Plan is to assist the Project meeting their obligations to protect biological resources during the planning, design, and implementation of the Project using the Bureau of Land Management (BLM) principles and procedures designed for high-voltage transmission line projects.

The Plan presents the anticipated impacts on plant and wildlife resources associated with the Project and identifies the Best Management Practices (BMPs), stipulations, protocols, and/or techniques required to reduce these impacts. This Plan implements actions to minimize any likelihood for a "take" on the federally and state threatened and endangered species. No aquatic biological measures will be addressed in this Plan. Protection of water resources and BMPs identified are included in Appendix G in the Project's Plan of Development (POD). Comprehensive information and restrictions will be outlined on the Environmental Maps provided in Appendix A, Volume II of the POD.

1.1 Organization of the Plan

To facilitate the review and understanding of this Plan, the following is organized into four primary sections:

1. Introduction – Presents the overall summary of the Plan.

2. Regulatory Framework – Provides descriptions of relevant regulatory requirements and agencies with specific authority over the laws and regulations associated with the Plan.

3. Plant and Wildlife Concerns – Outlines the types of impacts that would affect plant and wildlife species within the Project area.

4. Mitigation Measures for Special Status Species – Describes each designated resource and their potential occurrence in the Project area; specific agency concerns and impacts for which mitigation was identified; and the appropriate Applicant Proposed Measures (APMs) and BMPs to address concerns and reduce impacts during design, construction, operation, and maintenance of the Project.

5. Seasonal Restrictions – Describes timeframes during which Project activities are spatially/temporally restricted due to activities of specific species as described by the BMPs.

6. The Mojave Desert Tortoise Protection and Compensation Plan (California only) – Provides descriptions, regulatory requirements, and protocols for protection and preservation of the Mojave desert tortoise (*Gopherus agassizii*).

2 Regulatory Framework

The following federal authorities, regulations, Resource Management Plans, initiatives, and general guidelines are applicable to the Project. These regulations provide the framework that the Project must wholly comprehend and comply with.

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act of 1973

Administered by the United States Fish and Wildlife Service (USFWS), the Endangered Species Act (ESA) of 1973, as revised, was established to protect species at risk of becoming extinct (16 United States Code [U.S.C.] § 1531). As amended in Section 7 (a)(2), the USFWS requires that "*Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species …*"

The ESA includes multiple layers of protection where endangered species are the most in danger of becoming extinct, threatened species are at risk of becoming endangered, and candidate species are those that are being considered for listing as threatened or endangered. Under Section 9 of the ESA, a "take" is defined as to harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

2.1.2 Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act is a national law governing the way the BLM administers public lands. Section 102(a)(8) (43 U.S.C. § 1701) declares "*public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.*"

2.1.3 Migratory Bird Treaty Act

The regulatory framework protecting birds includes the ESA, the Migratory Bird Treaty Act (MBTA) of 1918, codified in 16 U.S.C. § 703-712, and subsequent amendments. The MBTA decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected and addresses the destruction or removal of active nests of those species. Under this Act, it is unlawful to pursue, hunt, take, capture, kill, possess, offer to or sell, barter, purchase, deliver, transport, or receive any migratory birds (including parts, nests, eggs or other product, manufactured or not). In practice, most bird species with non-migratory life-histories are protected under the MBTA, as well. Virtually all native bird species in the United States are protected under MBTA, with the exception of upland game birds (order Galliformes: e.g., grouse and quail). While the USFWS is the lead federal agency charged with protecting migratory birds within the United States, under Executive Order 13186 all

other federal agencies are charged with conserving and protecting migratory birds and the habitats on which they depend.

2.1.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act ([BGEPA]; 16 U.S.C. § 668-668d; 50 Code of Federal Regulations [CFR] Part 22) of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting, except under certain specified conditions, the take, possession, and commerce of any bald or golden eagles, alive or dead, including any part, nest, or egg. The BGEPA authorizes take of eagles "where the take is compatible with the preservation of the bald eagle and the golden eagle; it is necessary to protect an interest in a particular locality; is associated with, but not the purpose of, the activity; and cannot practicably be avoided" (50 CFR Part 22.26).

2.1.5 BLM Special Status Species Management Policy

In BLM Manual 6840, the Special Status Species Management Policy authorizes each BLM state director to designate sensitive species within their respective jurisdictions and protect them on BLM-administered lands. Each state has their own process for sensitive species list development; however, BLM-sensitive species may require specific protection measures. BLM special status species are: 1) species listed or proposed for listing under the ESA; and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as BLM sensitive by the State Director(s). All federal candidate species, proposed species, and delisted species in the five years following delisting are considered BLM sensitive species.

2.1.6 Executive Order 13186

Executive Order 13186 requires federal agencies to protect migratory birds and to consider impacts on migratory bird species during project planning. This Executive Order declares that "*each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the* [USFWS] *that shall promote the conservation of migratory bird populations*."

2.1.7 BLM Memorandum of Understanding to Promote Conservation of Migratory Birds

BLM MOU WO-230-2010-04 (*MOU between the* [BLM] *and* [USFWS] *to Promote the Conservation of Migratory Birds*) directs the BLM to evaluate the effects of BLM's action on migratory birds on a project level and implement approaches to reduce these effects.

2.2 State Regulations

2.2.1 Arizona Revised Statute Title 17

The Arizona Revised Statute (A.R.S.) Title 17 establishes and defines the organization and management of the Arizona Game and Fish Department (AZGFD) and Commission and covers the organizational responsibilities, conservation, fishing and hunting, funding, and other regulations related to wildlife.

2.2.2 Arizona Native Plant Law

The Arizona Department of Agriculture maintains a list of plants protected under the A.R.S. Title 3, Chapter 7, Section R3-3-208; the Arizona Native Plant Law (ANPL). It was enacted to protect rare plant species and to protect some species from being over harvested.

2.2.3 State Comprehensive Wildlife Conservation Strategy

Congress mandated each state to establish a Comprehensive Wildlife Conservation Strategy that directs the integration and implementation of ongoing and planned management actions and provides a primary conservation tool for keeping fish and wildlife in healthy populations and off the list of threatened or endangered species. Each state was required to develop a State Wildlife Action Plan by the year 2005. For Arizona, it was heavily revised in subsequent years into the current 2012-2022 Arizona's State Wildlife Action Plan (AZGFD 2012). California's first State Wildlife Action in 2005 was completed by the California Department of Fish and Game (now the California Department of Fish and Wildlife [CDFW]) and was updated in 2015 (CDFW 2015).

2.2.4 California Endangered Species Act

The CDFW established the California Endangered Species Act (CESA) as a policy of the state to protect any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (California Fish and Game Code [CFGC] § 2062). For projects that affect both a federally- and state-listed species, compliance with an ESA "incidental take authorization" can satisfy the CESA if the CDFW determines that it is "consistent" with CFGC § 2080.1.

2.2.5 California Code of Regulations Title 14

The official California Code of Regulations Title 14 defines the organization and management of the CDFW and addresses the organizational responsibilities, conservation, fishing and hunting, funding, and other regulations related to wildlife. In addition, it identifies the different conservancy organizations across the state that oversee specific conservation areas.

2.2.6 California Environmental Quality Act

Section 15380 (B) of the California Environmental Quality Act (CEQA) states that a species is considered rare if "the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act." In addition, any species of concern should be included in project-impacts analysis (California Public Resources Code § 15380).

The California Public Utilities Commission (CPUC) is responsible for determining if the Project will be constructed in accordance with CEQA requirements and issue to DCRT a Certificate of Public Convenience and Necessity for transmission infrastructure within California. The following list briefly identifies the Mitigation Measures (MM) under CEQA

related to special status species; further details for each MM are provided in Appendix 1C of the Draft Environmental Impact Statement (EIS):

- **MM BIO-CEQA-1.** Implement biological resources APMs, BLM BMPs, and Conservation and Management Actions (CMAs; see Section 2.2.7).
- **MM BIO-CEQA-2.** Implement a Worker Environmental Awareness Program.
- **MM BIO-CEQA-3.** Implement biological construction monitoring.
- **MM VEG-CEQA-1.** Develop and implement a Vegetation Management Plan.
- **MM VEG-CEQA-2.** Conduct pre-construction floristic surveys.
- **MM VEG-CEQA-3.** Conduct focused surveys for Harwood's eriastrum (*Eriastrum harwoodii).*
- **MM VEG-CEQA-4.** Compensation for impacts to special status plant species and sensitive communities.
- **MM WIL-CEQA-1.** Develop and implement an Avian Management and Protection Plan and Bird and Bat Conservation Strategy.
- **MM WIL-CEQ-2.** Develop and implement a Raven Management Plan.
- **MM WIL-CEQA-3**. Develop and implement a Burrowing Owl Avoidance, Minimization, and Mitigation Plan.
- **MM WIL-CEQA-4.** Develop and implement a Bat Management and Protection Plan.
- **MM WIL-CEQA-5**. Conduct pre-construction surveys for maternity colonies or hibernaculum for roosting bats.
- **MM WIL-CEQA-6**. Conduct pre-construction surveys for nesting and breeding.
- **MM WIL-CEQA-7.** Conduct focused pre-construction burrowing owl surveys.
- **MM WIL-CEQA-8.** Conduct pre-construction protocol surveys for Arizona bell's vireo (*Vireo bellii*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and willow flycatcher (*Empidonax traillii*); avoid occupied habitat; compensate impacts.
- **MM WIL-CEQA-9**. Compensation for impacts to Mojave fringe-toed lizard (*Uma scoparia*).
- **MM WIL-CEQA-10.** Compensation for impacts to Mojave desert tortoise.
- **MM WIL-CEQA-11**. Conduct pre-construction surveys for listed and special status terrestrial herpetofauna and compensation for impacts.

2.2.7 Desert Renewable Energy Conservation Plan and Land Use Plan Amendment

The Desert Renewable Energy Conservation Plan (DRECP), implemented by the Land Use Plan Amendment (LUPA), is a landscape-scale planning effort to both identify specific

development focus areas for high-quality renewable energy and transmission access within areas where environmental impacts can be managed and mitigated, while simultaneously providing for long-term conservation and management of BLM designated special status species and associated habitats (BLM 2016).

In addition to BLM designated sensitive or "special status" species, species that conservation and management are provided for in the DRECP LUPA are identified as "Focus" species. Both Focus and BLM special status species are addressed in the CMAs applicable for the Project throughout this Plan. Developed from the DRECP LUPA, the CMAs are contained in another land use planning process called the California Desert Conservation Area (CDCA) Plan, see Section 2.2.8 below.

2.2.8 California Desert Conservation Area Plan

The CDCA Plan, first published in 1980, covers a total of 25-million acres of BLM administered lands. This plan was a first step towards conflict resolutions on land use management within the area after Congress enacted the Federal Land Policy and Management Act of 1976. This act directed BLM to inventory the CDCA and its resources and develop this plan. It was amended to include protection for the BLM sensitive Harwood's eriastrum in California (Chapter 2 of the Draft EIS; BLM 1980).

Specific CMA standards are required to be incorporated with all activities of the Project via MM BIO-CEQA-1 and the CDCA Plan. The APMs and BMPs that have been developed/identified for the Project comply with the CMAs. Multiple CMA standards are reflected in more than one APM or BMP. The following list briefly identifies the relevant CMA standard related to special status species; further details are provided in Appendix 1C and 2C of the Draft EIS:

- **LUPA-BIO-1.** Conduct a habitat assessment of Focus and BLM special status species' suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat for Focus and BLM special status species.

- **LUPA-BIO-2.** Designated biologist(s), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective.

- **LUPA-BIO-3.** Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources.

- **LUPA-BIO-4.** For activities that may impact Focus and BLM special status species, implement all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities.

- **LUPA-BIO-5.** All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM.

- **LUPA-BIO-6**. Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites.

- **LUPA-BIO-8.** All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM.

- **LUPA-BIO-9.** Implement the LUPA CMA standards to protect water and wetland dependent resources.

- **LUPA-BIO-10.** Consistent with BLM state and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate

- **LUPA-BIO-11.** Implement control of nuisance animals and invasive species to avoid and minimize impacts to special status species and their habitats.

- **LUPA-BIO-13.** Implement project siting and design standards that avoid impacts to habitat and suitable habitat for Focus and BLM special status species.

- **LUPA-BIO-14.** Implement general standard practices to protect Focus and BLM special status species including wildlife feeding, wildlife encounters, domestic pets, visual check of construction materials prior to use, trenches/excavations, and vegetation removal, to the extent practical.

- **LUPA-BIO-15.** Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

- **LUPA-BIO-16.** For activities that may impact Focus and BLM sensitive birds protected by the ESA and/or MBTA, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions.

- **LUPA-BIO-17.** For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a Bird and Bat Conservation Strategy will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality.

- **LUPA- BIO-RIPWET-1.** The riparian and wetland DRECP vegetation types and other features listed in the Draft EIS (Table 17) will be avoided to the maximum extent practicable, except for allowable minor incursions with the specified setbacks.

- **LUPA-BIO-RIPWET-3**. For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM Special Status riparian and wetland bird species, conduct a pre-construction/activity nesting bird survey for BLM special status riparian and wetland birds according to agency-approved protocols.

- **LUPA-BIO-DUNE-1.** Because DRECP sand dune vegetation types and aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or aeolian sand transport corridors must conduct studies to verify the location (Appendix D of the Draft EIS) and extent of the sand resource(s) for the activity-specific environmental analysis.

- **LUPA-BIO-DUNE-2.** Activities that potentially affect the amount of sand entering or transported within aeolian sand transport corridors will be designed and operated to; maintain quality and function of aeolian sand transport corridors and sand deposition zones; avoid reduction in sand-bearing sediments within habitat; and minimize mortality to DUNE-associated Focus and BLM Special Status species.

- **LUPA-BIO-DUNE-4**. Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center.

- **LUPA-BIO-DUNE-5**. If suitable habitat characteristics are identified during the habitat assessment, clearance surveys for Mojave fringe-toed lizard will be performed in suitable habitat areas.

- **LUPA-BIO-BAT-1**. Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below.

- **LUPA-BIO-PLANT-1.** Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant Focus and BLM special status species.

- **LUPA-BIO-PLANT-2.** Implement an avoidance setback of 0.25 mile for all Focus and BLM special status species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species.

- **LUPA-BIO-PLANT-3.** Impacts to suitable habitat for Focus and BLM special status plant species should be avoided to the extent feasible and are limited [capped] to a maximum of one percent of their suitable habitat throughout the entire LUPA Decision Area.

- **LUPA-BIO-SVF-1.** For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: yucca clones, creosote rings, saguaro cacti, Joshua tree woodland, microphyll woodland, and thorn stands.

- **LUPA-BIO-SVF-6.** Microphyll woodland: impacts to microphyll woodland will be avoided, except for minor incursions.

- **LUPA-BIO-VEG-2**. Management of cactus, yucca, and other succulent species will adhere to current up-to-date BLM policy.

- **LUPA-BIO-VEG-3.** Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

- **LUPA-BIO-IFS-3.** All culverts for access roads or other barriers will be designed to allow unrestricted access by Mojave desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.

- **LUPA-BIO-IFS-5.** Following the clearance surveys within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way.

- **LUPA-BIO-IFS-6.** When working in areas where protocol or clearance surveys are required (see Appendix D), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.

- **LUPA-BIO-IFS-7**. A designated biologist will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.

- **LUPA-BIO-IFS-8.** Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing.

- **LUPA-BIO-IFS-11**. If Bendire's thrasher (*Toxostoma bendirei*) is present, conduct appropriate activity-specific biological monitoring to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

- **LUPA-BIO-IFS-12**. If burrowing owls (*Athene cunicularia*) are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656 feet setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

- **LUPA-BIO-IFS-13.** If burrows of burrowing owls cannot be avoided on-site, passive burrow exclusion by a designated biologist) through the use of one-way doors will occur according to the specifications in Appendix D of the Draft EIS or the most up-to-date agency BLM or CDFW specifications.

- **LUPA-BIO-IFS-14.** Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

- **LUPA-BIO-IFS-24.** Provide protection from loss and harassment of active golden eagle (*Aquila chrysaetos*) nests through activities that may impact nesting golden eagles, will not be sited or constructed within 1.0-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.

- **LUPA-BIO-IFS-25.** Cumulative loss of golden eagle foraging habitat within a one to four mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20 percent.

- **LUPA-BIO-IFS-26.** For activities that impact golden eagles, applicants will conduct a risk assessment per the applicable USFWS guidance using best available information as well as the data collected in the pre-project golden eagle surveys.

- **LUPA-BIO-IFS-27**. If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.

- **LUPA-BIO-COMP-1.** Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA decision area will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-COMP-2 through -4, and previously listed CMAs.

- **LUPA-BIO-COMP-2**. The compensation for the mortality impacts to bird and bat Focus and BLM special status species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every five years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity.

- **LUPA-SW-13**. BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.

- **LUPA-SW-16.** The 100-year floodplain boundaries for any surface water feature in the vicinity of the project will be identified. If maps are not available from the Federal Emergency Management Agency, these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.

- **LUPA-TRANS-BIO-1.** Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the Common Raven (*Corvus corax*), and minimize collision risks for birds and bats.

- **LUPA-TRANS-BIO-2**. Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water.

- **LUPA TRANS-BIO-3.** When siting transmission activities, the alignment should avoid, to the maximum extent practicable, being located across canyons or on ridgelines.

- **LUPA-TRANS-BIO-4.** Siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in aeolian corridors, rare vegetation alliances and Focus and BLM special status species. Transmission substations will be sited to avoid aeolian corridors, rare vegetation alliances, and sand-dependent Focus and BLM Special Status Species habitats.

- **DFA-VPL-BIO-DUNE-1.** Activities in the North American Warm Desert Dune and Sand Flats (Development Focus Areas [DFAs] and Variance Process Lands [VPLs]), including transmission substations, will be sited to avoid dune vegetation.

- **DFA-VPL-BIO-DUNE-2**. Within aeolian corridors that transport sand to dune formations and vegetation types downwind inside and outside of the DFAs, all activities will be designed and operated to facilitate the flow of sand across activity sites and avoid the trapping or diverting of sand from the aeolian corridor.

- **DFA-BIO-IFS-1**. Conduct the following surveys as applicable in the DFAs as shown in Table 21 of the DRECP LUPA.

- **DFA-BIO-IFS-2**. Implement the following setbacks shown below in Table 22 of the DRECP LUPA as applicable in the DFAs.

3 Plant and Wildlife Concerns

The plant and wildlife species covered under state and federal ESAs and/or MBTA that may potentially occur within the Project area are organized in the following categories:

- Special Status Plants
- Special Status Wildlife
- Migratory Birds

Resource surveys are required to determine the presence or absence of BLM, USFWS, DRECP (USFWS 2016a), state sensitive plant and wildlife species, active raptor nests, and noxious weeds within the Project area. This Plan identifies APMs and BMPs that will be implemented to protect specific plants, wildlife, and migratory birds in the Project area and ensure the Project is consistent with management objectives to protect biological resources. Specific impacts on plant and wildlife resources are defined in the following sections.

3.1 Disturbance and Displacement

For wildlife and plants within and adjacent to the Project right-of-way (ROW), disturbance and displacement will result in temporary changes in habitat use during construction activities, long-term changes due to the presence of Project features (e.g., transmission structures and facilities), and an increase in human activity associated with Project operation and maintenance.

The introduction and/or spread of noxious weeds further increases competition and displacement of native plant species; decreases food resources for native wildlife to survive; and increases the likelihood of wildfires. Disturbance also impacts natural soil structure and hydrology resulting in displacement or loss of plant species and can ultimately alter habitat types. Implementation of measures compatible with the Project design standards is required to minimize disturbance and displacement of wildlife and plants as a result of the Project construction, operation, and maintenance activities.

3.2 Habitat Loss and Fragmentation

Permanent loss and fragmentation of plant and wildlife habitat will occur as a result of the Project, due to clearing and grading of access roads and work areas; installation of transmission structures; and vegetation management within the ROW. Habitat loss as a result of these land conversion actions is the most common impact on native wildlife limiting resources and biodiversity. In addition, significant construction actions can alter habitats that potentially fragment previously connected populations; however, it is unlikely for the Project due to the fact that the majority of construction is within previously disturbed areas of vast desert paralleling existing transmission lines and highways, a restoration plan is in place for temporary disturbances (see Appendix L-1 of the POD), and the aerial nature of transmission lines do not typically result in fragmented populations. Implementation of measures compatible with the Project design standards is required to minimize habitat loss and resources to the extent practical.

3.3 Plant and Wildlife Mortality

Project activities will result in some mortality of plants and possibly wildlife with limited mobility; more specifically, mortality risks are higher during vegetation management, clearing, and/or grading operations associated with construction, operation, and maintenance of the Project. Wildlife species that occupy burrows may experience mortality if burrows are damaged or destroyed by heavy machinery. In addition, there will be an increased potential for avian mortality due to collisions with shield wires/fiber optical ground wire and/or conductors.

The presence of transmission line structures will increase perching and roosting opportunities for raptors and corvids, leading to increased predation on potential sensitive wildlife species. Additionally, herbicide use for weed treatments, may affect sensitive plant species, resulting in mortality. Implementation of mitigation measures compatible with the Project design standards is required to reduce the potential for increased plant and wildlife mortality.

4 Mitigation Measures for Special Status Species

This section of the Plan outlines the APMs and BMPs relevant for plant and wildlife resources previously discussed (BIO refers to biological mitigation measure; VEG refers to vegetation mitigation measure). The discussion is organized to provide an overview of each designated resource and their potential for occurrence in the Project area, agency concerns and impacts for which mitigation was identified, and the appropriate APMs and BMPs to address concerns and reduce impacts during design, construction, operation, and maintenance of the Project.

4.1 Special Status Plants

4.1.1 Background

As described in Chapter 3 of the Draft EIS, no plant species currently listed or proposed for listing under the ESA or CESA are anticipated to be present within the Project area. In Arizona, a total of 11 plant species classified as sensitive by the BLM have potential to be found in or near the Project area. Under the ANPL, a total of 33 plant species were listed with potential to be found in or near the Project area (Draft EIS Appendix 3).

In California, the BLM grants sensitive status to designated plants with a California Rare Plant Rank (CRPR) of 1B (rare, threatened, or endangered in California). Based on a review of the California Native Plant Society online inventories and CDFW's Natural Diversity Database, a total of 15 special status plant species were identified to have potential to be present in or near the Project area (Draft EIS Appendix 3). Table F-2-1 lists the special status plant species with their associated status (CRPR, ANPL, and/or BLM Sensitive) and their potential to occur within or near the Project area.

TABLE F-2-1 SPECIAL STATUS PLANT SPECIES THAT MAY OCCUR WITHIN OR NEAR THE PROJECT AREA

Common Name	Scientific Name	Status[1]	Occurrence[2]
Abrams' spurge	*Euphorbia abramsiana*	CRPR-2B.2	Likely; suitable habitat and recorded presence north of Project.
Ajo lily	*Hesperocallis undulata*	ANPL-SR	Possible; not known to occur but suitable habitat present.
Alverson's foxtail cactus	*Coryphantha alversonii*	BLM: Sensitive[3]	Not likely; historically not recorded.
Barrel cactus	*Ferocactus wislizeni*	ANPL-SR	Likely; suitable habitat.
Beavertail cactus	*Opuntia basilaris var. basilaris*	ANPL-SR	Likely; known to occur and suitable habitat.
Beehive cactus	*Echinomastus johnsonii*	ANPL-SR	Unlikely; historically recorded near southern Arizona border.
Big galleta	*Pleuraphis (Hilaria) rigida*	BLM: Sensitive[3]	Likely; known to occur and suitable habitat.
Bigelow's nolina	*Nolina bigelovii*	ANPL-SR, HR	Possible; not known to occur but suitable habitat present.
Bitter hymenoxys	*Hymenoxys odorata*	CRPR-2B.1	Unlikely; low potential to occur along Colorado River, woodland washes.
Blue paloverde	*Parkinsonia florida*	ANPL-SA	Likely; known to occur and suitable habitat.
Blue sand lily	*Triteliopsis palmeri*	ANPL-SR	Unlikely; low potential in sandy areas but recorded along Arizona southern border.
Buckhorn cholla	*Cylindropuntia acanthocarpa var. acanthocarpa*	ANPL-SR	Unlikely; presence known north of Interstate 10 near McCoy Mountains and uncommon in sandy soils within Project area.
Bush muhly	*Muhlenbergia porteri*	BLM: Sensitive[3]	Likely; known to occur and suitable habitat.
California ditaxis	*Ditaxis serrata var. californica*	CRPR-3.2	Unlikely; presence known north of Interstate 10 near McCoy Mountains and uncommon in sandy soils within Project area.

Common Name	Scientific Name	Status[1]	Occurrence[2]
Catclaw acacia	*Acacia greggii*	BLM: Sensitive[3]	Likely; known to occur and suitable habitat.
Cottonwood	*Populus fremontii*	BLM: Sensitive[3]	Likely; known to occur and suitable habitat.
Crucifixion thorn	*Castela emoryi*	ANPL-SR	Unlikely; historically recorded near southern Arizona border.
Desert agave	*Agave deserti spp. simplex*	ANPL-SR	Unlikely; not known to occur but further north and west of Project area.
Desert holly	*Atriplex hymenelytra*	ANPL-SR	Possible; not known to occur but suitable habitat.
Desert unicorn-plant	*Proboscidea althaeifolia*	CRPR-4.3	Present within the Project area.
Desert willow	*Chilopsis linearis*	ANPL-SA	Likely; known to occur and suitable habitat.
Devil's cholla	*Grusonia kunzei*	ANPL-SR	Unlikely; no suitable habitat present.
Diamond cholla	*Cylindropuntia ramosissima*	ANPL-SR	Unlikely; historically recorded closer to southern borders.
Ditaxis claryana	*Glandular ditaxis*	CRPR-2B.2	Possible; not known to occur but suitable habitat present.
Dudleya	*Dudleya arizonica*	ANPL-SR	Possible; not known to occur but suitable habitat present.
Dune buckwheat	*Eriogonum deserticola*	BLM: Sensitive[3]	Not likely; historically not recorded.
Dwarf germander	*Teucrium cubense ssp. depressum*	CRPR-2B.2	Possible; not known to occur but suitable habitat present.
Elephant tree, torote	*Bursera microphylla*	ANPL-SR	Unlikely; historically recorded closer to southern borders.
Flat-seeded spurge	*Euphorbia platysperma*	CRPR-1B.2, BLM: Sensitive[3]	Possible; not known to occur but suitable habitat present.
Foothill paloverde	*Parkinsonia microphylla*	ANPL-SA	Possible; not known to occur but suitable habitat present.
Goodding's willow	*Salix gooddingii*	BLM: Sensitive3	Likely; known to occur and suitable habitat present.
Gravel milkvetch	*Astragalus sabulonum*	CRPR-2B.2	Possible; not known to occur but suitable habitat present.
Harwood's eriastrum	*Eriastrum harwoodii*	CRPR-1B.2, BLM: Sensitive	Present within the Project area.
Harwood's milkvetch	*Astragalus insularis var. harwoodii*	CRPR-2B.2	Present within the Project area.
Hedgehog cactus	*Echinocereus engelmannii var. chrysocentrus*	ANPL-SR	Likely; suitable habitat present.
Ironwood	*Olneya tesota*	ANPL-SA, HR	Possible; not known to occur but suitable habitat present.
Kearney sumac	*Rhus kearneyi spp. kearneyi*	ANPL-SR	Likely; suitable habitat present.
Las Animas colubrina	*Colubrina californica*	CRPR-2B.3	Unlikely; presence north of Interstate 10 and uncommon in sandy soils within Project area.
Long leaf sandpaper plant	*Petalonyx linearis*	BLM: Sensitive[3]	Not likely; historically not recorded.
Mesquite	*Prosopis spp.*	ANPL-SA, HR	Likely; suitable habitat present.

Common Name	Scientific Name	Status[1]	Occurrence[2]
Night blooming cereus	*Peniocereus greggii*	ANPL-SR	Possible; not known to occur but suitable habitat present.
Ocotillo	*Fouquieria splendens*	ANPL-SR	Likely; suitable habitat present.
Parish wild onion	*Allium parishii*	ANPL-SR	Possible; not known to occur but suitable habitat present.
Desert Christmas cactus	*Cylindropuntia leptocaulis*	ANPL-SR	Possible; not known to occur but suitable habitat present.
Pincushion cactus	*Mammillaria tetrancistra*	ANPL-SR	Unlikely; low potential to occur in desert woodlands.
Pink fairy-duster Ribbed cryptantha	*Calliandra eriophylla*	CRPR-2B.3	Unlikely; low potential to occur in desert woodlands.
Queen-of-the-night	*Peniocereus greggii var. transmontanus*	ANPL-SR	Unlikely; historically recorded closer to southern borders.
Ribbed cryptantha	*Cryptantha costata*	CRPR-4.3	Present within the Project area.
Saguaro cactus	*Carnegiea gigantea*	ANPL-SR, CRPR-2B.2	Present within the Project area.
Sand food	*Pholisma sonorae*	ANPL-HS	Unlikely; low potential to occur in desert sandy areas and historically recorded closer to southern borders.
Scaly sandplant	*Pholisma arenarium*	ANPL-HS	Possible; not known to occur but suitable habitat present.
Scrub oak	*Quercus turbinella*	BLM: Sensitive[3]	Likely; known to occur and suitable habitat.
Silver cholla	*Cylindropuntia echinocarpa*	ANPL-SR	Present within the Project area.
Smoke tree	*Psorothamnus spinosus*	ANPL-SA	Possible; not known to occur but suitable habitat present.
Teddy-bear cholla	*Cylindropuntia bigelovii*	ANPL-SR	Present within the Project area.
Utah vine milkweed	*Funastrum utahense*	CRPR-4.2	Possible; not known to occur but suitable habitat present.
Winged cryptantha	*Cryptantha holoptera*	CRPR-4.3	Present within the Project area.

[1]As listed in the Draft EIS Appendix 3 including the following status levels:
ANPL = Arizona Native Plant Law, statuses include: HS = Highly Safeguarded, SR = Salvage Restricted, SA = Salvage Assessed, HR = Harvest Restricted;
CRPR = California Rare Plant Ranking, statuses include 1A = Plants presumed extirpated in California and either rare or extinct elsewhere, 1B = Plants rare, threatened, or endangered in California and elsewhere, 2A = Plants presumed extirpated in California, but common elsewhere, 2B = Plants rare, threatened, or endangered in California, but common elsewhere, 3 = Plants about which more information is needed (review list), 4 = Plants of limited distribution (watch list), 0,1 = Seriously endangered in California, 0.2 = Fairly endangered in California, 0.3 = Not very endangered in California
BLM: Sensitive = BLM special status species.
[2]Sources: BLM 2006, BLM 2008, BLM 2010, BLM 2012a, BLM 2012b, BLM 2014, AZGFD 2015.
[3]Not on the BLM sensitive species list in AZ

4.1.2 Mitigation Measures for Plant Species

Based on the concerns of federal and state agencies discussed in Section 3, the key mitigation strategy for reducing impacts to special status plant species is to require surveys and avoidance of populations where they are detected (BMP BIO-24). The AMPs and BMPs (and their associated CEQA and CMA requirements) applicable to minimize potential adverse effects to special status plant species and their habitats include the following

(derived from Appendix 2B and 2C of the Draft EIS; will be updated when the EIS is finalized):

- **APM/BMP BIO-1**. Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the federal and state ESAs and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special status species as well as a discussion of avoidance and minimization measures. The worker education program would provide interpretation for non-English speaking workers. (Addresses MM BIO-CEQA-1; CMA LUPA-BIO-5)

- **APM/BMP BIO-3.** The BLM would approve areas to be used for stockpiling, vehicle parking, or other construction support activity that would occur outside established work areas. (Addresses MM WIL-CEQA-9/10/11; CMA LUPA-BIO-13)

- **APM BIO-4.** Environmentally sensitive areas, such as the riparian areas, xeroriparian washes, and other habitat of special status species, would be identified in the field. Barrier fences or stakes would be installed at the edge of the easement or around the sensitive area to minimize the possibility of inadvertently encroaching into sensitive habitat. (Addresses MM VEG-CEQA-1/2/4, WIL-CEQA-10, and WIL-CEQA-11; CMA LUPA-BIO-3 and LUPA-BIO-13)

- **APM BIO-10.** The BMPs included in the Stormwater Pollution Prevention Plan would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as described previously (AQ-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access).

- **APM/BMP BIO-11.** The Vegetation Management Plan would be approved by the BLM and implemented. That Plan describes the surveys, permitting, fee payments, and plant protection to be conducted in areas where Project design would not eliminate the need for vegetation control for the project to be in compliance with North American Electric Reliability Corporation requirements. Vegetation would be trimmed or otherwise controlled for safe operation of the transmission line and would be designed to minimize impacts on special status species to the extent practicable. The Plan also would describe how vegetation would be salvaged, as needed, in order to comply with the applicable ANPL and California regulations. (Addresses MM VEGA-CEQA-1/2/3; CMA LUPA-BIO-9)

- **APM BIO-12**. A Noxious Weed Management Plan would be prepared, approved by the BLM, and implemented to address potential impacts associated with the spread and establishment of noxious weeds. (Addresses MM VEG-CEQA-1; CMA LUPA-BIO-6/10/11)

- **APM BIO-13.** Riparian areas and xeroriparian drainages that occur within the easement would be denoted as environmentally sensitive areas and must be avoided during construction to the extent practicable. Existing topography would be restored after construction is complete, to pre-Project conditions to extent possible. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-1 and LUPA-BIO-13)

- **APM BIO-14.** In areas with suitable topography, minimal or no vegetation clearing and soil disturbance would be conducted for site access and construction (i.e., overland driving/overland access). Overland driving/overland access would be used in areas that support the necessary construction equipment. Upgrading of existing access roads and construction of new access roads would be implemented as necessary for safe construction activities. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-14)

- **APM/BMP BIO-15 (California only).** A Habitat Restoration and Monitoring Plan would be developed, approved by BLM, and implemented for construction and operation of the Project. Revegetate all sites disturbed during construction that would not be required for operation of the transmission line, and restore disturbed areas to the extent practicable, given the arid desert environment. The Plan would describe in detail methods for surveying and characterizing vegetation in disturbed areas before construction; topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. It would be designed to reduce impacts on special status species to the extent practicable. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-7/8/10)

- **APM BIO-16.** Measures would be implemented to minimize the number of saguaro cacti that must be relocated for the safe construction and operation of the transmission line. In accordance with the Vegetation Management Plan, a survey of saguaros within the ROW would be conducted before construction and where possible, the transmission line would be designed to minimize the number of saguaros affected by adjusting tower locations and conductor height. The Plan would address plant salvaging, storing, and replanting requirements and methods, only saguaro that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if they cannot be avoided through Project design. When possible, saguaro that must be removed would be relocated as directed by the BLM and state agency protocols. Monitoring and management of saguaros during operations would occur as described in the Vegetation Management Plan. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-SVF-1)

- **APM BIO-17.** Vehicular travel would be limited to established roads to the maximum extent practicable. (Addresses MM WIL-CEQA-9/10/11; CMA LUPA-BIO-13)

- **BMP BIO-24.** A survey would be conducted during the appropriate time of year of the selected route to identify special status plant species and imperiled or sensitive vegetation alliances. Where possible, and as required by the BLM, special status species and vegetation alliances would be avoided during construction. This survey would be restricted to non-cultivated land. (Addresses MM VEG-CEQA-2/3/4; CMA LUPA-BIO-1**,** LUPA-BIO-PLANT-1, and LUPA-BIO-SVF-1)

- **APM BIO-26.** An inventory of plants protected under the ANPL would be conducted on State Trust lands as required by the Arizona State Land Department. Similar surveys would be conducted on lands managed by BLM, as directed by that agency.

- **BMP BIO-31 (California only)**. Implementation of requirements specific to Harwood's eriastrum; further details provided in the Harwood's eriastrum Linear ROW Protection Plan; see Appendix F-8 of the POD. (Addresses MM VEG-CEQA-3 and VEG-CEQA-4; CMA LUPA-BIO-1/3/4/6/13, LUPA-BIO-DUNE-2, LUPA-BIO-PLANT-2, and LUPA-BIO-PLANT-3)

- **BMP BIO-32.** Species-specific seasonal restriction dates would be observed. (Addresses CMA LUPA-BIO-4 and LUPA-BIO-DUNE-5)

- **BMP BIO-37.** The collection of native plants on site is prohibited without required permits and tags. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-14)

- **BMP BIO-41.** Management of cactus, yucca, and other succulents would adhere to current up-to-date BLM policy. All activities would follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents. Preconstruction surveys of disturbance zones would include preparation of maps delineating special vegetation features. BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.

- **BMP BIO-42.** Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis. (Addresses CMA LUPA-BIO-VEG-2)

- **BMP BIO-46 (California only).** Any loss of desert riparian woodland would be compensated at the ratio of 5:1 (ratio of compensation is California only); compensation requirements may be fulfilled through restoration and enhancement, land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization. (Addresses CMA LUPA-BIO-17 and LUPA-BIO-COMP-1)

- **BMP BIO-47.** BLM would manage all riparian areas to be maintained at, or brought to, proper functioning condition. (Addresses CMA LUPA-BIO-17, LUPA-BIO-RIPWET-1, and LUPA-SW-13)

- **BMP BIO-51.** To minimize vegetation trimming, micro-siting and design considerations (including tower height) would be applied so the catenary formed by the conductors (the bottom of the sag) avoids saguaros and is not directly over wash vegetation, to the extent practicable. (Addresses MM VEG-CEQA-1; CMA LUPA-BIO-17, LUPA-BIO-RIPWET-1, and LUPA-BIO-SVF-6)

- **BMP BIO-52 (California only).** For California portions, apply a 200-foot setback from the outer perimeter of Coloradan semi-desert wash woodland/scrub vegetation. Preconstruction surveys of disturbance zones would include preparation of maps delineating special vegetation features. Minor incursions would be allowed to balance minimizing vegetation trimming (BIO-51), while maintaining an

appropriate setback, as determined based on site-specific conditions. (Addresses VEG-CEQA-1/2/4; CMA LUPA-BIO-3/13/17, LUPA-BIO-RIPWET-1, LUPA-BIO-SVF-1, and LUPA-BIO-SVF-6)

- **BMP BIO-53 (California only).** Project facilities would be sited to avoid dune vegetation. Unavoidable impacts to dune vegetation would be limited and access roads would be sited to minimize unavoidable impacts. Access road would be unpaved and designed and constructed to be at grade with the ground surface to avoid inhibiting sand transport. (Addresses MM VEG-CMA-1/2/3/4, WIL-CEQA-9, and WIL-CEQA-11; CMA LUPA-BIO-1, LUPA-BIO-13, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-4, LUPA-TRANS-BIO-4, and DFA-VPL-BIO-DUNE-1)

- **BMP BIO-54 (California only).** Within Aeolian corridors that transport sand to dune formations and vegetation types downward all activities, would be designed and operated to facilitate the flow of sand across activity sites, and avoid the trapping or diverting of sand from the Aeolian corridor. Structure design take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences would be designed to allow sand to flow through and not be trapped. (Addresses MM VEG-CEQA-1, VEG-CEQA-4, WIL-CEQA-9, and WIL-CEQA-11; CMA LUPA-BIO-1, LUPA-BIO-DUNE-1, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-4, LUPA-TRANS-BIO-4, and DFA-VPL-BIO-DUNE-2)

- **BMP BIO-55 (California only).** Construction of new roads and/or routes would be avoided within Focus and BLM Special Status Species' suitable habitat within identified linkages for those Focus and BLM Special Status Species unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas would have a goal of "no net gain" of Project roads and/or routes. (Addresses MM VEG-CEQA-1, VEG-CEQA-4, WIL-CEQA-8/9/10/11; CMA LUPA-BIO-13 and LUPA-BIO-DUNE-4)

- **BMP VEG-1.** Any removal of vegetation resources would be conducted in accordance with BLM Information Bulletin 2012-097. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-15 and LUPA-BIO-SVF-1)

- **BMP VEG-2.** Minimize natural vegetation removal through implementation of drive and crush or cut or mow vegetation rather than removing entirely. Locations for drive and crush travel or cut/mow would be determined in conjunction with the Access Road Plan; see Appendix K-1 of the POD. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-14)

4.2 Special Status Wildlife

4.2.1 Background

Special status wildlife species include species listed as threatened, endangered, or candidates under the federal ESA; classified as BLM sensitive; and/or listed under CESA. These species were queried through the USFWS Information for Planning and Conservation database (USFWS 2016b), BLM resource management plans, CDFW's Biogeographic Information and Observation System and Natural Diversity Database (CDFW 2016), Arizona Online Environmental Review, and related documents, as well as evaluating published and unpublished information regarding listed species in the Project area.

All species protected under the federal ESA are classified as special status species by the BLM. A total of six federally-listed species were identified with potential to be present in or near the Project area, which include three wildlife species: the threatened Mojave desert tortoise, endangered razorback sucker (*Xyrauchen texanus*) and the endangered Sonoran pronghorn (*Antilocapra americana sonoriensis)*. The other three species are migratory birds and can be found in Section 4.3. Table F-2-2 lists the special status wildlife species with their associated status (Arizona and California listings, BLM Sensitive and Focus species, and federal status, if applicable) and their potential to occur within or near the Project area.

For more detailed information and requirements related to the Mojave desert tortoise, see Section 6 that includes the Mojave Desert Tortoise Protection and Compensation Plan.

TABLE F-2-2 SPECIAL STATUS WILDLIFE SPECIES THAT MAY OCCUR WITHIN OR NEAR THE PROJECT AREA

Common Name	Scientific Name	Status[1]	Occurrence[2]
Reptiles			
Chuckwalla	*Sauromalus ater*	BLM: Sensitive in CA	Possible; not known to occur but suitable habitat present
Gila monster	*Heloderma suspectum*	Arizona: SGCN	Possible; not known to occur but suitable habitat present
Mojave desert tortoise	*Gopherus agassizii*	ESA: T Arizona: SGCN California: T; BLM: Sensitive and Focus in CA	Likely; known to be present on the Palo Verde Mesa around the Colorado River Substation
Mojave fringe-toed lizard	*Uma scoparia*	Arizona: SGCN; California: SSC BLM: Sensitive in AZ and CA	Likely; known to occur and suitable habitat present
Rosy boa	*Lichanura trivirgata*	BLM: Sensitive in CA	Unlikely; no suitable habitat present
Sonora mud turtle	*Kinosternon sonoriense*	California: SSC BLM: Sensitive in AZ and CA	Possible; not known to occur but suitable habitat along lower Colorado River
Sonoran coralsnake	*Micruroides euryxanthus*	Arizona: SGCN	Possible; not known to occur but suitable habitat present
Sonoran desert tortoise	*Gopherus morafkai*	Arizona: SGCN; BLM: Sensitive in AZ	Likely; known to occur and suitable habitat present
Amphibians			
Couch's spadefoot	*Scaphiopus couchii*	California: SSC BLM: Sensitive in CA	Likely; known to occur and suitable habitat present in and near ephemeral pools and agricultural areas in eastern portion of Project Area in California
Sonoran desert toad	*Bufo alvarius*	Arizona: SGCN; California: SSC	Possible; occurs within several miles of permanent or temporary water sources and may occur in a variety of habitats along Colorado River or agricultural drainages

Common Name	Scientific Name	Status[1]	Occurrence[2]
Fish			
Razorback sucker	*Xyrauchen texanus*	ESA: E Arizona: SGCN California: E; BLM: Sensitive in CA	Likely; suitable habitat along lower Colorado River and the transmission line would span critical habitat
Mammals			
Allen's (Mexican) big-eared bat	*Idionycteris phyllotis*	Arizona: SGCN; BLM: Sensitive in AZ	Unlikely; low potential to occur in desert woodlands
American badger	*Taxidea taxus*	California: SSC	Likely; known to occur and suitable habitat present
American beaver	*Castor canadensis*	Arizona: SGCN	Possible; potential to occur along Colorado River
Arizona myotis	*Myotis occultus*	Arizona: SGCN; California: SSC	Possible; not known to occur but suitable habitat present near water and wooded riparian areas in desert
Arizona pocket mouse	*Perognathus amplus*	Arizona: SGCN	Unlikely; suitable habitat present in Harquahala and Ranegras plains outside the Project area
Big free-tailed bat	*Nyctinomops macrotis*	Arizona: SGCN	Possible; inhabits arid lowlands and hills to 6,000 feet (1,800 meters) and roosts in crevices, buildings, and sometimes trees
California leaf-nosed bat	*Macrotus californicus*	Arizona: SGCN; California: SSC BLM: Sensitive in AZ and CA	Possible; not known to occur but suitable habitat present in lowland desert scrub
California myotis	*Myotis californicus*	Arizona: SGCN	Possible; not known to occur but suitable habitat present in desert caves, mines, crevices, and shrubs
Cave myotis	*Myotis velifer*	Arizona: SGCN; California: SSC BLM: Sensitive in AZ and CA	Possible; not known to occur but suitable habitat present in desert caves, mines, crevices, and shrubs
Colorado River cotton rat	*Sigmodon arizonae plenus*	Arizona: SGCN; California: SSC	Unlikely; occurs within riparian thickets, dense grass cover, and drier grassy areas. Likely rare or absent along Colorado River in the Project area
Desert bighorn sheep	*Ovis canadensis mexicana*	Arizona: SGCN; California: FP BLM: Sensitive in CA; BLM Focus Species in CA	Possible; occurs in all mountain ranges around the Project Area; existing habitat not typical of their preferences; however, their migration routes to available resources may cross the Project area
Pallid bat	*Antrozous pallidus*	California: SSC BLM: Sensitive in CA	Possible; not known to occur but suitable habitat present in rock crevices and near water

Common Name	Scientific Name	Status[1]	Occurrence[2]
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	California: SSC	Possible; occurs in rocky canyons roosting in rock crevices and trees; observed near shrubland but, not known to roost in shrubland
Sonoran pronghorn	*Antilocapra americana sonoriensis*	ESA: NSE Arizona: SGCN	Possible; suitable habitat present and a managed population (nonessential experimental population or NSE) within the Kofa National Wildlife Refuge may occur near or along Project area
Townsend's big-eared bat	*Corynorhinus townsendii*	California: SSC BLM: Sensitive in AZ and CA	Likely; not known to occur but occurs in desert caves, mines, crevices, and shrubs near water; potential foraging habitat along Colorado River and agricultural areas
Western yellow bat	*Lasiurus xanthinus*	California: SSC	Possible; not known to occur, but suitable habitat present in riparian areas
Yuma mountain lion	*Felis concolor brownii*	California: SSC	Unlikely; no suitable habitat from mountains to valley bottoms and present typically occurs where prey is abundant
Yuma myotis	*Myotis yumanensis*	BLM: Sensitive in CA	Possible; not known to occur but suitable habitat present including riparian, desert scrub, moist woodlands, and forests, typically near open water

Note: Avian species are within a separate table within this Plan (Table F-2-3).
[1]As listed in the Draft EIS Appendix 3 and will be updated once Final EIS is complete. Species listing include E = Endangered and T = Threatened; NSE = Nonessential experimental population; BLM focused species as designated under the DRECP LUPA; SGCN = Species of Greatest Conservation Need; BLM = Bureau of Land Management; FP = Fully Protected; SSC = Species of Special Concern.
[2]Source: USFWS 2016b.

4.2.2 Mitigation Measures for Wildlife Species

Based on the significant concerns of federal and state agencies discussed in Section 3, the key mitigation strategy for reducing impacts to special status wildlife species is to minimize habitat loss, wildlife mortality, and protect natural resources. The APMs and BMPs (and their associated CEQA and CMA requirements) applicable to minimize potential adverse effects to special status wildlife species and their habitats include the following:

- **APM/BMP BIO-1.** Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the federal and state ESAs and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special status species as well as a discussion of avoidance and minimization measures. The worker education program would provide interpretation for non-English speaking workers. (Addresses MM BIO-CEQA-1; CMA LUPA-BIO-5)

- **APM/BMP BIO-2.** Multiple biological monitors would be provided so any work site within habitat of special status species is monitored concurrently if needed. (Addresses MM BIO-CEQA-3, VEG-CEQA-2, WIL-CEQA-5/6/7/10/11; CMA LUPA-BIO-2, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-6, LUPA-BIO-IFS-7, LUPA-BIO-IFS-12, DFA-BIO-IFS-1, DFA-BIO-IFS-2, and LUPA-BIO-RIPWET-3)

- **APM BIO-4.** Establish environmentally sensitive areas in the field; install fencing, flagging or stakes around identified sensitive area easements to minimize encroachment. (Addresses MM VEG-CEQA-1/2/4, WIL-CEQA-10, and WIL-CEQA-11; CMA LUPA-BIO-3 and LUPA-BIO-13**)**

- **APM BIO-5.** Trash dumping, firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment. (Addresses CMA LUPA-BIO-6 and LUPA-BIO-14)

- **APM BIO-6.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the work area would be disposed of in closed trash containers. (Addresses CMA LUPA-BIO-6 and LUPA-BIO-14)

- **APM BIO-9.** All excavated steep-walled holes or trenches more than one-foot-deep would be covered at the end of each working day with plywood or similar material or would be provided with one or more escape ramps constructed of earth fill or wooden planks. Each trench or hole would be inspected for wildlife at the beginning of each work day and before such holes or trenches are filled. Wildlife found trapped in trenches or holes would be relocated to suitable habitat outside the work area. If possible, pipes and culverts greater than three inches in diameter would be stored on dunnage to prevent wildlife from taking refuge in them, to the extent feasible. (Addresses CMA LUPA-BIO-14)

- **APM BIO-13.** Riparian areas and xeroriparian drainages that occur within the easement would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. Existing topography would be restored to pre-Project conditions to the extent possible. (Addresses MM VEGA-CEQA-1/2/3; CMA LUPA-BIO-9)

- **APM BIO-18.** Control of construction activities and use of construction-related vehicles in the Copper Bottom Pass area would be maintained to ensure that only planned construction traffic is allowed in the area and that minimal trips are planned to minimize disturbance to bighorn sheep. This APM does not apply to non-construction related public use of the Copper Bottom Pass area.

- **APM BIO-22.** In reference to the Sonoran desert tortoise (*Gopherus morafkai*), a qualified biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in Arizona. The qualified biologist will survey areas before they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way. Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species.

- **APM/BMP BIO-23 (California only).** In reference to the Mojave desert tortoise, a qualified biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in California. The qualified biologist will survey areas before they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way in accordance with USFWS protocols. Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species.

  In addition, a qualified biologist would inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than three inches, (b) stored for one or more nights, (c) less than eight inches aboveground and (d) within desert tortoise habitat (such as outside the long-term fenced area) before the materials are moved, buried, or capped.

  As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection. (Addresses MM WIL-CEQA-10 and WIL-CEQA-11; CMA LUPA-BIO-1, LUPA-BIO-13, LUPA-BIO-IFS-5, LUPA-BIO-IFS-6 LUPA-BIO-IFS-7, LUPA-BIO-IFS-8, and DFA-BIO-IFS-1)

- **BMP BIO-25.** A survey would be conducted of the selected route prior to construction of all work areas to identify special status animal species, including Mojave desert tortoises, burrowing owls, and Mojave fringe-toed lizards. Where possible, and as required by the BLM, special status species and vegetation alliances would be avoided during construction. (Addresses MM VEG-CEQA-4, WIL-CEQA-5/6/7/9/11; CMA LUPA-BIO-1, LUPA-BIO-RIPWET-3, LUPA-BIO-DUNE-4, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-6, and LUPA-BIO-IFS-12)

- **APM BIO-27.** Construction activities would be limited from January 1 to March 31 in active bighorn sheep lambing areas identified by BLM and AZGFD.

- **BMP BIO-29.** The Bird and Bat Conservation Strategy would provide guidance on conservation measures applicable to bird and bat species present in the Project Area, including a nesting bird management plan and a nest management plan. (Addresses MM WIL-CEQA-1/4/8; CMA LUPA-BIO-4, LUPA-BIO-16, LUPA-BIO-17, LUPA- BIO-RIPWET-1, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-11, and DFA-BIO-IFS-2)

- **BMP BIO-32.** Adhere to specific seasonal restrictions of sensitive species. (Addresses CMA LUPA-BIO-4 and LUPA-BIO-DUNE-5)

- **BMP BIO-33.** All long-term nighttime lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting, if required, would be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure. (Addresses MM WIL-CEQA-1 and WIL-CEQA-4; CMA LUPA-BIO-13, LUPA-BIO-16, and LUPA-BIO-DUNE-5)

- **BMP BIO-34**. Application of dust abatement in the form of water will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators. (Addresses CMA LUPA-BIO-6)

- **BMP BIO-35.** All construction materials would be visually checked for the presence of wildlife and nesting birds prior to their movement or use. Any wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed. (Addresses MM WIL-CEQA-8/9/10/11; CMA LUPA-BIO-14)

- **BMP BIO-36**. The intentional feeding or harassment of wildlife on site is prohibited. (Addresses MM WIL-CEQA-8/9/10/11; CMA LUPA-BIO-14)

- **BMP BIO-39**. When fencing is necessary, use bird and bat compatible design standards. (Addresses CMA LUPA-BIO-16 and LUPA-BIO-DUNE-5)

- **BMP BIO-40 (California only).** Activities would not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost. (Addresses WIL-CEQA-1/4/8; CMA LUPA-BIO-16, LUPA-BIO-DUNE-5, and LUPA-BIO-BAT-1)

- **BMP BIO-43.** Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes for the purpose of wildlife habitat. (Addresses MM VEG-CEQA-1 and VEG-CEQA-4; CMA LUPA-BIO-VEG-3)

- **BMP BIO-44 (California only).** For the tortoise protection requirements, all culverts for access roads or other barriers would be designed to allow unrestricted access by desert tortoises and would be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.

  Biological monitoring would occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed. A designated biologist would accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.

  The ground would be inspected under vehicles for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location. Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.

  Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted. (Addresses MM WIL-CEQA-10 and WIL-CEQA-11; CMA LUPA-BIO-IFS-3/5/6/7/8)

- **BMP BIO-47.** As they are important to many listed wildlife species, the BLM would manage all riparian areas to be maintained at, or brought to, proper functioning condition. (Addresses CMA LUPA-BIO-17, LUPA-BIO-RIPWET-1, and LUPA-SW-13)

- **BMP BIO-49.** A Fringe-toed Lizard Linear ROW Protection Plan would be prepared that identifies specific conservation measures to sand dunes and sand transport areas, to map suitable habitat, and clearance surveys to prevent animal mortality. (Addresses MM VEG-CEQA-3, WIL-CEQA-9, and WIL-CEQA-11; CMA LUPA-BIO-1, LUPA-BIO-DUNE-2, LUPA-BIO-DUNE-4, and LUPA-BIO-DUNE-5)

- **BMP BIO-51.** To minimize vegetation trimming, micro-siting and design considerations (including tower height) would be applied so the catenary formed by the conductors (the bottom of the sag) avoids saguaros and is not directly over wash vegetation, to the extent practicable. (Addresses MM VEG-CEQA-1; CMA LUPA-BIO-17, LUPA-BIO-RIPWET-1, and LUPA-BIO-SVF-6)

- **BMP BIO-55 (California only).** Construction of new roads and/or routes would be avoided within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas would have a goal of “no net gain” of project roads and/or routes. (Addresses MM VEG-CEQA-1, VEG-CEQA-4, WIL-CEQA-8/9/10/11; CMA LUPA-BIO-13 and LUPA-BIO-DUNE-4)

- **BMP BIO-56**. Any measures regarding the Sonoran pronghorn (*Antilocapra americana sonoriensis*) by the USFWS in the Biological Opinion would be implemented.

4.3 Migratory Birds

4.3.1 Background

More than 350 species of birds have been documented in southwestern Arizona and California and are protected under the MBTA. The primary method of conservation of many of these species is protecting their associated habitats. The majority of the Project area is present in or near the Sonoran desert scrub and xeroriparian washes that are preferred habitats of these species. Many of these bird species are found within low-elevation riparian habitats and freshwater marshes (BLM 2006 and 2008) which exist along the Colorado River. Migratory birds most likely breed and forage in these habitats; thus, any active nest locations will be identified and protected during the construction, operation, and maintenance of the Project. In addition to the MBTA, eagles are afforded further protection under the BGEPA.

Typically, raptors have more stringent seasonal restrictions than other birds (e.g., passerines). Specific mitigation measures will be applied to protect active raptor nests during construction and maintenance activities. Active nest locations and associated raptor species may or may not change from year to year. Historical nesting locations will be taken into account during preconstruction nesting surveys, if available. Further details on nesting management and specific survey protocols can be found in Avian Protection Plan/Bird and Bat Conservation Strategy (Appendix F-3 of the POD). Table F-2-3 lists the migratory bird species with their associated status (Arizona and California listings, BLM Sensitive and Focus species, and federal status, if applicable) and their potential to occur within or near the Project area.

TABLE F-2-3 MIGRATORY BIRDS SPECIES THAT MAY OCCUR WITHIN OR NEAR THE PROJECT AREA

Common Name	Scientific Name	Status[1]	Occurrence[2]
Abert's towhee	*Melozone aberti*	Arizona: SGCN	Likely; suitable habitat present
American bittern	*Botaurus lentiginosus*	Arizona: SGCN	Likely; known to occur and suitable habitat present within Colorado River area
Arizona Bell's vireo	*Vireo bellii arizonae*	Arizona: SGCN; California: E; BLM: Sensitive in CA	Possible; not known to occur but suitable habitat present
Bald eagle	*Haliaeetus leucocephalus*	Arizona: SGCN; BLM: Sensitive in AZ	Possible; suitable habitat for wintering along lower Colorado River
Belted kingfisher	*Megaceryle alcyon*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area
Bendire's thrasher	*Toxostoma bendirei*	California: SSC; BLM: Sensitive and Focus Species in CA	Unlikely; inhabits dry and semi-arid washes and other areas containing shrubs, trees, and especially yucca
Burrowing owl	*Athene cunicularia*	California: SSC: BLM: Sensitive and Focus Species in CA and AZ	Likely; known to occur and suitable habitat present
California black rail	*Laterallus jamaicensis coturniculus*	Arizona: SGCN; California: T; BLM: Sensitive in AZ and CA	Likely; known to occur and suitable habitat present within Colorado River area
Clark's grebe	*Aechmophorus clarkii*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area
Common black hawk	*Buteogallus anthracinus*	Arizona: SGCN	Possible; suitable habitat for wintering
Crissal thrasher	*Toxostoma crissale*	California: SSC	Possible; suitable habitat present throughout region
Desert purple martin	*Progne subis hesperia*	Arizona: SGCN; BLM: Sensitive in AZ	Possible; more common in southcentral Arizona than within Project area; however, prefers open flat areas and farms. Inhabits saguaros in southern Arizona
Double-crested cormorant	*Phalacrocorax auritus*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area
Elf owl	*Micrathene whitneyi*	California: E; BLM: Sensitive in CA	Unlikely; no suitable habitat present in CA portion of the Project area and marginal suitable habitat in AZ portion of the Project area
Ferruginous hawk	*Buteo regalis*	Arizona: SGCN; BLM: Sensitive in AZ	Possible; suitable habitat for wintering near cultivated fields

Common Name	Scientific Name	Status[1]	Occurrence[2]
Gila woodpecker	*Melanerpes uropygialis*	Arizona: SGCN; California: E; BLM: Sensitive and Focus Species in CA	Possible; suitable habitat present
Gilded flicker	*Colaptes chrysoides*	Arizona: SGCN; California: E; BLM: Sensitive in CA and AZ	Possible; suitable habitat present
Golden eagle	*Aquila chrysaetos*	Arizona: SGCN; BLM: Sensitive in AZ; California: Fully Protected; Eagle Protection Act; BLM: Sensitive and Focus Species in CA	Unlikely; not known to nest or forage in the vicinity of the study area in California, and the Palo Verde Mesa offers low prey availability
Great egret	*Casmerodius albus*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area
Greater sandhill crane	*Grus canadensis tabida*	California: T; BLM: Sensitive in CA	Possible; suitable habitat for wintering near cultivated fields
Le Conte's thrasher	*Toxostoma lecontei*	Arizona: SGCN; BLM: Sensitive in AZ; California: SSC	Likely; known to occur and suitable habitat present
Lincoln's sparrow	*Melospiza lincolnii*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area and possibly along large xeroriparian washes
Loggerhead shrike	*Lanius ludovicianus*	California: SSC	Likely; known to occur and suitable habitat present
Long-eared owl	*Asio otus*	California: SSC	Unlikely; no suitable habitat present
Mountain plover	*Charadrius montanus*	Arizona: SGCN; California: SSC BLM Sensitive in CA	Possible; suitable habitat present within Colorado River area and possibly near cultivated fields
Northern harrier	*Circus cyaneus*	Arizona: SGCN; California: SSC	Likely; known to occur and suitable habitat present
Osprey	*Pandion haliaetus*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area
Peregrine falcon	*Falco peregrinus anatum*	Arizona: SGCN	Unlikely; no suitable habitat present
Savannah sparrow	*Passerculus sandwichensis*	Arizona: SGCN	Unlikely; no suitable habitat present

Common Name	Scientific Name	Status[1]	Occurrence[2]
Short-eared owl	*Asio flammeus*	California: SSC	Unlikely; no suitable habitat present
Snowy egret	*Egretta thula*	Arizona: SGCN	Unlikely; no suitable habitat present
Sonora yellow warbler	*Setophaga petechia sonorana*	California: SSC	Unlikely; limited suitable habitat present
Southwestern willow flycatcher	*Empidonax traillii extimus*	ESA: E AZ: SGCN CA: E; BLM: Sensitive and Focus Species in CA and AZ	Possible; habitat along Colorado River may not be suitable for nesting; however, may be for foraging and/or during migration
Sprague's pipit	*Anthus spragueii*	Arizona: SGCN	Possible; cultivated fields with dense low vegetation suitable habitat; however, considered rare along lower Colorado River
Summer tanager	*Piranga rubra*	California: SSC	Possible; may be present along the Colorado River
Swainson's hawk	*Buteo swainsoni*	California: T; BLM: Sensitive and Focus Species in CA	Unlikely; no suitable habitat present
Thick-billed kingbird	*Tyrannus crassirostris*	Arizona: SGCN	Unlikely; no suitable habitat present
Vermilion flycatcher	*Pyrocephalus rubinus*	California: SSC	Possible; suitable habitat for wintering near cultivated fields
Western burrowing owl	*Athene cunicularia hypugaea*	Arizona: SGCN; BLM: Sensitive in AZ	Possible; suitable habitat near cultivated fields and Colorado River area
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	ESA: T AZ: SGCN CA: E; BLM: Sensitive and Focus Species in CA and AZ	Possible; suitable migratory habitat present within Colorado River area and Project area intersects proposed critical habitat
Wood duck	*Aix sponsa*	Arizona: SGCN	Possible; suitable habitat present within Colorado River area
Yellow-breasted chat	*Icteria virens*	California: SSC	Possible; suitable habitat present
Yellow-headed blackbird	*Xanthocephalus*	California: SSC	Possible; suitable habitat present within cultivated fields and Colorado River area
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	ESA: E AZ: SGCN CA: T; BLM: Sensitive and Focus Species in CA and AZ	Possible; no proposed crossing of the Colorado River has suitable marsh habitat, but there is potential habitat in nearby backwater channels

[1]As depicted in Appendix 3 of the Draft EIS and will be updated when Final EIS is complete. Species listing includes E = Endangered and T = Threatened; NSE = Nonessential experimental population; BLM focused species as designated under the DRECP LUPA; SGCN = Species of Greatest Conservation Need; BLM = Bureau of Land Management; FP = Fully Protected; SSC = Species of Special Concern.
[2]Source: USFWS 2016b.

4.3.2 Mitigation Measures for Migratory Birds

Based on the significant concerns of federal and state agencies discussed in Section 3, the key mitigation strategies for reducing impacts to special status migratory bird species and their nests include preconstruction nest surveys in work areas, implementation of seasonal restrictions and buffers around active nests, limiting removal and clearing of vegetation, and reclamation of disturbed areas. The APMs and BMPs (and their associated CEQA and CMA requirements) applicable to minimizing potential adverse effects to migratory birds include the following:

- **APM/BMP BIO-1.** Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the federal and state ESAs and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special status species as well as a discussion of avoidance and minimization measures. The worker education program would provide interpretation for non-English speaking workers. (Addresses MM BIO-CEQA-1; CMA LUPA-BIO-5)

- **APM BIO-2.** Multiple biological monitors would be provided so any work site within habitat of special status species is monitored concurrently if needed. (Addresses MM BIO-CEQA-3, VEG-CEQA-2, WIL-CEQA-5/6/7/10/11; CMA LUPA-BIO-2, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-6, LUPA-BIO-IFS-7, LUPA-BIO-IFS-12, DFA-BIO-IFS-1, DFA-BIO-IFS-2, and LUPA-BIO-RIPWET-3)

- **APM BIO-4.** Establish environmentally sensitive areas in the field; install fencing, flagging or stakes around identified sensitive area easements to minimize encroachment. (Addresses MM VEG-CEQA-1/2/4, WIL-CEQA-10, and WIL-CEQA-11; CMA LUPA-BIO-3 and LUPA-BIO-13**)**

- **APM BIO-5.** Trash dumping, firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment. (Addresses CMA LUPA-BIO-6 and LUPA-BIO-14)

- **APM BIO-6.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the work area would be disposed of in closed trash containers. (Addresses CMA LUPA-BIO-6 and LUPA-BIO-14)

- **APM BIO-13.** Riparian areas and xeroriparian drainages that occur within the easement would be denoted as environmentally sensitive areas and would be avoided during construction to the extent practicable. Existing topography would be restored to pre-Project conditions to the extent possible. (Addresses MM VEGA-CEQA-1/2/3; CMA LUPA-BIO-9)

- **BMP BIO-19.** In the vicinity of the Colorado River, existing structure spacing and conductor heights would be matched to the greatest extent practical to reduce the potential for bird collisions with the power line. The transmission line would span

the Colorado River and the minimum number of structures possible would be located within the undeveloped floodplain. The term, “vicinity of the Colorado River” is defined to mean the river crossing, floodplain, and associated agricultural lands. In these areas, conductor bundles would be in a horizontal, parallel configuration, and match existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. No guyed structures would be used at these locations. (Addresses MM WIL-CEQA-1; CMA LUPA-SW-16, LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-SW-13, LUPA-SW-16, and LUPA-TRANS-BIO-1)

- **APM BIO-20.** If construction is scheduled during the nesting bird season (generally February 1 through August 31), the work area would be surveyed for birds protected under the MBTA and CFGC. Active nests identified during preconstruction surveys would require protective buffers or visual barriers to ensure compliance with those regulations. If the qualified biologist determines that construction activities would cause distress to nearby nesting birds, larger buffers or construction delays may be necessary to allow the birds to successfully fledge from the nest. (Addresses MM WIL-CEQA-1/6/8; CMA LUPA-BIO-4, LUPA-BIO-17, LUPA-BIO-RIPWET-1, LUPA-BIO-RIPWET-3, LUPA-BIO-IFS-11, and DFA-BIO-IFS-1)

  APM/BMP BIO-21. Current guidelines and methodologies would be used in the design of the proposed transmission facilities to minimize the potential for raptors and other birds to collide with the transmission line during operations and be electrocuted. For example, aerial marker balls or other visibility markers can be placed at and near the crossing of the Colorado River to increase the visibility of the transmission line to birds using that movement corridor. The Avian Protection Plan (Appendix F-3 of the POD) includes requirements for monitoring the effectiveness of anti-electrocution design. (Addresses MM WIL-CEQA-1 and WIL-CEQA-8; CMA LUPA-BIO-16, LUPA-BIO-17, LUPA-BIO-COMP-2, LUPA-TRANS-BIO-2, and LUPA TRANS-BIO-3)

- **BMP BIO-28 (California only).** While primarily a tool for minimizing impacts to common ravens (*Corvus corax*), the Raven Management Plan (Appendix F-5 of the POD) contributes to protection of migratory bird nesting as common ravens are covered under the MBTA in California only. (Addresses CMA LUPA-BIO-6 and LUPA-TRANS-BIO-1)

- **BMP BIO-29.** The Bird and Bat Conservation Strategy would provide guidance on conservation measures applicable to bird and bat species present in the Project area, including a nesting bird management plan and a nest management plan. (Addresses MM WIL-CEQA-1/4/8; CMA LUPA-BIO-4, LUPA-BIO-16, LUPA-BIO-17, LUPA- BIO-RIPWET-1, LUPA-BIO-DUNE-5, LUPA-BIO-IFS-11, and DFA-BIO-IFS-2)

- **BMP BIO** 30 **(California only).** Burrowing Owl Nesting Management Plan is required for protection and management of burrowing owls (*Athene cunicularia*) within the Project area. (Addresses CMA LUPA-BIO-1, LUPA-BIO-16, LUPA-BIO-IFS-12/13/14, DFA-BIO-IFS-1, and DFA-BIO-IFS-2)

- **BMP BIO-32.** Adhere to specific seasonal restrictions of sensitive species. (Addresses CMA LUPA-BIO-4 and LUPA-BIO-DUNE-5)

- **BMP BIO-33.** All long-term nighttime lighting would be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for sensitive species. Long-term nighttime lighting, if required, would be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to Project infrastructure. (Address MM WIL-CEQA-1 and WIL-CEQA-4; CMA LUPA-BIO-13, LUPA-BIO-16, and LUPA-BIO-DUNE-5)

- **BMP BIO-35.** All construction materials would be visually checked for the presence of wildlife and nesting birds prior to their movement or use. Any wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed. (Addresses MM WIL-CEQA-8/9/10/11; CMA LUPA-BIO-14)

- **BMP BIO-36.** The intentional feeding or harassment of wildlife on site is prohibited. (Addresses MM WIL-CEQA-8/9/10/11; CMA LUPA-BIO-14)

- **BMP BIO-39**. When fencing is necessary, use bird and bat compatible design standards. (Addresses CMA LUPA-BIO-16 and LUPA-BIO-DUNE-5)

- **BMP BIO-45 (California only).** Provide protections from loss and harassment of active golden eagle nests. (Addresses MM WIL-CEQA-1; CMA LUPA-BIO-16, LUPA-BIO-IFS-24/25/26/27)

- **BMP BIO-47.** BLM would manage all riparian areas to be maintained at, or brought to, proper functioning condition. (CMA LUPA-BIO-17, LUPA-BIO-RIPWET-1, and LUPA-SW-13)

- **BMP BIO-48 (California only).** Flight diverters would be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected would be subject to approval by BLM, in coordination with USFWS and CDFW, as appropriate. (Addresses MM WIL-CEQA-1 and WIL-CEQA-8; CMA LUPA-TRANS-BIO-2)

- **BMP BIO-51.** To minimize vegetation trimming, micro-siting and design considerations (including tower height) would be applied so the catenary formed by the conductors (the bottom of the sag) avoids saguaros and is not directly over wash vegetation, to the extent practicable. (Addresses MM WIL-CEQA-1 and WIL-CEQA-8; CMA LUPA-BIO-17, LUPA-BIO-RIPWET-1, and LUPA-BIO-SVF-6)

- **BMP BIO-55 (California only).** Protection of special status species suitable habitat by avoiding construction of new roads or routes within special status species suitable habitats. (Addresses MM VEG-CEQA-1, VEG-CEQA-4, WIL-CEQA-8/9/10/11; CMA LUPA-BIO-13 and LUPA-BIO-DUNE-4)

- **BMP NO-07.** To the extent feasible, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat. (Addresses CMA LUPA-BIO-12)

5 Seasonal Restrictions

Per BMP BIO-32, species-specific seasonal restrictions must be adhered to for pre-construction species surveys and construction activities throughout the life of the Project. The following table provides a general description of the required species and/or focus surveys, their time frames for the next two calendar years, and associated mitigation measures applicable to each survey or species.

TABLE F-2-4 SPECIES SURVEY SEASONAL RESTRICTIONS

Species/Survey Focus	Timing	Location	Project Mitigation Measure
Arizona (2019)			
Plant Salvage Assessments	Post-ROD	BLM administrated lands on Final Route	APM-BIO-11, BMP-BIO-41, Draft EIS Appendix 2b, Draft EIS Appendix 2 pg. 23, CMA-LUPA-BIO-VEG-5, APM-BIO-26
Bat hibernaculum, maternity roosts	March 1 – July 31	Suitable habitat on BLM administrated lands	CMA-LUPA-BIO-BAT-1, MM-BIO-CEQA-11, BMP-BIO-40
Rare, Threatened, & Endangered Plant Species Surveys	Blooming season (varies) Typ. February – May	BLM administrated lands on Final Route	APM-BIO-24, BMP-BIO-11, BMP-BIO-31
Noxious Weed Survey	May – August	BLM administrated lands on Final Route	APM-BIO-12, CMA-LUPA-BIO-11
Pre-construction Vegetation Plots	Post-ROD	BLM administrated lands on Final Route	Post-reclamation re-vegetation/monitoring
Gold & Bald Eagle	February 15 – August 1	Historical Nesting areas depicted in Draft EIS Figure 3.4-4 & 3.5-9	CMA-LUPA-BIO-IFS-24 through CMA-LUPA-BIO-IFS-27
General Avian Surveys	Varies; January 1 to August 31	Final Route on BLM administrated lands	APM-BIO-20
California (2019)			
Plant Salvage Assessments	Post-ROD	BLM administrated lands	APM-BIO-11, BMP-BIO-41, Draft EIS Appendix 2b, Draft EIS Appendix 2 pg. 23, CMA-LUPA-BIO-VEG-5
Bat hibernaculum, maternity roosts	March 1 – July 31	Suitable habitat on BLM administrated lands	CMA-LUPA-BIO-BAT-1, MM-BIO-CEQA-11, BMP-BIO-40
Rare Plant Alliances	Post ROD (June 2019 – November 2019)	CA Project lands outside Ag fields	BMP-BIO-52

Species/Survey Focus	Timing	Location	Project Mitigation Measure
Southwestern Willow Flycatcher	1st survey: May 15 – May 31 2nd survey: June 1 – June 21 3rd survey: June 22-June 17	Critical habitat at the Colorado River Crossing	MM-BIO-CEQA-9
Yellow-billed Cuckoo	1st: June 15 – July 2 2nd: August 1 – September 15	Critical habitat at the Colorado River Crossing	MM-BIO-CEQA-9
Arizona Bell's Vireo	April - July	Critical habitat at the Colorado River Crossing	MM-BIO-CEQA-9
Noxious Weed Survey	May – August	Final Route on BLM administrated lands	APM-BIO-12, CMA-LUPA-BIO-11
Pre-construction Vegetation Plots	Post-ROD	Final Route on BLM administrated lands	Post-reclamation re-vegetation/monitoring
Gold & Bald Eagle	February 15 – August 1	Historical Nesting areas depicted in Draft EIS Figure 3.4-4 & 3.5-9	CMA-LUPA-BIO-IFS-24 through CMA-LUPA-BIO-IFS-27
Arizona (2020)			
Sonoran Desert Tortoise Clearance Surveys	Prior to ground disturbance	All work areas of Final Route	APM-BIO-22
Burrowing Owl	February 1 – August 31 (Peak: April 15 – July 15)	All work areas of Final Route	BMP-BIO-25

6 The Mojave Desert Tortoise Protection and Compensation Plan (California)

6.1 Applicable Regulations and Management Policies

6.1.1 Federal

Endangered Species Act

The federal ESA, Section 7 (16 U.S.C. § 1531 et seq., 50 CFR Part 17.1 et seq.) provides for the designation and protection of threatened and endangered plant, as well as animal species, and habitat critical to their survival. The ESA authorizes the USFWS to review a proposed federal action to assess potential impacts to listed species. Listed species are those that have been listed in the Federal Register as threatened or endangered as defined by the ESA. The ESA prohibits the "take" of listed species. The ESA and implementing regulations define "take" to include mortality and other actions that could result in adverse impacts such as harassment, harm, or loss of critical habitat.

Desert Renewable Energy Conservation Plan and Land Use Plan Amendment

The LUPA, prepared to implement the DRECP, is applicable only to BLM administered land in California. The DRECP and LUPA provide a landscape approach to renewable energy and conservation planning in the California desert that streamlines the process for development of utility-scale renewable energy generation and transmission consistent with federal and state renewable energy targets and policies, while simultaneously providing for the long-term conservation and management of Special Status Species and vegetation types. In addition to BLM designated sensitive species, the LUPA identifies additional "Focus" species, which it defines as species whose conservation and management are provided for in the DRECP BLM LUPA.

BLM Manual 6840: Special Status Species Management

This manual provides policy and guidance for conserving species classified as Special Status species by the BLM. BLM Special Status species include species listed or proposed for listing under the federal ESA and species identified by the BLM State Director as requiring special management considerations to promote their conservation and to reduce the likelihood and need for future listing under the ESA.

6.1.2 California

California Endangered Species Act

The CESA was enacted in 1984 to parallel the federal ESA and allows the CFGC to designate species, including plants, as threatened or endangered. Under the CESA it is illegal to import, export, "take", possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by CDFW. "Take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

There are 156 species, subspecies, and varieties of plants that are protected due to their threatened or endangered status under CESA. Under CESA, the CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for incidental take include that the take is minimized and fully mitigated, that adequate funding is ensured for this mitigation, and that the activity will not jeopardize the continued existence of the species.

California Environmental Quality Act

Section 15380 (B) of CEQA states that a species is considered rare if "the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act." In addition, any species of concern should be included in project-impacts analysis (California Public Resources Code § 15380). The CPUC is responsible for determining if the Project will be constructed in accordance with CEQA requirements and issue to DCRT a Certificate of Public Convenience and Necessity for transmission infrastructure within California.

6.2 Purpose and Objectives of this Plan

As the lead federal agency, the BLM released the Draft EIS on August 31, 2018, including an appendix providing CEQA documentation, and is currently developing the Final EIS. APMs, BLM-Required BMPs, and CEQA MMs contained within the EIS require DCRT to prepare and implement a Mojave Desert Tortoise Protection and Compensation Plan for work activity in the California portions of the Project. The APMs, BMPs, and MMs are detailed in Section 6.3.

The Project is required to comply with CMAs from the DRECP-LUPA for all Project activities on BLM land in California. Due to known occurrences of Mojave desert tortoise and potentially suitable habitat on BLM land within several of the alternative segments in the California portion of the Project, the LUPA-BIO-IFS-3 through LUPA-BIO-IFS-9 CMA would apply to the portion of the Project located in California. These CMAs are detailed in Section 6.3.

The purpose of the CMAs is to protect the existing population of Mojave desert tortoises at such a level that they are a sustainable and healthy population. Take will be minimized through implementation of the CMAs. For the purposes of implementing this Plan for Mojave desert tortoise, “take” is defined as to harass, harm pursue, hunt shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct.

APMs and BMPs contained in Appendix 2A of the Draft EIS and summarized below in Section 6.3 of this Plan, would also apply and reduce the impacts of the Project on Mojave desert tortoise.

6.3 Avoidance and Minimization Measures

All avoidance and minimization measures applicable to this Plan and protection of the Mojave desert tortoise are as follows:

MM WIL-CEQA-10 (California): Compensation for Impacts to Mojave Desert Tortoise. To fully mitigate for habitat loss and potential take of Mojave desert tortoise, DCRT and/or their Construction Contractor(s) will provide compensatory mitigation at a minimum ratio of 2:1. For the purposes of this measure, the Project site (i.e., footprint) means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project’s boundaries that will no longer provide viable long- term habitat for the Mojave desert tortoise. To satisfy this measure, DCRT or their Construction Contractor(s) will acquire, protect and transfer two acres of Mojave desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. DCRT shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate federal and state regulatory agencies prior to Project activities. See Section 6.8 for details.

MM WIL-CEQA-11 (California): Conduct Pre-Construction Surveys for Listed and Special Status Terrestrial Herpetofauna and Compensate Impacts. Prior to ground disturbance or vegetation clearing within the Project site, DCRT and/or their Construction Contractor(s) shall retain an approved/qualified biologist to conduct surveys for special-status terrestrial herpetofauna (e.g., lizards, snakes, tortoise) where suitable habitat is present and directly impacted by construction vehicle access, or maintenance. Focused

surveys shall consist of a minimum of three daytime surveys and one nighttime survey within one week of vegetation clearing. The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports special-status terrestrial herpetofauna. Clearance surveys for special-status terrestrial herpetofauna shall be conducted by the qualified biologist prior to the initiation of construction each day in suitable habitat. Special-status terrestrial herpetofauna found within the area of disturbance or potentially affected by the Project shall be relocated to the nearest suitable habitat that shall not be affected by the Project. See Sections 6.5 and 6.6 for details.

APM BIO-2: A qualified biological monitor would be present on the Project site during all work activities within habitat of special-status animal species. The qualified biologist would conduct a preconstruction survey of those areas immediately before work activities begin and would locate and fence off any present individuals of special status plant species.

BMP BIO-2: Multiple biological monitors would be provided so any work site within habitat of special status species is monitored concurrently if needed.

APM BIO-4: When appropriate, environmentally sensitive areas, such as the riparian areas, xeroriparian washes, and other habitat of special status species, would be identified in the field. Barrier fences or stakes would be installed at the edge of the easement or around the sensitive area to minimize the possibility of inadvertently encroaching into sensitive habitat.

APM BIO-17: Vehicular travel would be limited to established roads to the maximum extent.

APM BIO-23: Mojave Desert Protection (California). A qualified biologist would be present during all ground-disturbing and other construction activities in non-cultivated areas in California, in order to survey areas before they are disturbed, monitor construction sites for the presence of desert tortoises, and move tortoises from harm's way in accordance with USFWS protocols. Burrows near construction sites would be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of a field biologist with demonstrated prior experience with this species. Other measures, as required by the USFWS in any applicable Biological Opinion, would also be implemented.

BMP BIO-23: Mojave Desert Tortoise Protection (California). A designated biologist would inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than three inches, (b) stored for one or more nights, (c) less than eight inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection.

BMP BIO-25: Sensitive Animal Surveys. A survey would be conducted of the selected route prior to construction of all work areas to identify special status animal species, including Mojave desert tortoises, burrowing owls, and Mojave fringe-toed lizards. Where possible, and as required by the BLM, special status species and vegetation alliances would be avoided during construction.

BMP BIO-32: Species-specific seasonal restriction dates per AZGFD, CDFW, and in applicable resource management plans would be observed.

BMP BIO-36: The intentional feeding or harassment of wildlife on site is prohibited.

BMP BIO-44: Mojave Desert Tortoise Protection (California).

- All culverts for access roads or other barriers would be designed to allow unrestricted access by desert tortoises and would be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.
- Biological monitoring would occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.
- A designated biologist would accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.
- The ground would be inspected under vehicles for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.
- Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.

BMP BIO-55 (California): Construction of new roads and/or routes would be avoided to the extent practicable within Focus and BLM special status species suitable habitat within identified linkages for those Focus and BLM special status species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas would have a goal of “no net gain” of project roads and/or routes.

CMA LUPA-BIO-1 (California): Conduct a habitat assessment of Focus and BLM special status species’ suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat for Focus and BLM special status species. If required by the relevant species-specific CMAs, conduct any subsequent protocol or adequate presence/ absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species-specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat.

BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season. Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.

CMA LUPA-BIO-2 (California): Designated biologist(s) will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures

are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

CMA LUPA-BIO-3 (California): Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from the edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1). In addition, it will also be measured from the edge of suitable habitat or active nest substrates for the appropriate Focus and BLM special status species.

CMA LUPA-BIO-4 (California): For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities. Species-specific seasonal restriction dates are described in the applicable CMAs. Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.

CMA LUPA-BIO-6 (California): Subsidized predator standards (e.g., common ravens [*Corvus corax*] that prey on Mojave desert tortoise), approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:

- The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.

- All activity work areas will be kept free of trash and debris. Particular attention will be paid to “micro-trash” (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.

CMA LUPA-BIO-12 (California): For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise: To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.

- Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.

- Use noise controls on standard construction equipment including mufflers to reduce noise.

CMA LUPA-BIO-13 (California): Project siting and design will implement the following:

- To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM special status species.

- The siting of projects along the edges (i.e., general linkage border) of the biological linkages identified in Appendix D of the Draft EIS will be informed by existing available information on modeled focus and BLM special status species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information.

- Additionally, projects will be sited and designed to maintain the function of Focus and BLM special status species connectivity and their associated habitats in the following linkage and connectivity areas.

- Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, Project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM special status species.

- To the maximum extent practicable, restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.

- To the maximum extent practicable, confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross-country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.

- To the maximum extent practicable, construction of new roads and/or routes will be avoided within Focus and BLM special status species suitable habitat within identified linkages for those Focus and BLM special status species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of “no net gain” of project roads and/or routes.

- Use of nontoxic road sealants and soil stabilizing agents.

CMA LUPA-BIO-14 (California): General practices to implement to protect Focus and BLM special status species:

- Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.

- Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.

- Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs).

- All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.

- All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.

- Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.

CMA LUPA-BIO-IFS-3 (California): All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.

CMA LUPA-BIO-IFS-5 (California): Following the clearance surveys within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way.

- A designated biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than three inches, (b) stored for one or more nights, (c) less than eight inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped.

- As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.

CMA LUPA-BIO-IFS-6 (California): When working in areas where protocol or clearance surveys are required (Appendix D of the DRECP), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.

CMA LUPA-BIO-IFS-7 (California): A designated biologist will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.

CMA LUPA-BIO-IFS-8 (California): Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.

CMA LUPA-BIO-IFS-9 (California): Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.

CMA DFA-BIO-IFS-1 (California): Conduct the following surveys as applicable in the DFAs.

CMA DFA-VPL-BIO-IFS-1 (California): To the maximum extent practicable, activities will be sited in previously disturbed areas, areas of low-quality habitat, and areas with low habitat intactness in desert tortoise linkages.

6.4 Species Habitat and Occurrence Within the Project Area

The Mojave desert tortoise is known to be present on the Palo Verde Mesa around the Colorado River substation west of the agricultural areas. Though the sandiest areas are typically not well suited to support Mojave desert tortoise burrows, evidence of Mojave desert tortoises representing a low-density population have been found in the vicinity of the Colorado River Substation and elsewhere on the mesa. Tortoise habitat conditions tend to improve closer to the Mule Mountains, which are located approximately two miles south of the Colorado River Substation.

6.5 Preconstruction Surveys

Per MM WIL-CEQA-11, CMA LUPA-BIO-1, DFA-BIO-IFS-1, and BMP BIO-25, prior to conducting any ground-disturbing activities where suitable Mojave desert tortoise habitat is present, pre-construction surveys for Mojave desert tortoise will be conducted by an approved/qualified biologist. Focused surveys shall be conducted during the period when they are most active (i.e., March through May or September through mid-November). During the pre-construction clearance survey, the qualified biologist shall inspect construction pipes, culverts or similar structures with (a) a diameter greater than three inches, (b) stored for one or more nights, (c) less than eight inches aboveground, and (d) within Mojave desert tortoise habitat, before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks, pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspections.

During surveys, burrows near construction sites will be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. Where burrows would be unavoidably destroyed, each burrow would be excavated carefully by Qualified/Designated Biologist(s) with demonstrated prior experience using hand tools and scopes to ensure any tortoises present will be identified and safely removed (APM BIO-23).

Per CMA LUPA-BIO-IFS-5 and if appropriate following initial clearance surveys, the Designated Biologist(s) will monitor initial clearing and grading activities during installation of tortoise fencing for long-term exclusion of desert tortoises to ensure any undiscovered

desert tortoises are moved from harm's way. Surveys for Mojave desert tortoise shall be conducted using techniques outlined in the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii*) (USFWS 2009).

6.6 Construction Phase Avoidance and Minimization

Per MM WIL-CEQA-11, if Mojave desert tortoise habitat is present within the Project site and/or adjacent areas, at a minimum, the following avoidance and minimization measures shall be employed to reduce potential species impacts:

- Mojave desert tortoise habitat and burrows, if present shall be mapped using the BLM National Operations Center habitat mapping standards.
- If potential habitat is identified in or adjacent to the Project site, then a qualified biological monitor shall be on-site during all Project activities, as necessary. The qualified biological monitor shall directly monitor site clearing and shall be onsite during grading activities to find and move Mojave desert tortoises missed during the initial pre-construction tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in this Plan.
- ESA signage and exclusion fencing shall be installed at the appropriate buffer distance i.e., resource setback), if suitable habitat is within or encroaches into the Project site.
- During Project activities, including on specific linear features (e.g., fencing, transmission lines, and access roads) and during operation and maintenance, all live Mojave desert tortoises and active burrows shall be avoided to the extent possible. DCRT and/or their Construction Contractor(s) shall ensure that the qualified biologist and biological monitor monitors any Project activities in unfenced areas for presence of Mojave desert tortoises. If an active burrow cannot be avoided by construction activities, the burrow shall be excavated using protocols in *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). If a tortoise wanders into an unfenced, active Project work area, does not leave the area on its own accord (i.e., within 15 minutes), and cannot be avoided by Project activities, DCRT and/or their Construction Contractor(s) shall ensure that that the qualified biologist captures the Mojave desert tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced Project work areas, and monitor the individual via telemetry, in accordance with the aforementioned Protocol. The qualified biologist and biological monitor shall have a copy of all measures, federal and state permits, when monitoring Project activities. The qualified biologist and biological monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by the qualified biologist. A Mojave Desert Tortoise Quarterly Compliance Report will be submitted quarterly to the appropriate federal and state regulatory agencies.
- Vehicular traffic would not exceed 15 miles per hour within the areas not cleared by protocol-level surveys where desert tortoise may be impacted (also stated in BMP BIO-44 and CMA LUPA-BIO-IFS-9).
- **Fencing:** DCRT and/or their Construction Contractor(s) shall ensure that temporary and/or permanent tortoise exclusionary fencing is installed around active portions of the Project area following the pre-construction tortoise survey. The exclusionary

fencing, whether temporary or permanent in nature, and shall be installed according to specifications in the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009). Specifications requires fencing to be buried 12 inches below the ground surface and extend to 22 to 24 inches above the ground surface. If a phased approach is implemented during the construction phase, the exclusionary fencing may be installed in phases, with pre-construction surveys conducted prior-to and clearance surveys conducted immediately after installation of the exclusionary fence. DCRT and/or their Construction Contractor(s) shall also ensure that tortoise exclusionary fencing is maintained during the decommissioning phase to keep tortoises from accessing active work areas. Throughout the construction and decommissioning phases, the tortoise exclusionary fence shall be checked regularly to ensure its integrity.

- Security Gates - For security fencing, DCRT and/or their Construction Contractor(s) shall ensure that the Project's perimeter security fence includes exclusionary fencing that prevents Mojave desert tortoises, and other burrowing animals, from accessing the Project site. The exclusionary fencing shall be installed at the base of the security in accordance with the protocols listed above, and cattle guards shall be installed at entrances to the Project. Specifically, security gates shall be designed with minimal ground clearance to deter ingress by tortoises. Tortoise guards shall be installed at gate locations.
- Fence Flagging - All fencing installation corridors shall be flagged to assist the qualified biologist in studying the fence route and surveying within 24 hours prior to the initiation of fence construction. Prior to the surveys DCRT and/or their Construction Contractor(s) shall provide all appropriate federal and state regulatory agencies map figures clearly depicting the limits of construction disturbance for the proposed fence installation.
- Fence Installation - The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the qualified biologist and monitored to ensure the safety of any tortoise present.
- Fence Inspections - Following installation of the Mojave desert tortoise exclusion fencing, the fencing shall be regularly inspected during construction, operations, and decommissioning. If Mojave desert tortoise were moved out of harm's way during fence construction, fencing shall be inspected daily for the first seven days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, fencing shall be inspected quarterly and during and within 24 hours following major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep Mojave desert tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of site fencing shall occur for the life of the Project.
- Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted Mojave desert tortoise entry while damaged, the qualified biologist shall inspect the area for Mojave desert tortoise.

- Tortoise Encounters - If a tortoise is encountered along the inside or outside of the fence, the qualified biologist shall capture and relocate in accordance with the protocols listed above (i.e., USFWS 2009, Chapter 7), perform a health assessment, attach a radio transmitter to the tortoise in accordance, and release the Mojave desert tortoise in a previously identified Project-adjacent relocation areas supporting Mojave desert tortoise habitat in accordance with USFWS and all other appropriate federal and state regulatory agencies.
- Fence Removal - Temporary exclusionary fencing shall be removed following completion of the construction and decommissioning phases.

Other avoidance and minimization for the Mojave desert tortoise include:

- All construction pipes, culverts, and similar structures: (a) with a diameter greater than three inches, (b) stored for one or more nights, (c) less than eight inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), will be inspected by a Designated Biologist before the materials are moved, buried, or capped. As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys would not require inspection When appropriate (e.g., near habitat where tortoises are known to occur) construction material will be visually checked for the presence of desert tortoises prior to movement or use. If tortoises are encountered during inspection, they will be allowed to leave the construction area unharmed (BMP BIO-23, CMA LUPA-BIO-14, LUPA-BIO-IFS-3, and LUPA-BIO-IFS-5).

- Vehicles would be limited to established roads to the maximum extent possible (APM BIO-17 and CMA LUPA-BIO-13).

- Vehicles and construction equipment parked or have not moved within 15 minutes must be inspected by a Designated Biologist to ensure there is no presence of desert tortoises on the ground under the vehicle, near the vehicle, or around tires and buckets touching the ground. Desert tortoises present will be allowed to leave the area unharmed; only with prior approval, a Designated Biologist may remove/relocate the animal to a safe location (BMP BIO-44 and CMA LUPA-BIO-IFS-8).

- When feasible, construction of new roads, sites, and/or routes will be avoided within Focus and BLM special status species suitable habitat, unless the new road or route is beneficial to minimize net impacts to protected biological resources (BMP BIO-55 and CMA LUPA-BIO-13).

- When possible, construction activities will be sites in previously disturbed areas, areas of low-quality habitat, or areas with low habitat intactness to desert tortoise linkages (CMA DFA-VPL-BIO-IFS-1).

- All culverts for access roads or other barriers would be designed to allow unrestricted access by desert tortoises and would be large enough that desert tortoises are unlikely to use them as shelter sites (BMP BIO-44).

- Seasonal restrictions for the Mojave desert tortoise must be adhered to for pre-construction, construction, operations, and decommissioning activities on the Project (CMA LUPA-BIO-4 and BMP BIO-32).

- Water used for dust abatement during Project activities will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, minimize the potential to attract desert tortoises and predators (e.g., common ravens) that would prey on desert tortoises (CMA LUPA-BIO-6).

- Domestic pets are prohibited on sites to avoid harassment, injury, or mortality to desert tortoises (CMA LUPA-BIO-14).

- All Project personnel will not feed or harass desert tortoises (BIO BIO-36 and CMA LUPA-BIO-14).

- All steep-walled trenches or excavation used during Project activities will be covered, except when being actively used, to prevent entrapment of desert tortoises. If covering is not an option, openings will be constructed with escape ramps, following up-to-date design standards to allow wildlife to safely exit; or wildlife exclusion fencing will be installed around the open trench or excavation. Openings with no cover must be inspected prior to use each day (CMA LUPA-BIO-14 and LUPA-BIO-IFS-3).

6.7 Construction Monitoring

Per MM BIO-CEQA-2, APM/BMP BIO-2, and CMA LUPA-BIO-2, no more than 30 days prior to the start of site mobilization or ground disturbing activities, DCRT and/or their Construction Contractor(s) will retain Qualified and/or Designated Biologists to monitor construction of the Project. Qualified and/or Designated Biologists will be approved by the CPUC and BLM prior to conducting construction monitoring. The biologists must be knowledgeable with the life history and habitat requirements of the federal threatened Mojave desert tortoise. Qualified/Designated Biologists will conduct clearance surveys for listed and special status species prior to the start of construction activities each work day during initial site disturbance; clearance surveys can be conducted on a weekly basis thereafter. Qualified Biologists handling desert tortoise must be USFWS-approved Designated Biologists and comply with the Biological Opinion assumed to be issued for the Project. Designated Biologist(s) typically are the lead Qualified Biologist(s) onsite responsible for coordinating daily on-site biological monitoring as well as data entry and agency-required reporting.

During initial site disturbance and for the duration of construction, the Qualified/Designated Biologists will be on-site at all times when activities will occur immediately adjacent to or within habitat that supports populations of listed and/or special status species. Per CMA LUPA-BIO-14, desert tortoises encountered during the course of an activity including constructions, operation, and decommissioning will be allowed to leave the area unharmed while the Qualified Biologist observes nearby. If necessary, the Qualified/Designated Biologists will relocate any terrestrial special status species that would be impacted by the Project; permits and/or Memorandum of Understanding may be required for some species.

In addition, burrows detected during initial ground-disturbing activities must be clearly delineated. Road, footing, and work area alignments would be modified to the extent possible to avoid adversely affecting any tortoise burrows. As discussed in Section 6.5, burrows that must be unavoidably destroyed, are excavated carefully by Qualified/ Designated Biologists using hand tools and continually assessed for tortoises until entire burrow has been completely excavated (APM BIO-23).

Pre-construction activities including geotechnical testing equipment or soil boring must have Qualified/Designated Biologists monitoring all movement and activity to ensure no desert tortoises are injured or burrows are crushed (BMP BIO-44, CMA LUPA-BIO-IFS-6, and LUPA-BIO-IFS-7).

If, during construction, the Qualified Biologist observes a dead or injured special status wildlife species on the construction site, a written report will be sent to the CPUC, CDFW, and/or USFWS (as appropriate) within five calendar days. The report will include the date/time of the finding or incident (if known), and location of the carcass or injured animal and circumstances of its death or injury (if known). Injured animals will be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility. The Qualified/ Designated Biologist will, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures will be included with the report. Species remains will be collected and frozen as soon as possible and CDFW and USFWS, as appropriate, will be contacted regarding ultimate disposal of the remains (CPUC 2016).

All tortoises will be handled by Qualified Biologists in accordance with the *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (USFWS 2009) and only to move animals out of immediate harm's way. No translocations are anticipated for this effort.

6.8 Compensation

In conformance with CMA LUPA-BIO-COMP-1 and MM-WIL-CEQA-1010, a Compensation Plan will be prepared. The Compensation Plan will include calculations of compensation ratios and mitigation acreages for loss of habitat for any biological resources requiring additional mitigation. If take of Mojave desert tortoise potential or modeled habitat during construction is unavoidable the Compensation Plan would outline compensation requirements based on the estimated number of acres taken. Compensation for temporary impacts to desert tortoise potential/modeled habitat will include on-site habitat restoration at a minimum 1:1 ratio. Compensation for permanent impacts to desert tortoise potential/modeled habitat will include a) off-site creation, enhancement and/or preservation and/or b) participation in an established mitigation bank program at a minimum 2:1 ratio (MM WIL-CEQA-10).

For the purposes of this MM WIL-CEQA-10, the Project site (i.e., footprint) means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long- term habitat for the Mojave desert tortoise. To satisfy this measure, DCRT or their Construction Contractor(s) will acquire, protect and transfer two acres of Mojave desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. DCRT shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate federal and state regulatory agencies prior to Project activities.

Another option can satisfy some or all of the requirements in this measure, in lieu of acquiring lands itself, by depositing funds into an account established with the National Fish and Wildlife Foundation. Land will be acquired, in fee or in easement, within 12 months from the time the resource impact occurs, unless a six-month extension is approved by BLM. If compensation lands are acquired in fee title or in easement, the requirements for

acquisition, initial improvement and long-term management of compensation lands include all of the following:

- Be within the appropriate habitat unit or, if sufficient land is unavailable, in other locations within approved by the appropriate federal and state regulatory agencies.
- Provide habitat for Mojave desert tortoise with capacity to regenerate naturally when disturbances are removed.
- Be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation.
- Be connected to lands with Mojave desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover.
- Not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible.
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration.
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat.
- Have water and mineral rights included as part of the acquisition, unless consultation with the appropriate federal and state agencies occurs and there is an agreement in writing to the acceptability of land.

Further information on compensation due to impacts can be found in the Compensatory Mitigation Plan, Appendix B-3 of the Project POD.

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2B.9 RAVEN MANAGEMENT PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Raven Management Plan

PROJECT NUMBER:
154320

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POWER ENGINEERS

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Raven Management Plan

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ACRONYMS AND ABBREVIATIONS

APM	Applicant Proposed Measure
BIO	Biological Mitigation Measure
BLM	Bureau of Land Management
BMP	Best Management Practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CPUC	California Public Utilities Commission
CMA	Conservation and Management Action
DCRT	Delaney Colorado River Transmission, LLC
EIS	Environmental Impact Statement
ESA	Endangered Species Act
LUPA	Land Use Plan Amendment
MM	Mitigation Measure
MBTA	Migratory Bird Treaty Act
Project	Ten West Link Transmission Project
RMP	Raven Management Plan
TRANS	Transmission (CMA mitigation measure)
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1 Introduction

The data and information provided within this Raven Management Plan (RMP) is for the Ten West Link Transmission Project (Project) proposed by Delaney Colorado River Transmission, LLC (DCRT). The purpose of this RMP is to address potential direct impacts, due to construction, operation, and maintenance of the Project, to the federally and state protected desert tortoise (*Gopherus* spp.) by eliminating and minimizing known attractants that can be exploited by the desert tortoise's primary predator, the common raven (*Corvus corax*). This Project-specific RMP describes the raven management strategy and reporting procedures for the California portion of the Project.

1.1 Project Description and Location

As shown in Figure F-5-1 – Ten West Link Project Overview, the Project is approximately 125.0 miles of 200-foot-wide right-of-way. Of the total length, approximately 81.2 miles cross lands managed by federal agencies including the Bureau of Land Management (BLM), Bureau of Reclamation, and Department of Defense. The Project would be located approximately 103.4 miles within Maricopa and La Paz Counties in Arizona, and 21.6 miles within Riverside County, California. Portions of the Project would be located within designated Section 368 West-Wide Energy Corridors or BLM RMP-designated utility corridors. Portions of the Project parallel Southern California Edison's existing Devers to Palo Verde transmission line and similar linear features.

The Project's overhead transmission line would extend between Arizona Public Service Company's Delaney Substation near Tonopah, Arizona and Southern California Edison Company's Colorado River Substation, located west of Blythe, California. The Project would also include the construction of a Series Compensation Station located approximately in the middle of the Project route and would be connected to Arizona Public Service's 12 kilovolt network through a new 12 kilovolt distribution line. For further design and details, refer to the Project's Draft Environmental Impact Statement (EIS) Section 1.2 (BLM 2018). Once completed, updates or new requirements within the Final EIS will be updated in the final Plan of Decision management plans.

1.2 Relevant Laws, Regulations, and Management Policies

The federal and state regulations applicable to the RMP are summarized in this section. These regulations, along with the Project-specific requirements, provide the regulatory framework that the Project must wholly comprehend and comply with.

1.2.1 Federal Laws and Regulations

1.2.1.1 Federal Endangered Species Act

Administered by the United States Fish and Wildlife Service (USFWS), the Endangered Species Act (ESA) of 1973, as revised, was established to protect species at risk of becoming extinct (16 United States Code [U.S.C.] § 1531). The ESA includes multiple layers of protection where endangered species are the most in danger of becoming extinct, threatened species are at risk of becoming endangered, and candidate species are those that are being considered for listing as threatened or endangered.

Under Section 9 of the ESA, a “take” is defined as to harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect, or to attempt to engage in any such conduct. This RMP implements actions to minimize the potential for desert tortoise “take” as a result of Project activities, which may potentially attract raven presence and thereby increase the risk of tortoise predation.

1.2.1.2 Migratory Bird Treaty Act

The regulatory framework for protecting birds includes the ESA, the Migratory Bird Treaty Act (MBTA) of 1918, codified in 16 U.S.C. § 703-712, and subsequent amendments. The MBTA decrees that all migratory birds and the parts (including eggs, nests, and feathers) are fully protected and addresses the destruction or removal of active nests of those species. Under this Act, it is unlawful to pursue, hunt, take, capture, kill, possess, offer to or sell, barter, purchase, deliver, transport, or receive any migratory birds (including parts, nests, eggs or other product, manufactured or not). In practice, most bird species with non-migratory life-histories are protected under the MBTA, as well. Virtually all native bird species in the United States are protected under the MBTA, including the common raven. If a common raven is recorded as a repeat offender in predating desert tortoises, removal of the offender may be required upon issuance of a depredation permit under the MBTA. This activity is governed by Section 4 of the Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise (USFWS 2008).

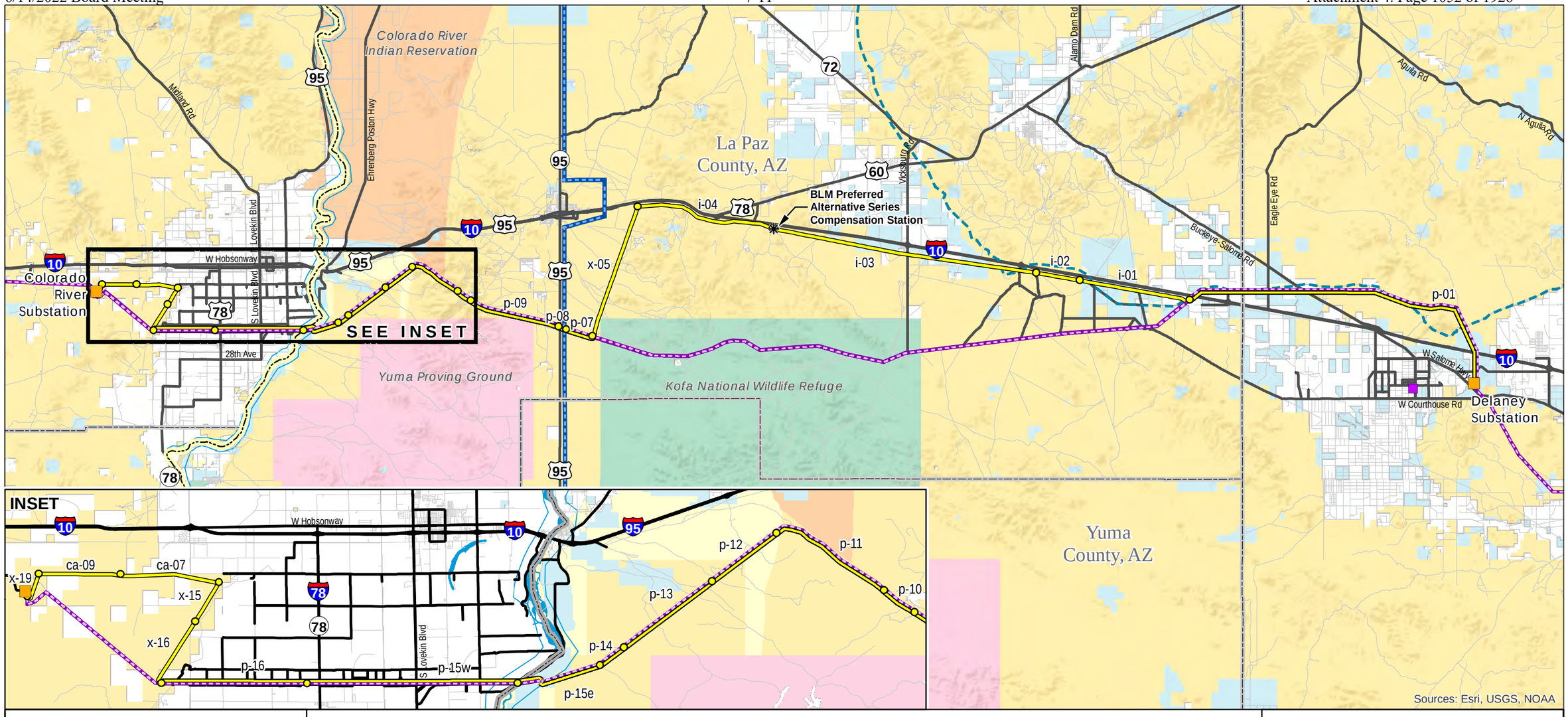
1.2.1.3 USFWS California Raven Management Program

The USFWS Ventura office cooperated with several other agencies including the BLM, National Park Service, Department of Defense, and the Department of Agriculture to complete the Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise (USFWS 2008). The USFWS proposes to design a common raven management program addressing the common raven predation in the California desert region. The 2018 analysis on common raven monitoring and management data collected between 2013 and 2017 within the California range of the desert tortoise is underway. Results of the data analysis are estimated to be for in early 2019 (National Fish and Wildlife Foundation 2018).

1.2.2 California State Laws and Regulations

1.2.2.1 California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) established the California Endangered Species Act as a policy of the state to protect any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (California Fish and Game Code [CFGC] § 2062). For projects that affect both a federally and state listed species, compliance with an ESA “incidental take authorization” can satisfy the California Endangered Species Act if the CDFW determines that it is “consistent” with CFGC § 2080.1.



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Project Components
- Substation
- BLM Preferred Alternative Series Compensation Station
- Route Segment Node
- BLM Preferred Alternative*

Base Features
- Existing DPV1 500kV Transmission Line
- Existing WAPA 161kV Transmission Line
- Harquahala Power Plant
- CAP Canal
- Interstate Highway
- Major Road
- Local Road
- State Boundary
- County Boundary

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Colorado River Indian Tribe Lands
- Department of Defense
- Private
- State
- USFWS

*DPV1, the DEIS Alternative Route Segments, and the BLM Preferred Alternative are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

Figure F-5-1

Ten West Link Project Overview

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1.2.2.2 California Environmental Quality Act

A statute passed in 1970, the California Environmental Quality Act (CEQA) requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible (California Natural Resources Agency 2014). The California Public Utilities Commission (CPUC) is responsible for determining if the Project will be constructed in accordance with CEQA requirements and issue to DCRT a Certificate of Public Convenience and Necessity for transmission infrastructure within California.

The Plan covers relevant requirements of the following Mitigation Measures (MM) under CEQA, as depicted in Appendix 1C of the Draft EIS:

- MM Biological (BIO)-CEQA-1: Implement Biological Resources Applicant Proposed Measures (APMs), BLM Best Management Practices (BMPs), and Conservation and Management Actions (CMAs) as part of the Project and applied prior to, during, and after Project activities to avoid or minimize Project related impacts on biological resources (see Section 1.2.3). Where an APM, BMP, or CMA is subjective (i.e., "where appropriate," "where feasible"), DCRT or their contractor will consult with BLM and CPUC to determine applicability of each measure prior to the disturbance of a covered resource. Weekly and monthly documentation of compliance will be provided to the BLM and CPUC; further details are provided in Appendix 1C of the Draft EIS.

- MM BIO-CEQA-2: Prior to any work activities on the Project site, including surveying, mobilization, fencing, grading, or construction, a Work Environmental Awareness Program (WEAP) shall be prepared and implemented by DCRT or their Construction Contractor(s). Prior to implementation the WEAP will be approved by the CPUC with a final version completed prior to the issuance of construction permits. The WEAP shall be implemented throughout the duration of Project, including operation and maintenance phases. Successful implementation of the WEAP will result in all on-site Project personnel being properly informed and educated on the pertinent environmental concerns related to the Project. One of the main goals of the WEAP, is that it shall reduce unintentional impacts to biological resources within the Project area and ensure that all workers are trained in accordance with this MM. The WEAP shall include, but not limited to, the following items (specific to this Plan):

    - A discussion of measures to be implemented for avoidance of sensitive resources discussed in the Draft EIS (including this Plan) and the identification of an onsite contact in the event of the discovery of sensitive species (e.g., desert tortoise) on the Project site; this shall include a discussion on micro trash.

    - Training materials and briefings shall include, but not be limited to: a discussion of all relevant regulatory guidelines; the consequences of non-compliance with these regulations; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event of the discovery of dead or injured wildlife (attractant to common ravens); and a review of mitigation requirements.

- Protocols to be followed when road kill (attractant to common ravens) is encountered in the work area, or along access roads, and the identification of an onsite representative to whom the road kill shall be reported. Road kill shall be reported to the appropriate local animal control agency, the CPUC within 24 hours. Road kill of special -status species shall also be reported to the CDFW and/or USFWS within 24 hours or otherwise specified in Project-specific permits.

- MM BIO-CEQA-3: DCRT will develop and implement biological construction monitoring no more than 30 days prior to the start of site mobilization or ground disturbing activities, the Applicant shall designate a qualified biologist(s) to monitor construction of the Project. Multiple qualified biologists shall be designated by the DCRT and/or their Construction Contractor(s), as needed. Designated qualified biologists must be approved by the CPUC, BLM, and CDFW prior to conducting construction monitoring. The biologist(s) must be knowledgeable with the life history and habitat requirements of federal- and state-listed and special-status plants, mammals, reptiles, amphibians, and birds. The qualified biologist(s) shall conduct clearance surveys for listed and special-status species prior to the start of construction activities each work day during initial site disturbance; clearance surveys can be conducted on a weekly basis thereafter. Any handling of special-status species must be approved by the appropriate federal and state agencies and be done in accordance with species-specific handling protocols. During initial site disturbance, and for the duration of construction, the qualified biologist(s) shall remain on-site at all times when activities shall occur immediately adjacent to, or within, habitat that supports populations of listed and/or special-status species. The designated biologist(s) shall relocate any terrestrial special-status species that would be impacted by the Project.

  Permits may be required for some species (e.g., nest removal or depredation permit to remove common ravens issued by USFWS). All locations of listed and/or special-status plants shall be flagged for avoidance or salvage, relocation, or transplanting. Similarly, locations of listed and/or special-status wildlife shall be flagged for avoidance and appropriate avoidance buffers established. Results of all monitoring shall be recorded on daily site observation reports and include details the construction activities. The daily monitoring reports shall be compiled and submitted to the CPUC, BLM, and CDFW for review on a weekly basis. Contents of the reports shall include at a minimum the date, time of monitoring, location, qualified biologists name, construction activities, biological conditions and species detections, and any issues encountered during the monitoring effort.

  If dead or injured special-status wildlife species (attractant for common ravens) and/or impacted special-status plants are detected on the construction site, the qualified biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures shall be included within monitoring separate incident report. Species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, as well as all other appropriate federal and state regulatory agencies, shall be contacted regarding ultimate disposal of the remains. The incident report shall be sent to the CPUC, CDFW and/or USFWS (as appropriate), as well as any other appropriate federal and state agencies, within five calendar days. The construction biological monitoring report shall at a minimum include: the date, time of the finding or incident (if known), and location of the

carcass, injured animal or other impacted species, and the circumstances of its death or injury (if known). Injured animals shall be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility.

- MM WIL-CEQA-2: DCRT will develop and submit an RMP to the BLM, CDFW, and County for approval prior to the start of ground disturbance and issuance of a County grading permit. The RMP will:
    - Provide education to Project personnel (MM-BIO-CEQA-2).
    - Identify conditions associated with the Project that might provide raven subsidies or attractants.
    - Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities.
    - Describe control practices for offending common ravens.
    - Establish thresholds that would trigger implementation of control practices.
    - Implement adaptive management.
    - Address monitoring and nest removal during construction and for the life of the Project.
    - Identify measures within this plan designed to reflect the above details.

DCRT will provide funding for implementation of the USFWS Regional Raven Management Program. See Section 7 for further details.

1.2.3 Project-Specific Regulatory Requirements

The RMP was prepared to address the Project-specific regulatory requirements identified in the Draft EIS. These measures are summarized in Table F-5-1, and are applicable during the preconstruction, construction, and post-construction/restoration phases of the Project.

Specifically, the BLM BMP Biological (BIO)-28 satisfies the requirements outlined in two CMA standards LUPA-BIO-01 and LUPA-BIO-06 and the MM BIO-CEQA-2, required for common raven management. The CMA standards comply with the California Desert Conservation Area Plan of 1980, as amended (see Project Draft EIS Appendix 2B.2 – CMA Required Plans; BLM 2018). The two CMA standards are also listed in Table F-5-1.

Additionally, BMP-BIO-21 requires that deterrents be installed to reduce nesting and perching opportunities for predatory birds, including the raven. Standards for success includes implementation of mitigation requirements throughout the duration of construction and ravens are, to the extent possible, deterred from nest/foraging within the Project site.

TABLE F-5-1 PROJECT-SPECIFIC MITIGATION REQUIREMENTS

Measure[1]	Description[2]
APM BIO-01	Before starting any work, including mowing, staging, installing stormwater control structures, implementing other BMPs, removing trees, construction, and restoration, all employees and contractors performing activities and new construction would receive training on environmental requirements that apply to their job duties and work. If additional crewmembers arrive later in the job, they would be required to complete the training before beginning work. Training would include a discussion of the avoidance and minimization measures being implemented and would include information on the federal and state Endangered Species Acts and the consequences of not complying with these Acts. An educational brochure would be provided to construction crews working on the Project. This brochure would include color photographs of special status species as well as a discussion of avoidance and minimization measures. (Addresses California Management Action [CMA] Land Use Plan Amendment [LUPA]-Biological Mitigation Measure [BIO]-05 and Mitigation Measure [MM] BIO-California Environmental Quality Act [CEQA]-2)
BMP BIO-01	The worker education program would provide interpretation for non-English speaking workers. (Addresses CMA LUPA-BIO-05 and MM BIO-CEQA-2)
APM BIO-21	Current guidelines and methodologies would be used in the design of the proposed transmission facilities to minimize the potential for raptors and other birds to collide with the transmission line during operations and/or perch on the lines and be electrocuted. For example, aerial marker balls or other visibility markers would be placed at and near the crossing of the Colorado River to increase the visibility of the transmission line to birds using that movement corridor. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. Further, placement of lines significantly above existing transmission lines, topographic features, or tree lines would be avoided. These measures would be implemented, where practicable, in conjunction with an Avian Protection Plan for the Project. The Avian Protection Plan would include requirements for monitoring the effectiveness of anti-collision and anti-perching design.
BMP BIO-21	Aerial marker balls or other visibility markers would be placed on overhead ground wires (not conductors) at crossing of the Colorado River and floodplain to increase visibility to birds using that movement corridor and marking any other static wires to improve visibility and reduce collisions. Deterrents would be added to reduce nesting and perching by ravens and other predatory birds. The Avian Protection Plan would include requirements for monitoring the effectiveness of anti-electrocution design.
BMP BIO-28 (California only)	The Raven Management Plan would be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the common raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for common ravens. As consistent with BLM policy and resource management plans, compensatory mitigation would be provided that contributes to Land Use Plan Amendment (LUPA)-wide raven management associated with lands in the Desert Renewable Energy Conservation Plan.

Measure[1]	Description[2]
CMA LUPA-BIO-6 (California only)	Subsidized predator standards, approved by BLM, in coordination with the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following: • Common raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the common raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for common ravens. • The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators. • Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species. • In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.
CMA LUPA-TRANS-BIO-1 (California only)	Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the common raven, and minimize collision risks for birds and bats.

1 APM = Applicant Proposed Measure; BMP = Best Management Practice; CMA = Conservation and Management Action; BIO = Biological; LUPA = Land Use Plan Amendment; TRANS = Transmission

[2] The Environmental Impact Statement description language is directly from the Project Draft Environmental Impact Statement (Draft EIS) Appendices 2A and 2B (BLM 2018). References for the requirement descriptions can be found in the source documents. Any updates or new requirements determined within the Final Environmental Impact Statement will be updated in the final Plan of Decision management plans.

2 Purpose and Objectives

In recent decades, the common raven population has increased substantially in the southwestern deserts of the United States, primarily in response to human-provided subsidies of food, water, and nest sites (USFWS 2008). Common ravens are a major predator on the threatened desert tortoise (Boarman 1992). The goal of this RMP is to implement non-lethal measures to deter common ravens from the vicinity by eliminating or minimizing raven attractants (e.g., surface water, trash, animal and plant waste materials; and perching, nesting, and roosting sites) during construction, operation, and maintenance of the Project.

As specified in BIO-CEQA-2, the primary RMP objectives include:

1. Identify Project-specific attractants and conditions of concern that may attract common ravens to the area.

2. Provide non-lethal common raven management measures and identify roles and responsibilities for their implementation.

3. Provide the monitoring and reporting requirements for successful implementation of the common raven management measures.

4. Describe adaptive management conditions and strategies for unanticipated circumstances that require additional mitigation support.

3 Potential Common Raven Attractants

3.1 Perch and Nest Opportunities

Common ravens depend on human encroachment to expand into areas where they were previously absent or in low abundance (Kristan and Boarman 2007; USFWS 2008). Common raven predation on juvenile tortoises has been evidenced in the desert by the remains of tortoise carcasses under raven nests, direct observations, and carcasses with distinctive common raven damage (Boarman 1992). Utility structures provide a competitive edge to hunting by facilitating perching high over available food sources, which supports common raven predation activities.

The addition of buildings, billboards, landscape trees, and other structures has introduced common raven nesting opportunities in the desert where they were otherwise very limited. Although many common ravens have been observed in these and other anthropogenic structures, lattice transmission towers and wooden distribution lines have been recorded to increase common raven nesting relative to other nesting substrates (Steenhof et al. 1993). The Breeding Bird Survey data from 1968 to 2004 indicated increase in the common raven populations of more than 700 percent in the west Mojave Desert and more than 70 percent in the east Mojave Desert (USFWS 2008).

3.2 Food and Water Attractants

Common ravens are considered scavengers that obtain a high percentage of their diet from human subsidies such as food, garbage, and road kill (Kristan and Boarman 2007). The potential for road kill due to construction activities and use of access roads could attract common ravens.

The construction, operation, and maintenance of the Project could result in increased food and waste generation due to increased personnel visiting the Project area, particularly during construction. Improper waste management may attract common ravens to the Project area.

During construction, disturbance of the soil and/or vegetation would occur from heavy equipment operation. This disturbance would result in the “unearthing” and exposure of natural food sources for common ravens such as rodents and insects. Common ravens could be attracted to the soil disturbance areas to prey upon unearthed, injured, or dead animals. Similarly, water used during construction, operation, and maintenance for dust abatement, concrete mixing, and revegetation efforts has the potential to attract common ravens.

4 Common Raven Control and Management

Any control methods constituting take of common ravens or their nests – as defined in the MBTA – would require a depredation permit from the USFWS pursuant to the MBTA. The

following minimization and avoidance measures include non-lethal measures to deter common ravens from frequenting the Project, while avoiding common raven take.

The non-lethal measures outlined below are primarily based on guidance from the USFWS Draft Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise (USFWS 2008), Summary of Predation by Corvids on Threatened and Endangered Species in California and Management Recommendations to Reduce Corvid Predation (Liebezeit and George 2002), and Boarman's research and guidance for reducing common raven predation on desert tortoises (Kristan and Boarman 2003 and 2007; Boarman 1992). Approved and published RMPs were also reviewed for projects in the southern California deserts (POWER Engineers, Inc. 2015; CH2MHill 2008 and 2017).

4.1 Perch Deterrents

As outlined in APM/BMP BIO-21 – Reduction of Avian Collision and Electrocution, bird perch deterrents have been shown to discourage birds from perching, roosting, and nesting along electrical lines (Slater and Smith 2010). Perch deterrents, including wire spikes or similar perching/nesting deterrents, are often made of plastic or stainless-steel spikes that can be effective in discouraging birds from landing on structures. Bird spikes are designed to be affixed to structures to provide long-term deterrence; therefore, may be more practical to deter nesting on poles/structures and within substations. Such devices are not likely practical for use on equipment, material storage areas, or contractor yards. Installation of bird spikes on tower structures concurrent with structure construction may discourage birds from nesting on tower structures during construction (see Appendix F-3, Volume III of the Plan of Development).

4.2 Worker Environmental Awareness Program

The Project is required to implement a WEAP to inform all Project personnel of the environmental compliance measures required for the Project. All Project personnel would be required to participate in a WEAP prior to beginning work on the Project. This program would be developed by DCRT prior to the start of construction and would be submitted to the BLM and CPUC for review and approval prior to implementation.

The WEAP will be prepared in accordance with APM/BMP BIO-01, BIO-35, and MM BIO-CEQA-2. The WEAP will be implemented throughout the duration of Project-related construction activities and will include, but not limited to discussion on the following:

- Identification of federal and state ESAs and MBTA and the consequences of non-compliance with these acts.
- Identification and values of plant and wildlife species and significant natural plant community habitats; maps showing exclusion areas and other construction limitations.
- Hazardous substance spill prevention and containment measures.
- Project-specific measures to be implemented for avoidance of sensitive resources and the identification of an onsite contact in the event of the discovery of sensitive species on the site.

- Procedures regarding discovery of dead or injured wildlife and a review of mitigation and reporting requirements.

- Protocols on common ravens and their nests, along with how to avoid attracting the species, such as proper trash removal, trash containment, micro trash, and control of puddling water.

4.3 Litter Control Program

As outlined in BMP BIO-06 – Trash Handling (BLM 2018), a litter-control program will be implemented during construction, operation, and maintenance. The purpose of the litter-control program is to reduce the attractiveness of the area to opportunistic predators such as the common raven as well as the kit fox (*Vulpes macrotis*) and coyote (*Canis latrans*). Trash and food items will be disposed of properly in predator-proof containers with re-sealing lids. Trash containers will be emptied, and construction waste will be removed daily from the Project area and disposed of in an approved landfill. This would also satisfy requirements established in BMP BIO-36 – Feed or Harassment of Wildlife (BLM 2018).

4.4 Injured or Dead Wildlife

Attractants for common ravens can include unearthing prey items such as rodents during grading activities as well as, injured, or dead wildlife within the Project work areas. Per MM BIO-CEQA-2 and BIO-CEQA-3, any carcasses or roadkill encountered in Project work areas or along access roads must be immediately identified, cause of injury or mortality recorded, and reported by the Biological Monitor or Designated Biologist (see Section 5).

Local animal control agency and CPUC (California only) will be notified of the roadkill within 24 hours. In addition, CDFW (California only) and USFWS must be notified about roadkill of special -status species (e.g., desert tortoise or common raven) within 24 hours or otherwise specified in species-specific permits. Carcasses must be placed in secure trash cans in accordance with state and federal regulations. As feasible, implement measures to prevent future incidents. Details of these measures shall be included within monitoring separate incident report. Special status species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, and other appropriate federal and state regulatory agencies as necessary, shall be contacted regarding ultimate disposal of the remains (MM BIO-CEQA-2).

The incident report shall be sent to the CPUC, CDFW, /or USFWS (as appropriate), as well as any other appropriate agencies, within five calendar days. The construction biological monitoring report shall at a minimum include: the date, time of the finding or incident (if known), and location of the carcass, injured animal or other impacted species, and the circumstances of its death or injury (if known). Injured animals shall be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility (MM BIO-CEQA-3).

4.5 Surface Water Management

Water attractants are thought to be an important factor contributing to common raven increases in desert areas (USFWS et al. 2008). The primary use of water on the Project will be dust suppression (BMP AQ-01 – Fugitive Dust; BLM 2018). Water used for dust suppression will be used in small quantities, so that puddling is discouraged. The biological monitors on site will check for areas of standing water, determine their cause, eliminate

them, and determine how to avoid the situation in the future. Any puddles from construction activities will be filled with dirt or sand upon their discovery.

4.6 Removal of Inactive Common Raven Nests

Per the guidelines of the Project Avian Protection Plan, all construction in California within 300 feet of an active nest (non-raptors) is to be halted immediately until the condition of the nest can be ascertained as unobtrusively as possible (BLM 2018). The MBTA prohibits indiscriminate killing of migratory birds including the common raven (USFWS 2008). In addition, bird nests are protected by the MBTA and by CFGC. Like the MBTA, the CFGC 3503 and 3503.5, state that it is illegal to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by CFGC or pursuant regulations. However, it is lawful to remove inactive nests year-round, and to remove nests during the non-breeding season (defined as August 31 through February 1) for most birds, including the common raven.

Nest construction for common ravens begins in late January to mid-April and nest construction takes from one to two weeks. Egg-laying usually occurs five to six days after nest completion, with clutch size ranging from three to five eggs. Incubation lasts 20 to 25 days (Boarman and Heinrich 1999). The nestling period ranges from four to seven weeks, with an average of three chicks produced per nest each year. Fledglings will stay near the nest for four to eight weeks following their first flight, with most nests fledged by June. In the event that a common raven nest with eggs is located in or around the Project, the nest will be removed following the completion of the nesting cycle and outside the avian breeding season (defined as February 1 through August 31; USFWS et al. 2008). Common raven nest removal will be conducted on all property structures for the life of the Project.

If an active common raven nest (i.e., a maintained nest which is occupied by eggs or nestlings or is otherwise essential to the survival of a juvenile bird) creates a safety hazard for the Project, a depredation permit under MBTA must be obtained from the USFWS Migratory Bird Division for it to be removed (USFWS 2013).

4.7 Active Nesting Buffers

If a common raven nest is identified as active within the Project area, it is protected under the MBTA. An appropriate buffer should be recorded and marked with the appropriate flagging. All construction would avoid the area until the hatchlings have fledged the nest. If the buffer crosses the Project access roads, DCRT or their contractor will coordinate with the BLM to determine if a drive-through only zone could be established, where the buffer can be entered by construction vehicles and equipment if no stopping occurs. Special signage will be installed at both ends of the buffer zone. If the buffer intersects with a high disturbance area, DCRT or their contractor will coordinate with BLM to determine if a buffer reduction is applicable (see Nesting Bird Management Plan in Appendix F-3).

4.8 Elimination of Offending Common Ravens

When common ravens are recorded to have predated on desert tortoises within the Project area, they are deemed offending common ravens. Elimination of offending common ravens is not the first course of action and will be avoided, if possible, through the implementation of the methods described in this RMP. If methods to deter the offending common ravens fail and they continue to be a threat to desert tortoises within the Project area, lethal action may

be necessary. Any lethal action must be coordinated through the BLM, USFWS, and, if in California, CDFW given that the common ravens and their active nests are protected under the MBTA and CFGC.

5 Monitoring and Reporting Plan

The following subsections describe the common raven monitoring, management, and control practices that will be implemented during the preconstruction, construction, post-construction/restoration phases of the Project. DCRT or their contractor shall be responsible for all aspects of common raven management described in this RMP.

5.1 Responsible Parties

Prior to discussion of the monitoring and reporting requirements, a description of those responsible for the implementation of these procedures is included below.

5.1.1 Designated Representative

A Designated Representative from the DCRT or their contractor will be responsible for communications with BLM and Designated Biologist(s), and for overseeing compliance with the RMP. Contact information of the Designated Representative will be provided to the BLM prior to construction activities.

5.1.2 Designated Biologist

The Designated Biologist(s) will be independently or jointly assigned by the DCRT or their contractor for their components of the Project and will have been approved by BLM, USFWS, and CDFW, 30 days before start of surveys or monitoring. The Designated Biologist(s) will be responsible for facilitating the implementation of avoidance, minimization, and mitigation measures for the RMP, and will have expertise identifying common ravens, common raven nests, and desert tortoise remains (e.g., carcass, shell, and bone fragments). In addition, the Designated Biologists will hold a bachelor's degree or higher in Biological Sciences, Zoological Sciences, or a related field.

The Designated Biologist(s) will have specific experience in the implementation of similar environmental compliance programs, and ensure compliance with all biological avoidance, minimization, and mitigation measures for the Project. In addition, the Designated Biologist(s) will be responsible for drafting the methods for biological surveys, schedule development, agency coordination, reporting, and supervision of field staff including Biological Monitors.

5.1.3 Biological Monitors

The Biological Monitor(s) will meet the requirements outlined in the BMP BIO-01 and BIO-02 (BLM 2018) and will have prior construction monitoring experience, on projects in desert habitats. The Biological Monitor(s) will be the field contact representative(s) for construction personnel and the Designated Biologist(s) and will be responsible for daily on-site monitoring as well as regular data entry or reporting.

The duties of the Biological Monitor include:

- Being present during all work activities within habitat of special status species and serving as the field contact representative(s) for construction workers and the Designated Biologist(s).
- Being responsible for daily on-site monitoring as well as regular data entry or reporting.
- Minimizing impacts to special status species, native vegetation, wildlife habitat, and unique resources by ensuring that construction personnel follow WEAP training requirements.
- Identifying potential issues or signs of common raven activity and/or predation near potential desert tortoise habitat.
- Reporting concerns to the Designated Biologist(s) where applicable.

5.2 Monitoring Procedures

A Biological Monitor will be on-site to ensure construction-related subsidies available for common ravens are minimized or eliminated. Biological Monitors will observe and document any perceptible increase in common raven numbers and activity due to construction activities.

If construction or vegetation removal is to occur during the avian breeding season (defined as February 1 through August 31 in APM-BIO-20 – Migratory Bird Protection During Construction; BLM 2018), a qualified biologist will conduct preconstruction survey (pre-activity “sweep”) to determine if active nests of any bird species are present within the vicinity of construction. Surveys shall be conducted in areas within 300 feet of proposed disturbance areas including tower sites, laydown/staging areas, substation sites, and access/spur road locations. Surveys of birds shall be conducted for all areas from February 1 to August 31. DCRT or their contractor shall be responsible for designating qualified biologists who can conduct pre-construction surveys and monitoring for breeding birds. The Biological Monitors shall be responsible for documenting the results of the surveys and the ongoing monitoring, and the Designated Biologist(s) will provide a copy of the monitoring reports for impacts areas to the respective agencies. If for any reason a bird nest must be removed during the nesting season, DCRT or their Construction Contractor(s) shall provide written documentation providing concurrence from the USFWS and CDFW authorizing the nest removal.

Biological Monitors will be responsible for identifying any offending common ravens that are noted to prey on the desert tortoise. Potential common raven nests and any significant sightings of common ravens, such as individuals observed consuming trash or water brought in for construction, will be recorded and included in the quarterly compliance report. These observations will be used to help determine whether there is a need for perch deterrents.

5.3 Reporting Procedures

The Designated Biologist(s) will prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of species,

including common ravens and their sign, survey results, and monitoring activities. In addition, the Designated Biologist will immediately report any observations of predation on desert tortoise by common ravens in the Project area to the BLM (Notification of Take or Injury) and USFWS within three days.

A quarterly compliance report will include the daily written observations mentioned above. The report will be submitted to the BLM and will include notes on the implementation of this RMP.

During construction, annual reports will be submitted to the BLM no later than January 31 of every year of construction. The annual report will include any documented common raven monitoring data and any common raven management that was implemented during construction activities. The annual report will include any significant dates and relevant data such as injuries to common ravens, mortality, or circumstances. All reports regarding common ravens will be included in the annual report provided to the BLM and USFWS.

The quarterly and annual reporting on the RMP will include the following data:

- Date construction commenced.
- List of all common raven sightings, number of individuals, locations, and dates.
- List including location and date of all common raven nests found.
- List of any nests that were removed including the rationale for removal and how the determination was made that the nest was inactive.
- Any observed predation on desert tortoise by common ravens.
- List any tortoise remains found in the vicinity of an active common raven nest and verify the nesting stage of the offending common ravens (e.g., incubating, feeding nestlings), describe how agency notifications were completed, and detail the process of event of elimination of the offending common raven(s).
- Summary of monitoring results.
- Photographs and any other relevant documentation or significant data gathered.

6 Adaptive Management (California)

Adaptive management will be required if measures identified in this RMP are ineffective in controlling raven nesting/foraging within the Project area; and ultimately, ineffective in controlling raven predation on the desert tortoise. Ravens are notoriously adaptive and clever, requiring the need for developing new methods of adaptive management. For example, biologists found some success in using conditioned aversion to reduce predation by ravens on the eggs of California least terns (*Sterna antillarum browni*) and similar methods may be developed to reduce predation on juvenile tortoises (Avery et al. 1995).

In San Francisco, California, a longitudinal study was carried out to evaluate the effects of oiling eggs of territorial ravens on the predation of black-crowned night herons (*Nycticorax nycticorax*) nests and recorded an increase in reproductive success for the black-crowned night herons (Brussee and Coates 2018). Flexibility and willingness to adopt new or

experimental methods, are likely to be crucial for the effectiveness of any long-term raven management plan. DCRT will consult with the BLM and the USFWS prior to implementing adaptive management changes.

7 USFWS Regional Raven Management Program

Within California and per the requirements of BMP BIO-28, CMA LUPA BIO-6, and BIO-CEQA-2, DCRT will provide financial assurance to the USFWS Regional Raven Management Program in addition to implementing this Plan. This payment will be submitted either to the Project sub-account of the Renewable Energy Action Team Account held by the National Fish and Wildlife Foundation in support of the USFWS Regional Raven Management Program (National Fish and Wildlife Foundation 2018) or to more current guidance provided by USFWS. The contribution will be $105 per acre of land impacted in California.

8 References

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2B.10 RECLAMATION, VEGETATION, AND MONITORING PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Reclamation, Vegetation, and Monitoring Plan

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154320

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Reclamation, Vegetation, and Monitoring Plan

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TABLES:

ACRONYMS AND ABBREVIATIONS

AES	Aesthetic Mitigation Measure
amsl	above mean sea level
APM	Applicant Proposed Measure
APS	Arizona Public Service Electric Company
AQ	Air Quality
ARS	Arizona Revised Statutes
BIO	Biological Mitigation Measure
BLM	Bureau of Land Management
BMP	Best Management Practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMA	Conservation and Management Action
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Ranking
DCRT	Delaney Colorado River Transmission, LLC
EIS	Environmental Impact Statement
ECM	Environmental Compliance Manager
LUPA	Land Use Plan Amendment
MM	Mitigation Measures
Plan	Reclamation, Vegetation, and Monitoring Plan
POD	Plan of Development
Project	Ten West Link Transmission Project
RL	Reclamation Levels
ROW	Right-of-way
SCS	Series Compensation Station
SOIL	Soil Mitigation Measure
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
VEG	Vegetation

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1 Introduction

The data and information provided in this Reclamation, Vegetation, and Monitoring Plan (Plan) is for the Ten West Link Transmission Project (Project) proposed by Delaney Colorado River Transmission, LLC (DCRT). The guidelines outlined in the Plan were established by the Bureau of Land Management (BLM) principles and procedures, specifically designed for high-voltage transmission projects. The Plan will address specific reclamation activities to be implemented in all construction areas disturbed by the Project and on BLM-administered lands. Reclamation on private properties will be coordinated by DCRT and associated landowners.

The intent of this Plan is to establish and implement reclamation treatments in order to reclaim Project-related disturbances; prevent unnecessary degradation of the environment during construction; restore temporary use areas; and reclaim disturbed areas such that they are ecologically functional and visually compatible with the surrounding environment to the maximum extent possible. All construction activities will comply with all stipulations for reclamation outlined in the Project's Plan of Development (POD) and other applicable documents including the BLM's Record of Decision, Right-of-Way (ROW) Grant and Notice to Proceed.

Details outlined within this Plan are based on guidance from BLM approved and published reclamation plans, prepared for renewable energy and transmission line projects including the Sun Valley to Morgan Transmission Line in Arizona (EC Source 2017a and 2017b), Energy Gateway South Transmission Line in Wyoming (Rocky Mountain Power 2016), and Mohave County Wind Farm in Arizona (URS 2013).

1.1 Organization of the Plan

To facilitate the review and understanding of the Plan, it is organized into six primary sections:

1. Introduction – presents the overall summary and purpose of the Plan.

2. Regulatory Requirements and Authorities – provides descriptions of relevant regulatory requirements and agencies with specific authority within the laws and regulations associated with the Plan.

3. Overview of Existing Environments – describes the vegetation communities that will be affected during construction and post-construction actions.

4. Reclamation Levels – provides details of the reclamation components including plan framework, methodology, and actions to be implemented for the Project.

5. Description of Reclamation Actions – describes the reclamation treatments and activities for each phase of the Project

6. Monitoring – outlines the reclamation monitoring protocol including route and site monitoring to properly document the progression of reclamation success.

1.2 Purpose of the Plan

The purpose of the Plan is to define and recommend construction and reclamation actions (or treatments) that will meet the goals and objectives established by the BLM under the applicable requirements and authorities, as described in the POD, the BLM's Record of Decision, and the Project's Draft Environmental Impact Statement (EIS) in order to recover habitat for sensitive species. In addition, it will provide the protocols and procedures necessary for implementing and monitoring the required reclamation actions.

In adherence to Section 4.13 of the POD, this Plan will be submitted for review and approval by the BLM designated representative prior to the start of any reclamation actions.

2 Regulatory Requirements and Authorities

The following federal authorities, regulations, Resource Management Plans, initiatives, and general guidelines applicable to the Plan are summarized in this section. These regulations provide the regulatory framework that the Project must comply with.

2.1 Federal Regulations, Laws, and Authorities

2.1.1 BLM Terms and Conditions Right-of-Way Grant, Title 43 Code of Federal Regulations Part 2805.12

BLM terms and conditions established in the Title 43 Code of Federal Regulations (CFR) Part 2805.12 state that the Project must: "(Section 8) *Comply with project-specific terms, conditions, and stipulations, including requirements to: (i) Restore, revegetate, and curtail erosion or conduct any other rehabilitation measure the BLM determines necessary; (iii) Control or prevent damage to: (A) Scenic, aesthetic, cultural, and environmental values, including fish and wildlife habitat; (B) Public and private property; and (C) Public health and safety; (iv) Provide for compensatory mitigation for residual impacts associated with the [right-of-way (ROW)] ;* [and] *(vi) Ensure that you construct, operate, maintain, and terminate the facilities on the lands in the ROW in a manner consistent with the grant or lease, including the approved POD, if one was required*."

2.1.2 Federal Land Policy and Management Act of 1976

Section 102(a)(8) (43 United States Code [U.S.C] § 1701) declares "*…public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use*."

2.1.3 Endangered Species Act of 1973

As amended in Section 7 (a)(2) of the Endangered Species Act, the United States Fish and Wildlife Service (USFWS) requires that "…e*ach Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any*

endangered species or threatened species or result in the destruction or adverse modification of habitat of such species …"

2.1.4 Executive Order 13112

Executive Order 13112 requires all federal agencies to prevent the introduction and spread of invasive species through a series of actions including early detection and response, monitoring of known invasive populations, and native species restoration; specifically requiring that a federal agency will "…*not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species*."

2.1.5 Carlson-Foley Act

The Carlson-Foley Act (43 U.S.C. §1241) requires federal land-management agencies to terminate any invasive plant populations growing on their jurisdictional lands. The Carlson-Foley Act states that the federal agency must "*permit the commissioner of agriculture or other proper agency head of any State in which there is in effect a program for the control of noxious plants to enter upon any lands under their control or jurisdiction and destroy noxious plants growing on such land if- (1) such entry is in accordance with a program submitted to and approved by such department or agency: Provided, That no entry shall occur when the head of such Federal department or agency, or his designee, shall have certified that entry is inconsistent with national security; (2) the means by which noxious plants are destroyed are acceptable to the head of such department or agency; and (3) the same procedure required by the State program with respect to privately owned land has been followed*."

2.1.6 Federal Noxious Weed Act of 1974

Under the Federal Noxious Weed Act, the Public Law 93-629 and 76 U.S.C. § 2801 directs the management of invasive plant species on federally-managed lands, including transport of noxious weeds and how to contain their spread on federal lands.

2.1.7 BLM Manual 1740-1 Integrated Vegetation Management

BLM Manual 1740-1 outlines policies and procedures on planning and implementing resource improvements and treatments including forestry, invasive species, and range management.

2.2 State Regulations, Laws, and Authorities

2.2.1 California Code of Regulations: Noxious Weed Species

The California Code of Regulations Title 3 – Plants and Agriculture, Division 4 - Plant Industry, Chapters 3-7 focus primarily on invasive species and management; specifically, discussing plant quarantine, weed eradication, and listing plants species determined to be invasive in the state of California.

2.2.2 California Environmental Quality Act

A statute passed in 1970, the California Environmental Quality Act (CEQA) requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible (California Natural Resources Agency 2014). The California Public Utilities Commission (CPUC) is responsible for determining if the Project will be constructed in accordance with CEQA requirements and issue to DCRT a Certificate of Public Convenience and Necessity for transmission infrastructure within California.

2.2.3 Arizona Revised Statutes Title 3

Arizona Revised Statutes (ARS) Title 3 – Agriculture (ARS 3-205.01) outlines the abatement of Arizona noxious weeds, stating that "…*the director may treat, spray, control, suppress or eradicate noxious weeds, crop pests or diseases through a countywide, area-wide or statewide program or programs that have been approved or authorized by the department. If such countywide, area-wide or statewide program or programs affect cotton, the program or programs must also be approved by the cotton research and protection council. The director may take whatever actions that are necessary to assist, support or enforce such programs including entering any fields to treat, spray, control, suppress or eradicate noxious weeds, crop pests or diseases under these authorized or approved programs*."

2.3 Project-Specific Requirements

This Plan was prepared to address Project-specific regulatory requirements applicable during the pre-construction, construction, and post-construction phases of the Project, that cover the BLM terms and conditions in 43 CFR Part 2805.12 (see Section 2.1.1). The Project-specific regulatory requirements including the BLM Best Management Practices (BMPs) and DCRT's Applicant Proposed Measure (APM) are summarized in Table L-1-1.

Table L-1-2 describes the California requirements for the Project. As depicted in Appendix 1C of the Draft EIS, this would include the Mitigation Measures (MM) under CEQA and relevant CEQA MMs are listed in Table L-1-2. In addition, the Conservation and Management Actions (CMAs) required under the California Desert Conservation Area Plan of 1980 as amended (BLM 2018), are described in Table L-1-2. The BMPs and APMs address pertinent CEQA MMs and CMAs which is also noted within the descriptions of Table L-1-1.

Specific ROW Grant stipulations received pertinent to the reclamation actions will be added to this section of the Plan (see Table 1-3 of the POD).

TABLE L-1-1 PROJECT-SPECIFIC APMS AND BMPS ADDRESSED UNDER THIS PLAN

Originiator[1]	Measure[4]	Description[1, 2]	Project Phase			CA Only
			Pre-Constr.	Const.	O&M	
APM	BIO-12	A Noxious Weed Control Plan (Appendix 2B in the Project Plan of Decision) would be developed, approved by the BLM, and implemented prior to initiation of ground disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area,	X	X	X	

Originiator[1]	Measure[4]	Description[1, 2]	Project Phase			CA Only
			Pre-Constr.	Const.	O&M	
		describe measures to conduct pre-construction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and practices for the application of herbicides; and other requirements in applicable BLM Weed Management Plans. (Addresses CMA LUPA-BIO-6, -10, and -11)				
APM	BIO-15	A Habitat Restoration and Monitoring Plan would be developed, approved by BLM, and implemented for construction and operation of the Project. Revegetate all sites disturbed during construction that would not be required for operation of the transmission line, and restore disturbed areas to the extent practicable, given the arid desert environment. The Plan would describe in detail methods for surveying and characterizing vegetation in disturbed areas before construction; topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. It would be designed to reduce impacts on special status species to the extent practicable. (Addresses CMA LUPA-BIO-7/8/10)	X	X	X	
BLM	BIO-15	As a part of the Habitat Restoration and Monitoring Plan, the soil horizons would be stored separately for the areas where the success of restoration could be crucial for rare plant species. (Addresses CMA LUPA-BIO-7/8)	X	X	X	X
APM	BIO-26	An inventory of plants protected under the Arizona Native Plant Law would be conducted on State Trust lands as required by the Arizona State Land Department. Similar surveys would be conducted on lands managed by BLM, as directed by that agency.	X	X		
BLM	BIO-41	[Succulent Management]	X	X	X	

Originiator[1]	Measure[4]	Description[1, 2]	Project Phase			CA Only
			Pre-Constr.	Const.	O&M	
		All activities would follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents. Pre-construction surveys of disturbance zones would include preparation of maps delineating special vegetation features. (Address CMA LUPA-BIO-7, LUPA-BIO-SVF-1, LUPA-BIO-VEG-1, -5, and -6)				
BLM	BIO-42	Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis. (Addresses CMA LUPA-BIO-VEG-2)	X	X	X	
BLM	BIO-43	Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes. (Addresses CMA LUPA-BIO-VEG-3)	X	X	X	
BLM	SOIL-01	During reclamation and revegetation efforts, a BLM soil scientist and/or botanist review plans and approve, as appropriate, to determine type and location of any scarification.		X		X
BLM	SOIL-02	During reclamation and revegetation efforts, the BLM would review plans and approve, as appropriate, to determine where soil compaction would be appropriate, to avoid potential adverse conditions created by compaction.		X		X
APM	AES-02	Upon completion of the Project, all construction material and debris from the permanent right-of-way and temporary staging areas would be removed and the areas restored. All work areas would be graded and restored to as close to pre-construction conditions as possible.	X	X	X	
BLM	AES-02	Work area reclamation would include pulling and tensioning sites; all disturbed work areas associated with the Project.	X	X	X	
BLM	AES-12	The Reclamation Plan for the Project would include measures designed to reduce long-term impacts to visual resources.	X	X	X	
BLM	AQ-01	[In conjunction with an Erosion, Dust Control, and Air Quality Plan and Fugitive Dust Control Plan for the Project]] The following measures would be implemented as applicable at all construction sites: • Replant vegetation in disturbed areas as quickly as possible, consistent with seasonal survival considerations.	X	X		

[1] APM = Applicant Proposed Measure; BLM = Bureau of Land Management; BMP = Best Management Practice; SOIL = Soil Mitigation Measure; AES = Aesthetic Mitigation Measure; AQ = Air Quality Mitigation Measure; BIO = Biological Mitigation Measure; LUPA = Land Use Plan Amendment.
[2] The Environmental Impact Statement mitigation measure language was copied from the Project Draft Environmental Impact Statement (EIS) Appendix 2A and 2B (BLM 2018). References for the requirement descriptions can be found in the source documents.

TABLE L-1-2 PROJECT-SPECIFIC CALIFORNIA REQUIREMENTS UNDER THIS PLAN*

Requirement[1]	Description[1, 2]
MM BIO-CEQA-1	Implement Biological Resources APMs, BLM BMPs, and CMAs as part of the Project and applied prior to, during, and after Project activities to avoid or minimize Project related impacts on biological resources; see Section 1.2.4. Where an APM, BMP, or CMA is subjective (I.e., "where appropriate", "where feasible"), DCRT or their Construction Contractor(s) will consult with BLM and CPUC to determine applicability of each measure prior to the disturbance of a covered resource. Weekly and monthly documentation of compliance will be provided to the BLM and CPUC; further details are provided in Appendix 1C of the Draft EIS.
CMA LUPA-BIO-6	Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following: • The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators. • Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non- native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species. All activity work areas will be kept free of trash and debris. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site. In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.*
CMA LUPA-BIO-7	Where Desert Renewable Energy Conservation Plan vegetation types or Focus or BLM Special Status Species habitats may be affected by ground disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below: • Implement site-specific habitat restoration actions for the areas affected including specifying and using: o The appropriate seed (e.g., certified weed-free, native, and locally and genetically appropriate seed) o Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities) o Equipment o Timing (e.g., appropriate season, sufficient rainfall) o Location o Success criteria o Monitoring measures o Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands. • Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance

Requirement[1]	Description[1, 2]
	using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site. • Restore and reclaim short-term (i.e., 2 years or less) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project-specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.
CMA LUPA-BIO-8	All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following: • Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measurable criteria). • Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists. • Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species. • Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.
CMA LUPA-BIO-10	Consistent with BLM, state, and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate, and at a minimum will include the following: • Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds. • Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site. • Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds. • Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species. • Reestablish native vegetation quickly on disturbed sites. • Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas. • Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.
CMA LUPA-BIO-11	Implement the following CMAs for controlling nuisance animals and invasive species: • No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur. • Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies. • Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.

Requirement[1]	Description[1, 2]
	• Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water. • When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.
MM VEG-CEQA-1	The overall purpose of this measure is to develop and implement a Vegetation Management Plan; however, within this measure holds the CEQA requirements of post-construction surveys, monitoring, and reports related to vegetation restoration. The Vegetation Management Plan shall detail procedures to manage, monitor, mitigate, and restore native vegetation and habitat, as well as provide controls for noxious and invasive weed species. The Vegetation Management Plan shall incorporate the APMs, BMPs, and CMAs, by including the specifications detailed in the Habitat Restoration and Monitoring Plan, the Noxious Weed Management Plan/Invasive Species Management/Control Plan, and all other applicable vegetation management mitigation and monitoring plans associated with the Project.
CMA LUPA-BIO-VEG-1	Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.
CMA LUPA-BIO-VEG-2	Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.
CMA LUPA-BIO-VEG-3	Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.
MM VEG-CEQA-4	Compensation for impacts to special-status plant species and sensitive communities; specific to reclamation and/or restoration of vegetation includes the following: <u>Onsite Compensation:</u> Compensation for unavoidable temporary impacts to special-status plant species shall include on-site habitat restoration with similar species compositions to those present prior to construction at a ratio of 1:1. Restoration measures shall be documented in the Vegetation Management Plan (MM-VEG-CEQA-1), as well as the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. <u>Off-Site Compensation:</u> It was assumed that Project-related impacts would result in the loss of more than 10 percent of the on-site population of any special-status plant species with a CRPR of 1 or 2. Compensation for permanent impacts to special-status plant species based on the results of the floristic surveys shall include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program at a minimum 3:1 replacement ratio. DCRT or their Construction Contractor(s) shall coordinate with CPUC, BLM, and CDFW to determine the appropriate mitigation strategy and final replacement ratios and acreages. All mitigation shall be approved by the appropriate federal and state regulatory agencies prior to Project activities. DCRT or their Construction Contractor(s) shall restore all temporary impacts to sensitive vegetation communities (e.g., blue Palo Verde [*Cercidium floridum*]-ironwood [*Olneya tesota*] woodland, mesquite [*Prosopis* spp.] thickets, bush seepweed [*Suaeda nigra*] scrub, etc.) and special-status species habitat at a minimum ratio of 1:1, as detailed in the Vegetation Management Plan (MM-VEG-CEQA-1) and the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan (MM-VEG-CEQA-4). To compensate for permanent impacts to sensitive vegetation communities and special-status species habitat, DCRT or their Construction Contractor(s) shall provide the creation and/or restoration of habitat at the following ratios: • Permanent impacts to sensitive vegetation communities, (e.g., riparian desert woodland habitats, blue Palo Verde-ironwood woodland, mesquite thickets) shall be mitigated at a ratio of 5:1;

Requirement[1]	Description[1, 2]
	• Permanent impacts to other sensitive vegetation communities shall also be mitigated at a ratio of 5:1; and • Permanent impacts to jurisdictional waters/wetlands shall be mitigated at a minimum ratio of 2:1, or as otherwise specified by the appropriate federal and state regulatory agencies. Off-site compensation lands and/or established mitigation bank program will be identified, if available, in coordination with the appropriate federal and state regulatory agencies. Off-site compensation lands will consist of habitat occupied by the impacted special-status plants at the appropriate ratio of acreage and the number of plants for any occupied habitat affected by the Project. Occupied habitat will be calculated on the Project site and on the compensation lands as including each special-status plant occurrence. Off-site compensation shall be documented in the Project-specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan and approved in consultation with the appropriated federal and state regulatory agencies. DCRT or their Construction Contractor(s) shall provide for open space/conservation easements on all acquired lands or provide the required funds for the acquisition of easements to a "qualified easement holder"; the CDFW is a qualified easement holder. To qualify as a "qualified easement holder" a private land trust must have substantial experience managing open space/conservation easements that are created to meet mitigation requirements for impacts to special-status species, have adopted the Land Trust Alliance's Standards and Practices, and have a stewardship endowment fund to pay for its perpetual stewardship obligations. DCRT or their Construction Contractor(s) shall also provide the "qualified easement holder" with adequate funds to cover administrative costs incurred during the creation of the easement, funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the easement in perpetuity. For special-status plant restoration or enhancement activities, several techniques can be applied including: Salvage: DCRT or their Construction Contractor(s) shall consult with the designated qualified biologist/botanist, as well as the appropriate federal and state regulatory agencies, regarding the feasibility and likely success of salvage efforts for each special-status plant species. If salvage is deemed to be feasible, then DCRT or their Construction Contractor(s) shall incorporate salvage measures into the Project-specific Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan, which shall be approved by the appropriate federal and state regulatory agencies prior to implementation. Propagation and Off-Site Introduction: If salvage and relocation is not believed to be feasible for special-status plants, then DCRT or their Construction Contractor(s) shall consult with appropriate federal and state agencies, as well as other qualified entities if needed, to develop an appropriate experimental propagation and relocation strategy, based on the life history of the species affected. The strategy will include at minimum: (a) a planting methodology including strategies for species specific collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d); time of year that the salvage and other planting or transplantation practices will occur; (e) irrigation; (f) erosion controls; (g) success criteria; and (h) a detailed monitoring program. All propagation and off-site introductions strategies shall be documented in the Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan for the Project. Restoration: Restoration can be used to mitigate impacts and depending upon the degree of impact, habitat restoration may be as simple as removing debris and controlling public

Requirement[1]	Description[1, 2]
	access. In more complex situations, however, partial or total restoration of degraded habitat may require extensive revegetation, and soil protection and stabilization programs. The strategy will include at a minimum: (a) BLM approved genetically and ecologically appropriate native plant materials suitable for the site; (b) a description of any required topsoil salvage, plant salvage, seeding techniques, and methods to stabilize and shape soil surface to reduce soil erosivity; (c) monitoring and reporting protocols; and (d) success criteria. Restoration must be tailored to the specific project site based on the habitat and species involved. Monitoring and Maintenance: All mitigation for special-status plant species shall be monitored to assess progress and to make recommendations for successful establishment. Monitoring shall be performed by qualified biologist/botanist that DCRT or their Construction Contractor(s) has designated. At a minimum, Monitoring shall include qualitative and quantitative methods as described in MM VEG-CEQA-1 for the Vegetation Management Plan and MM VEG-CEQA-4 Special-Status Plant and Sensitive Vegetation Community Mitigation and Monitoring Plan. Monitoring shall identify the need for remediation or maintenance work well in advance of final success/failure determination. Monitoring and maintenance progress toward achieving success criteria, conditions, and all observations pertinent to eventual success shall be documented in the Post-Construction Vegetation Management Quarterly Monitoring Progress Reports, and the Annual Post-Construction Vegetation Management Report, as described in the Vegetation Management Plan measure (MM-VEG-CEQA-1). If federally- and/or state-listed plant species are identified within project disturbance areas, then consultation with the appropriate resource agencies will be required to develop acceptable mitigation prior to construction, which may include additional measures. Conservation measures to protect or restore listed special-status plant species, or their habitat, may be required by the appropriate federal and state regulatory agencies before impacts are authorized.
CMA LUPA-BIO-VEG-5	All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.
CMA LUPA-BIO-VEG-6	BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.

[1] APM = Applicant Proposed Measure; BIO = Biological Mitigation Measure; BLM = Bureau of Land Management; BMP = Best Management Practice; CDFW = California Department of Fish and Wildlife; CEQA = California Environmental Quality Act; CMA = Conservation Management Action; CPUC = California Public Utilities Commission; CRPR = California Rare Plant Ranking; DEIS =Draft Environmental Impact Statement; DCRT = Delaney Colorado River Transmission, LLC; LUPA = Land Use Plan Amendment; MM =Mitigation Measure; VEG = Vegetation

[2] The Environmental Impact Statement mitigation measure language was copied from the Project DEIS Appendix 2B and 2C (BLM 2018). References for the requirement descriptions can be found in the source documents.

3 Overview of Existing Environments

The Project is located in the North American Deserts Ecoregion (Level I division) and the Sonoran Basin and Range subdivision (Level III division) (United States Environmental Protection Agency 2013). This ecoregion is characterized by scattered low mountains and has large tracts of federally-owned lands. The majority of the Project area is included within two subdivisions of the Sonoran Desert: Lower Colorado River Valley and Arizona Uplands, represented by various plant associations and habitat types (including physical features).

As stated in the Project's Draft EIS, the Project Area is in the Sonoran Desert subdivision of the physiographic province with elevations from 100 feet above mean sea level (amsl) in the desert valley floor to 4,000 feet amsl in the hills, buttes, and mountain tops (Fenneman 1931).The Arizona mountain ranges in and near the Project area are generally lower than

3,700 feet in elevation with valley bottoms ranging from approximately 300 to 1,200 feet amsl; however, the California flat terrain of the Project area has elevations ranging from approximately 250 to 2,500 feet amsl.

Reclamation actions and treatments will be specific to the Project setting, where the vegetation communities are situated. Resource impacts will be effectively mitigated through these reclamation activities. Reclamation of temporarily disturbed lands would occur primarily during the construction and post-construction phases of the Project. Once pre-construction plant surveys are completed in the field, known vegetation communities will be updated within the POD appendices, as necessary. Descriptions of the following existing environments can also be found within the Vegetation Management Plan (Appendix F-7 of the POD).

3.1 Biotic Communities and Existing Habitat Series

The Project will consider each existing habitat series as reclamation actions are implemented along the ROW. Details on existing environments are based on guidance from land-cover data provided in the Project Draft EIS, the Biotic Communities in the Southwestern United States and Northwestern Mexico (Brown 1994), and the Manual of California Vegetation (California Native Plant Society 2009).

Portions of the Project occur within the Lower Colorado River Valley and Arizona Uplands. The Lower Colorado River Valley subdivision is the most arid subdivision of the Sonoran Desert and is characterized by open vegetative communities with unique flora tolerant of extremely high temperatures. The Arizona Uplands is a mixture of multi-dissected slopes and plains more watered and considered the least desert-like desert scrub in North America (Brown 1994). See below for the vegetation series that the Project intersects within this subdivision.

3.1.1 Creosote Bush-white Bursage Scrub Series

Within the Lower Colorado River Valley subdivision, creosote bush - white bursage (*Larrea tridentata – Ambrosia dumosa*) are widespread occurring from steep slopes to old volcanic rock formations. This series includes other species such as big galleta (*Hilaria rigida*), indigo bush (*Psorothamnus schottii*), longleaf ephedra (*Ephedra trifurca*), and wild buckwheat (*Eriogonum deserticola*). This community is an indicator of “soil arability” where sandy loams occur around plant mounds (Brown 1994; California Native Plant Society 2009).

3.1.2 Allscale Scrub Series

Within the Lower Colorado River Valley subdivision, allscale scrub mixed saltbush seriesor mixed saltbush series (*Atriplex* spp.) generally prefers gently sloped valleys and often creates patches of habitat within creosote bush-bursage habitats. Allscale saltbush (*Atriplex polycarpa*) dominate this shrub canopy that includes four-wing saltbush *(Atriplex canescens*), cheesebush (*Ambrosia salsola*), bladderpod *(Cleome isomeris*), Alkali goldenbush *(Isocoma acradenia*), and creosote bush. The saltbush scrub occurs typically where soils are more saline (Brown 1994).

3.1.3 Blue Paloverde – Ironwood – Woodland Series

Within the Lower Colorado River Valley, a vegetation community referred to as the blue palo verde – ironwood woodland (*Parkinsonia florida – Olneya tesota*) or can be considered desert dry wash woodland (California Native Plant Society 2019). Typically, this series is open to fairly dense assemblages along washes and similar places where blue palo verde, ironwood, desert lavender (*Hyptis emoryi*), indigo bush, jojoba (*Simmondsia chinensis*), and other Sonoran typical species may exist (Brown 1994; California Native Plant Society 2009).

3.1.4 Saguaro – Foothill Palo Verde – Velvet Mesquite Desert Scrub

From the Arizona uplands Subdivision, the most iconic of vegetative series within the Sonoran Desert is the paloverde – cacti – mixed scrub or saguaro (*Carnegiea gigantea*) - foothill palo verde (*Cercidium microphyllum*) - velvet mesquite (*Prosopis velutina*) desert scrub. This series develops from valley floors on bajadas, washes, and mountain sides where broken ground and multi-dissected sloping plains occur. Low cover would include brittlebush (*Encelia farinose*), fagonbush (*Fagonia laevis*), creosote bush, and Hall's purple bush (*Tetracoccus hallii*) and cacti including teddy bear cholla *(CylindropuntiaCylindropuntia bigelovii*), desert ChristmasC cactus (*Opuntia leptocaulis*), pencil cholla (*Cylindropuntia arbuscular*), Engelmann's prickly pearpp (*Opuntia engelmannii*), hedgehog cactus (*Echinocereus fasciculatus*), fishhook pincushion (*Mammillaria microcarpa*), and compass barrel cactus (*Ferocactus acanthodes;* Brown 1994; California Native Plant Society 2009).

3.1.5 Jojoba Scrub Series

A local dominance within the Arizona Uplands is called the Jojoba Scrub. Jojoba is an unusual evergreen shrub with thick, bluish-green foliage and acorn-like fruits popular for game stock to forage. Intermittent with California sagebrush (*Artemisia californica*), can cholla (*Cylindropuntia californica*), hedgehog cactus, Acton's brittlebush (*Encelia actonii*), brittlebush, California buckwheat (*Eriogonum fasciculatum*), broom snakeweed (*Gutierrezia sarothrae*), beavertail cactus (*Opuntia basilaris*), and Mojave yucca (*Yucca schidigera*), this series mostly occurs in the upper limits along open well-drained slopes and alluvial fans (Brown 1994; California Native Plant Society 2009).

3.1.6 Mesquite Series

Mesquite Series, also known as mesquite thickets, bosques, or *Prosopis* woodland alliance, is a dominant mix of mesquite (*Prosopis* spp.) including the honey mesquite (*Prosopis glandulosa*), velvet mesquite, (*Prosopis velutina*), and screwbean mesquite (*Prosopis pubescens*) that tend to exist near areas of intermittently flooded soils or floodplains, stream banks, washes, or surrounding alkali sinks or salty basins within the Lower Colorado River Valley subdivision (Brown 1994; California Native Plant Society 2009).

3.1.7 Bush Seepweed Series

A biotic community of bush seepweed (*Suaeda nigra=Suaeda moquinii*), iodine bush (*Allenrolfea occidentalis*), saltbush spp., and desert broom (*Baccharis sarothroides*), that can occur around areas of high salt concentrations like margins of dry or wet lakes within the Lower Colorado River Valley subdivision (Brown 1994; California Native Plant Society 2009).

3.1.8 Creosote Bush Scrub

The creosote bush scrub mirrors the creosote bush-white bursage series with creosote bush dominating, but white bursage and big galleta plants less important and exist on alluvial fans, bajadas, or upland slopes with pavement surfaces (California Native Plant Society 2009). Other common plants include spiny hopsage (*Grayia spinosa*), saltbush spp., Mojave yucca, brittlebush, bladder sage (*Salazaria mexicana*), shadscale saltbush (*Atriplex confertifolia*), and Nevada ephedra (*Ephedra nevadensis*; Brown 1994).

3.1.9 Other Land Use Cover

Other land use cover categories that the Project intersects include agricultural lands (irrigated row and field crops), urban or residential landscape, and open water including the Colorado River (BLM 2018). DCRT will coordinate with private landowners in areas where the Project crosses private properties.

It is crucial for reclamation efforts of the Project to match the specific ecological communities disturbed, to the maximum extent practicable. Reclamation actions including topsoil salvage provides seeds and organic materials typical of a certain area which are important for ecological recovery (see Section 5.1.6). During pre-construction efforts, plants including mature trees, sensitive species, succulents, and cacti will be assessed if preservation or transplanting actions can be applied (see Sections 5.1.3 and 7.1.4). The Succulent Management Plan within the Vegetation Management Plan (Section 15 within Appendix F-7 of the POD) provides planting and transplanting specific to succulent species. The Special Status Plant Transplantation Plan and Compensation Plan within the Vegetation Management Plan (Section 16 within Appendix F-7 of the POD) provides more details on transplanting and preserving of special status plant species. Native forbs, herbaceous flowering plants, shrubs, and grasses that are dominant to the specific disturbed region will be used within the Project seed mixes, as approved by the BLM (see Section 5.2.3).

4 Reclamation Levels

The purpose of establishing Reclamation Levels (RL) is to assist with the implementation of reclamation activities. Project modification or variances may occur, and these RLs provide clear guidance on what reclamation activities will be required for those changes. Each RL was determined based on type(s) of construction activity, facility features, the area of associated disturbance, and disturbance type and duration. Activities associated with Project construction of principal and supplemental facilities include:

- Surveying the Project centerline and work areas.
- Pre-construction resource surveys for sensitive resources and noxious weeds.
- Upgrading or construction of access roads (temporary and permanent).
- Clearing and grading activities.
- Excavating and installing foundations.
- Structure assembly and installation on pad sites (temporary and permanent).

- Stringing conductors and ground wires.
- Clean-up and reclamation of affected areas.

Details of these activities and their associated disturbance characteristics can be found in Section 4.2 and within Project Disturbance described within the POD (Section 3.4.1 of the POD). The following subsections will break down disturbance duration and types as well as the five RLs based upon Project activities and disturbances.

4.1 Disturbance Durations

Disturbance duration would be either temporary or permanent. These are subsequently described and include details on construction activities that are associated with each disturbance duration.

4.1.1 Temporary Disturbances

Temporary disturbance areas include those intended for short-term use during construction during the Project. Roads and areas only needed for the construction of the line but not for operation and maintenance will be fully reclaimed to previous contours to match surrounding topography to the extent practical. These areas include but are not limited to:

- Structure sites; typical temporary work area assumed for each structure, with exception to the structure base dimensions (long-term disturbance for operation and maintenance).
- Puller/tensioner sites; area of work where conductor, shield wire, and pulling equipment (i.e., puller, tensioner, wire wheels, wire boats) must be stationed in order to pull, string, and create the necessary tension of wire required transmission line support; roads placed for the access to puller/tensioner and guard pole sites will be fully reclaimed and seeded during the reclamation phase.
- Laydown yards; synonymous for material staging and storing.
- Access roads; temporary access roads required to access the structure sites and not needed for operation and maintenance of the line (i.e., spur roads).
- Turn-outs or pull-outs; areas along access roads that provide an appropriate location for turning and moving aside the road safely and remain within the approved ROW limits.
- Snub sites; area where conductor is temporarily fixed or attached to the ground for conductor-sagging purpose.
- Helicopter fly yard; areas for supporting helicopter construction only.
- Guard structures or guard pole sites; temporary clearance structures set up over highways, transmission lines, structures, waterways, and other obstacles prior to conductor stringing.

Blading within temporary disturbances are generally allowed with the purpose of leveling the site but will be restored after construction activity ceases. For more details on all Project-related construction activities and features, see Section 3 and 4 of the POD.

4.1.2 Permanent Disturbances

Permanent disturbance areas include those intended for long-term use for Project operation, and maintenance activities after construction is completed. This includes areas where a blading has permanently transformed the landscape by removing vegetation and leveling the sites (see Section 3.1 of the POD). Examples include, but are not limited to:

- Structure base sites; areas within structure sites required for long-term maintenance and operation of the structures.
- Access roads; new access roads located outside the ROW or access roads to each structure site for long-term maintenance and operation of the transmission line.
- Guyed-V; structures that include a single footing and four support guy wires anchored into the ground.
- Series Compensation Station (SCS; see Section 3.1.11 of the POD); proposed SCS and Site-Distribution Line that will be permanent, with the exception of distribution structure sites (temporary disturbance).

Existing access roads and pre-disturbed areas that are not Project-related disturbances are also categorized as permanent disturbance (“no new disturbance”). These areas would not require improvements by the Project (i.e., vegetation removal, grading); and thus, would not require reclamation actions.

Table L-1-3 identifies the anticipated construction features and describes the area of potential temporary or permanent disturbance within the Project. Two construction features are represented in temporary and permanent disturbance durations.

For all roads that remain in place for operation and maintenance of the Project, travel surfaces in the width of the roadbed will be permanent disturbance, with the road-base intact and unseeded. Cuts and fills to support the permanent road matrix will remain in place with clean-up activities performed. Such activities include: berms rounded to a reasonable slope that would remain in place for safety, erosion, and sediment control. In low-lying slopes, berms may be track walked to a lower height than necessary for steep areas and allow wildlife (e.g., desert tortoise [*Gopherus* spp.]) to safely escape the road bed. Reinforced water bars will be placed on roads up to the operator’s discretion.

Fill may be pulled up or rounded and blended in a roughened state for seed bed preparation, with seeding to follow completion of reclamation dirt work activities. It is assumed that only the permanent width of the travel surface is accounted for as permanent disturbance and cuts and fills reseeded are considered temporary disturbances.

TABLE L-1-3 CHARACTERISTICS OF CONSTRUCTION DISTURBANCE FOR THE PROJECT[1]

Construction Feature	Description[2]
Temporarily Disturbed Land	
Structure sites	Estimated total work sites to be approximately 200 feet by 200 feet or maximum 1.1 acre (the total number of structures will be determined when the route is finalized)
Wire pulling/tensioning sites	Dimensions estimated 500 feet by 200 feet
Snubbing sites	Estimated 200 feet by 600 feet
Laydown yards	Anticipated four sites totaling 34.5 acres
Access roads (improve existing, spur, pull-out, and new)	Access roads estimated for 16-foot surface and 2-foot-wide berms on each side = 20 feet[3]; maximum 18-foot-wide[3]e; see Table 3.3 of the POD (if pullouts are required = 10-foot-wide by 150 feet length[3])
Helicopter fly yards	Preliminary fly yards (total of four) estimated between 5.8 acres to 43.5 acres; see Table 3.8 of the POD
Guard structure sites	50 feet by 200 feet (10,000 square feet) work area at each structure (2 typical per crossing; additional at highways)
SCS Site-Distribution Line[4]	15 feet by 40 feet per structure
Permanently Disturbed Land	
Structure base sites (within structure sites)	Dimensions estimated 50 feet by 50 feet for structure base site and 9 feet by 9 feet for each foundation
Access roads (improve existing, spur, and new)	From 16-foot to 22-foot travel surface[3]
Guyed-V structures	Estimated 81 square feet with a 9-foot by 9-foot base; total 84.1 square feet per structure
SCS[4]	Estimated 200 feet by 315 feet fenced area and additional 10 feet of disturbance outside the fenced area; total permanent disturbance approximately 1.7 acres
SCS Site-Distribution Line[4]	18-inch radius per structure

[1]Table derived from EC Source 2017a.
[2]Details derived from Section 3 of the POD.
[3]If existing roads need to be improved beyond existing disturbance widths, depending on degree of slope and amount of displaced soils, the maximum total disturbance width is 30 feet, with exception to Copper Pass Bottom Pass maximum total disturbance width of 50 feet (Section 3.1.10 of the POD).
[4]SCS = Series Compensation Station

4.2 Disturbance Types

Four broad disturbance types are defined based on activities associated with the construction or Project facilities and are considered when identifying the appropriate RLs and practices. These disturbance types are described below.

4.2.1 No New Disturbance

No new disturbance includes existing access roads or pre-disturbed locations that do not require improvements and will remain permanent after Project construction is complete.

4.2.2 Drive and Crush

Vegetation is crushed by equipment and, generally, not cropped or removed from the site. Soil compaction occurs, but no surface soil is removed, preserving existing root mass and topsoil so vegetation may re-sprout after the conclusion of construction. “Drive and crush” will likely be used for Project wire-stringing sites and helicopter fly yards where possible.

4.2.3 Clear and Cut

Vegetation is brushed off the work area in order to provide suitable access for equipment and vehicles. The soil is compacted, but no surface soil is removed (i.e., no blading of topsoil).

4.2.4 Grade

Similar to “clear and cut,” all vegetation is removed within the work area; however, surface soils are either altered or displaced to another location upon review and approval of the CIC. This provides suitable access for equipment and vehicles as well as the installation of structures. Typically, the work area can require a heavier level of ground disturbance and, in some cases, work requires grading and filling (i.e., removed soil becomes the fill material) for new access roads, clearing and grading that may be associated with structure installation, or improve existing access.

Based on the type and duration of disturbance associated with the construction features of the Project, each level of reclamation can be identified below.

4.3 Reclamation Levels Defined

4.3.1 Reclamation Level 1 (RL1)

RL1 is characterized by a minimal level of disturbance and a minimal level of reclamation intensity (Permanent). Construction in these areas produces no new disturbance, requiring minimal pre-construction treatment, and will normally require no post-construction actions (outside of routine maintenance). As described below in Section 5.1.1, some RL1 areas will require pretreatment of existing weeds to protect from the infestation and spread of noxious weeds.

4.3.2 Reclamation Level 2 (RL2)

RL2 is characterized by a low level of disturbance and a moderate level of reclamation intensity (Temporary). Construction and disturbance activities in these areas are temporary, resulting in disturbance being confined to overland construction. Vegetation crushing will require a moderate level of reclamation actions. As presented below in Section 5, reclamation actions focus on noxious weed control and soil decompaction.

4.3.3 Reclamation Level 3 (RL3)

RL3 is characterized by moderate level of disturbance and a high level of reclamation intensity (Temporary). Construction in these areas produces moderate temporary disturbance that requires clearing, cutting of vegetation, and several reclamation actions as presented in Section 5. In addition, cleared vegetation will be used as mulch cover, and supplemental mulch (e.g., straw certified weed-free by California County Agricultural Commissioners in conjunction with the California Department of Food and Agriculture) may be used to protect cleared areas. As appropriate, areas of reclamation will be flagged, or signage installed to provide protection.

4.3.4 Reclamation Level 4 (RL4)

RL4 is characterized by a moderate/high level of disturbance and a moderate level of reclamation intensity (Permanent). Construction in these areas produces a high level of permanent disturbance. These areas are associated with long-term maintenance and operation of the Project; specifically, new permanent access roads and structure pads. Minimal reclamation action is required including no revegetation and minimal soil replacement. Topsoil should be salvaged to be used in other areas slated for topsoil replacement.

4.3.5 Reclamation Level 5 (RL5)

RL5 is characterized by a high level of disturbance and the maximum level of reclamation intensity (Temporary). Construction in these areas produces a high level of disturbance, due to vegetation and soil removal. This reclamation level applies to long-term reclamation areas such as wire pulling/tensioning sites, construction yards, and laydown areas located on federal lands. These areas require the maximum level of reclamation actions including soil and plant salvage, ongoing weed control, topsoil replacement, monitoring transect selection, earthwork, reseeding, replacement of soil and mulch, transplant salvage, signage, supplemental mulch, and post-construction monitoring (more details in Section 5).

Table L-1-4 provides the relationship between the disturbance types, disturbance durations, and RLs.

TABLE L-1-4 RECLAMATION LEVELS – DISTURBANCES*

Disturbance Type	Disturbance Duration	
	Permanent	Temporary
No New Disturbance	RL1	-
Drive and Crush	-	RL2
Clear and Cut	-	RL 3
Grade	RL 4	RL 5

*Table derived from EC Source 2017a.

Table L-1-5 demonstrates how the relationships identified in Table L-1-4 are applied to construction features.

TABLE L-1-5 RECLAMATION LEVELS – CONSTRUCTION AND DISTURBANCE[1]

Construction Feature	Disturbance Type	Disturbance Duration		Reclamation Level
		Permanent	Temporary	
Structure sites (base area permanent)	Drive and crush		X	RL2
	Clear and cut		X	RL3
	Grade	X	X	RL5
Wire pulling and tensioning sites[2]; laydown yards; fly yards	Drive and crush		X	RL2
	Clear and cut		X	RL3
	Grade		X	RL5
SCS and Site-Distribution Line; Guyed-V structures	Grade	X		RL4
Existing paved roads, access roads (no improvements)	No new disturbance	X		RL1
Existing access roads (with improvements)	Grade	X		RL4
New access road	Drive and crush		X	RL2
	Clear and cut		X	RL3
	Grade	X	X	RL4/RL5

[1]Table derived from EC Source 2017a.
[2] Wire pulling and tensioning sites within Copper Bottom Pass and Plomosa Mountains will require grading; possibly temporary disturbance.

5 Description of Reclamation Actions

Reclamation actions are physical treatments and activities that will occur throughout each phase of the Project, specified for each reclamation area. They are specific to the RLs

previously discussed and illustrated below in Table L-1-6. These actions will facilitate resource protection during construction, recovery for areas temporarily disturbed by Project construction and promote the re-establishment of native vegetation that is similar in species composition cover and diversity to pre-construction condition.

All reclamation actions described in this Plan are consistent with the relevant mitigation measures defined in Table L-1-1 and Table L-1-2 and will be updated, as necessary, upon finalization of the Final POD. Table L-1-6 illustrates appropriate reclamation actions and RLs for each phase of Project construction (pre-construction, construction, and post-construction). Locations of the reclamation areas, facility features, disturbance types, and vegetation communities will be identified in the Project Layout Maps (Appendix A of the POD).

Specifically, Table L-1-6 is a discernment tool for RLs presented in Table L-1-5 as they occur in the reclamation area. If a project variance is required due to unforeseen environmental or engineering constraints, Table L-1-6 provides guidance to determine which reclamation actions should be applied and where modifications may be required. As described below, pre-construction actions are those that occur before the construction of the Project is initiated. Their purpose is to preserve resources or features of interest and include activities associated with ROW preparation for reclamation and pre-construction activities. Post-construction actions concentrate on activities scheduled after Project construction has been completed, such as reclamation and maintenance activities.

TABLE L-1-6 RECLAMATION LEVELS AND ACTIONS[1]

Reclamation Actions	RL1	RL2	RL3	RL4	RL5
Pre-construction					
Noxious Weed Abatement Implementation	X	X	X	X	X
Preserve in Place		X	X		X
Plant Salvage		X	X		X
Monitoring Transect Selection		X	X		X
Topsoil Segregation					X
Post-construction					
Earthworks		X	X	X	X
Topsoil Replacement		X			X
Seeding		X	X		X
Alternative Seeding		X	X		X
Transplant Salvage			X		X
Supplemental Mulch			X		X
Off-highway Vehicle Deterrent	X	X	X	X	X
Signage	X	X	X	X	X
Monitoring	X	X	X	X	X

[1] Table derived from EC Source 2017a.

[2] RL – Reclamation Level.

5.1 ROW Preparation and Pre-construction Actions

ROW preparation consists of installing flagging to demarcate the ROW boundaries, sensitive areas, access road limits, and construction work areas. Pre-construction plant surveys and ROW assessments provide baseline information to gauge reclamation success (see Vegetation Management Plan; Appendix F-7 of the POD). This also helps increase focus on protecting sensitive areas and resources; specifically, by recording sensitive plants to preserve in place, identifying areas infested by noxious weeds, and documenting of potential storage areas for soil and organic materials (i.e., dead plants, rocks). In addition, site monitoring will also be established, as described in Section 7 of this Plan.

Project construction and disturbance shall commence after all ROW preparation and pre-construction actions have been completed. Pre-construction action for reclamation purposes are defined in detail below and organized by their sequence of implementation. Note that some actions may be concurrent.

5.1.1 Noxious Weed Abatement Implementation

Guidelines are provided in the Noxious Weed Management Plan (Section 5 within Appendix F-4 of the POD), to implement noxious weed treatments where they are present along the Project ROW as well as addressing the preventative measures to control the spread of noxious weeds during construction (see APM-BIO-12 in Table L-1-1). These actions are key in minimizing impacts to sensitive plants. Once the pre-construction control measures have been implemented, subsequent actions for ROW preparation may proceed.

5.1.2 Vegetation Inventory

As stated in APM/BMP-BIO-15 and APM-BIO-26 in Table L-1-1 and MM VEG-CEQA-1, vegetation inventory will be conducted by the Construction Contractor(s) or Reclamation Subcontractor (see Vegetation Management Plan; Appendix F-7 of the POD). The focus of inventory includes cacti and succulent specimens suitable for “preserve in place” or “plant salvage” (see Succulent Management Plan; Section 15 within Appendix F-7 of the POD).

5.1.3 Preserve in Place

This treatment includes the preservation of existing vegetation to reduce visual impacts and/or when mature or sensitive plant specimens are present to enhance habitat recovery (see aesthetics [AES] APM/BMP-AES-02). This preservation of specimens may be requested by the BLM as well as recommended by the Construction Contractor(s) and/or Reclamation Subcontractor on a case-by-case basis.

Eligible specimens may include mature trees, sagebrush, succulents, and/or sensitive species. Diverse vegetation groupings would provide seed and a microclimate for future seedling germination. Flagging or fencing of eligible specimens should be completed prior to ground disturbance. The Construction Contractor(s) shall ensure any Project activity will not disturb the specimens.

5.1.4 Plant Salvage

In accordance with Table L-1-6 and required in BMP-BIO-41 and BMP-BIO-43, succulent plants may be considered for salvage if they will potentially be impacted by construction activities and are in a healthy condition as determined by the Reclamation Subcontractor and/or Environmental Compliance Manager (ECM).

The Vegetation Management Plan and Succulent Management Plan (Appendix F-7 of the POD) will identify succulent species, appropriate plant sizes for salvaging, specialized transport techniques of salvaged plants, storage, maintenance, and replanting. This plan shall be approved by the BLM prior to site disturbance.

The Construction Contractor(s) shall appropriately flag eligible plants for salvage. A list describing quantity and species of plants that were salvaged will be provided by the Construction Contractor(s) or the Reclamation Subcontractor to the BLM upon completion of salvage activities. The Construction Contractor(s) or Reclamation Subcontractor will transplant salvaged plants out of harm's way to designated areas, approved by the ECM.

Plants salvaged from permanent disturbance locations are only to be moved once and replanted in their final location. Studies in Arizona have shown moving salvaged plants multiple times can lead to lower survivability and undue stress on the individuals (Arizona Department of Transportation Research Center 2012; Arizona Public Service Electric Company [APS] 2017). Therefore, the "once-move" technique should be evaluated as a better suited option in lieu of nurseries.

5.1.5 Monitoring Transect Selection

As discussed below in Section 8, preliminary site monitoring locations shall be established along the ROW, based on Project engineering data provided during pre-construction surveys (see Vegetation Management Plan; Appendix F-7 of the POD). Sites shall be selected for the reclamation areas and vegetation communities traversed by the Project. The number of sites will be provided to the BLM. Once monitoring site locations are finalized, photographs shall be taken prior to any construction-related disturbance.

5.1.6 Topsoil Segregation

Required under APM/BMP-BIO-15, BMP-SOIL-01, and MM VEG-CEQA-1, this treatment includes the separation and setting aside of topsoil containing organic material and the seed-base of plants for post-construction replacement. In addition, the Construction Contractor(s) is to conduct topsoil salvage and include all rocks and vegetation as mulch. The depth of topsoil separation is dependent on the soil type where the reclamation activity occurs.

This topsoil should be labeled clearly and securely to protect inadvertent use as fill. Topsoil shall never be mixed with subsoil and separation from subsoils shall be maintained. When stockpiled, topsoil shall be protected from erosion, through the application of tackifiers, water, the establishment of a cover crop, tarp covers weighted down, or other methods. Disruption of stockpile topsoil shall be kept to a minimum.

5.2 Post-Construction Actions

Post-construction reclamation actions occur after the Project has been completed. These treatments focus on stabilizing permanent use areas and reclaiming temporary areas for re-establishment of native vegetation. Reclamation activities would commence following the completion of construction activities in an area. Post-construction reclamation actions are defined below and are organized by their sequence of implementation.

5.2.1 Earthworks

These activities may include recontouring, soil decompaction, and the application of appropriate soil erosion preventative measures. Earthmoving equipment replaces the removed material as close to the pre-construction contour as possible to restore the visual quality and provide stability to the slope (see APM/BMP-AES-02 in Table L-1-1). Soil decompaction may include ripping or scarifying to a depth below the root zone to promote water infiltration and root penetration (see BMP-SOIL-01 and MM VEG-CEQA-1). Erosion control measures such as water bars may be installed at the discretion of the Construction Contractor(s) and/or ECM. As indicated within Section 4.14.2 of the POD, all permanent travel surfaces will be left with an in-slope to cut bank, and water bars as necessary to reduce long-term erosion on road surfaces. Berms will be rounded or compacted to reduce visual contrast and will remain in place for safety purposes on slopes while allowing wildlife to safely escape road beds.

Recontouring also includes backfilling excavated holes and trenches during construction activities so that the natural terrain contours are maintained to the extent practicable. The Construction Contractor(s) will evenly distribute excess subsoil from excavated or graded areas (around transmission structure bases) over disturbed areas, to be moistened and compacted to a relative average density comparable to undisturbed adjacent material before re-spreading topsoil. A BLM designated representative will review and approve soil reclamation treatments (see BMP-SOIL-02). Subsoils will not be spread outside flagged construction areas and will be restricted to areas of permanent disturbance, if possible. Excessive subsoils that cannot be reasonably spread (i.e., those that would substantially change the grade of recontouring compared to adjacent conditions, or subsoils with an excessive depth that may impair ROW rehabilitation and reclamation) will be removed to an approved disposal site.

Where decompaction is required, the surface will be ripped or scarified to a depth of six inches as appropriate (e.g., not applicable to rock faces, severe slopes, or cliff areas), and will retain a buffer from existing vegetation or plants designated as “preserve in place.” Depth and area of compaction relief will depend on site-specific conditions and BLM would review and approve, as appropriate, the scarification type and location (see BMP-SOIL-01). Cross-ripping is preferable, and care should be taken to preventing inversion of the soil layers and preserve any vegetation in place. Deep sandy soils do not need to be decompacted and will not be ripped. Noxious Weed Abatement Implementation actions are included in post-construction monitoring and treatment, as necessary.

5.2.2 Topsoil Replacement

Salvaged topsoil will be replaced and dispersed evenly over the surface of disturbed sites. The purpose of this practice is to prevent mixing fertile, shallow soils with deeper infertile soils that may be less productive in the re-establishment of habitats due to rock, gravel, sand, calcareous layers, salinity or other chemical components that would adversely affect

the desired vegetation. The site will be left adequately rough after surface soil placement to provide micro sites for seed germination and to prevent significant movement of soil by seasonal weather events (wind or rain). In addition, further erosion control and soil stabilization methods (i.e., hydromulch) may be required to minimize soil movement, particularly for heavily sloped areas or for fine-textured soils. Surface soil will not be handled excessively during windy conditions.

5.2.3 Seeding

As stated in VEG-CEQA-1, reseeding involves planting new seed of desired plant species in affected areas. Federal land management agencies will approve the appropriate seed mix of species best suited to each reseeding site. A BLM or agency designated botanist or Authorized Officer will approve the seed mixes, seeding method, amendments, and timing. Further descriptions on preferred methods and plant palettes is found in the Vegetation Management Plan (Appendix F-7 of the POD).

The federal land-management agencies will be open to suggestions for seed mix revision, but they must approve any changes suggested by the Construction Contractor(s). Seed mixes will be based on vegetation communities described in Section 3 – Overview of Existing Environments and site-specific vegetation conditions identified in the field by the Construction Contractor(s) or Reclamation Subcontractor and approved by a BLM Authorized Officer. Reseeding shall be conducted at the first appropriate time after completion of construction (required for air quality, see BMP-AQ-01 in Table L-1-1).

5.2.4 Alternative Seeding

Within the Arizona portion of the Project, alternative seeding is primarily administered for ground cover in disturbed or weed infested areas by seeding of annual grasses and/or forbs. Annuals provide short-term soil cover, stabilization and a source of organic litter until other vegetation can become established (required for air quality BMP, see BMP-AQ-01 in Table L-1-1). Standard or priority reclamation areas may be treated with this reclamation action to manage noxious weed infestations. The annual grasses are usually sterile rye or oats since the regeneration of non-natives is not desirable. Similar to regular seeding, alternative seed mix compositions and methods of dispersing seeds will be determined through coordination with a BLM representative. See also the Vegetation Management Plan (Appendix F-7 of the POD).

5.2.5 Transplant Salvage

In coordination with a qualified BLM specialist, succulent plants, such as cacti, yucca, and agave species will be replanted in the same general location (as much as possible) and with the proper compass orientation as recorded prior to initial removal (as stated in BMP-BIO-41 in Table L-1-1). Plants transplanted from permanent use areas will be relocated to areas adjacent to the ROW, as close as possible to original conditions and similarly oriented. All salvaged plant material will be replanted in natural patterns. Saguaros (*Carnegiea gigantea*) and large yucca species will be carefully removed from the ground, taking care to not damage stems, roots or the base of the plant. Yuccas will be re-planted in groups of three or more for a natural effect. Each transplant will be filled with water and allowed to drain once.

Salvaged plants may require the installation of temporary protective measures to minimize herbivory and/or disturbance from off-highway vehicle users. Prior to removal of saguaros,

BLM requires a qualified biologist to inspect flagged saguaros for nests to avoid impacts to migratory birds during the nesting season (February 15 through August 1). The plants will be adequately maintained for one full year to ensure protective measures are intact. If salvaged plants are in an area susceptible to off-highway vehicle access, the closure of access roads may be recommended in specific areas, as approved by the BLM.

Salvaged succulents may be strategically placed or concentrated in certain areas to deter access. A combination of plants, snags or rocks may be used in these areas, where appropriate, as directed by the BLM. Transplantation and maintenance of plant material will be performed in accordance with the survival rates and success criteria described below in Section 8. See the Succulent Management Plan and Vegetation Management Plan for further descriptions on plant and succulent salvage as well as requirements for saguaros (both plans within Appendix F-7 of the POD).

5.2.6 Supplemental Mulch

Mulch usually consists of shredded plant material (i.e., hydroseeding, or similarly bonded fiber matrix mulch), but also includes wood fiber, paper mulch or biodegradable erosion matting. Due to straw mulch not being conducive to desert conditions (significantly slow biodegradation), hydroseeding, wood fiber, use of tackifiers, or erosion blankets would be the most favorable option. Hydroseeding is also a viable seeding method.

The quantity of mulch to be used will be recommended based on site conditions and will be installed according to the manufacturer's specifications. Alternative mulches will be certified weed-free as specified in the Noxious and Invasive Weed Management Plan (Section 18 within Appendix F-7 of the POD).

5.2.7 Off-highway Vehicle Deterrents

Operation of off-highway vehicles can cause physical damage to stabilization structures and soils as well as mortality to plants. Access by such vehicles will be limited in areas of reclamation. Measures to control off-highway vehicles and other unauthorized vehicle use of the ROW will be determined in coordination with the BLM at the appropriate time.

Specific areas of potential access to the ROW by off-highway vehicles will be identified and measures to minimize and discourage access will be developed as appropriate. These measures may include the installation of signs, fences with latching/locking gates, selectively placed boulders and salvage transplants, and/or mulch of heavy woody material.

When instances of unmanaged off-highway vehicle traffic occur, they will be accurately documented in a timely manner and provided to the BLM. Development of off-highway vehicle deterrents will be determined on a case-by-case basis based on BLM requirements and Construction Contractor(s) recommendations.

5.2.8 Signage

Reclamation areas will require informational signs pertaining to reclamation efforts in order to prevent further disturbance by the public. DCRT will install and provide notification of sign locations to the BLM, following completion of post-construction reclamation actions and prior to the initiation of reclamation monitoring.

5.2.9 Reclamation Monitoring

As stated in MM VEG-CEQA-1, reclamation monitoring will be conducted prior to construction and continue through post-construction phases of the Project – see Section 6. Evaluation of reclamation success will be based on criteria as described in Section 6.3. See also the Vegetation Management Plan (Appendix F-7 of the POD).

5.3 Modifications and Field Changes

Adjustments to RLs or actions by the Construction Contractor(s) may be necessary if the Project conditions change. However, any changes to these RLs and the associated reclamation actions will be reviewed and approved by the BLM and/or respective federal land-management agency (i.e., Bureau of Reclamation, Department of Defense, USFWS). Specific guidance on coordination with agencies in the process of implementation of reclamation actions and any associated adjustments are specified in the Environmental Compliance Management Plan (Appendix F-1 of the POD).

This Plan is intended to provide flexibility with respect to construction and unknown constraints that may be encountered in the field. Necessary changes to the original disturbance level or duration will be documented by the Construction Contractor(s) and RLs will be reassessed using Tables L-1-4 and L-1-5 to ensure that appropriate reclamation actions are implemented.

6 Monitoring

In accordance with APM/BMP-BIO-15, MM VEG-CEQA-1, and the Vegetation Management Plan (Appendix F-7 of the POD), post-construction monitoring is required to evaluate reclamation success of restored areas associated with the construction of Project facilities. This section of the Plan will accomplish the following:

1. Describe the purpose of the monitoring process.
2. Define the reclamation monitoring practices to be implemented.
3. Present reclamation goals and success standards.
4. Discuss adaptive management measures and site release from monitoring.

As discussed previously, DCRT, Construction Contractor, and/or Reclamation Subcontractor will be responsible for monitoring reclamation efforts for the Project. Per MM VEG-CEQA-1, reclamation monitoring efforts will be conducted by a qualified biologist that is knowledgeable in vegetation management and restoration specific to the vegetation communities within and adjacent to the Project. Reclamation success standards will be used by the BLM to determine if the implemented reclamation actions have adequately achieved the goals and objectives outlined in this Plan with consideration for the local site conditions. The monitoring practices include standard techniques for monitoring sites, data collection, and the measures used in calculating reclamation success.

Specific monitoring requirements, including the data analysis protocol, will be developed by the Construction Contractor and/or the Reclamation Subcontractor in cooperation with the BLM. This will allow the BLM to make more accurate conclusions pertaining to reclamation

success based on site conditions, such as biotic community and climatic conditions once construction has been completed. Adaptive management may be necessary to determine appropriate remedial actions for sites that have not demonstrated a trend toward reclamation success.

Implementation of remedial actions will be based on the monitoring data and an annual report will be submitted for up to five years following completion of construction. After five years of post-construction monitoring, a final report will be submitted to the BLM summarizing monitoring data, observations and the overall trend toward reclamation. Once the report is accepted by the BLM and the reclamation goals have been deemed achieved, DCRT will be released from further reclamation and monitoring.

6.1 Monitoring Methodology

All monitoring sites will be delineated during pre-construction activities and will include the collection of baseline data for subsequent post-construction monitoring. Post-construction monitoring and data collection will be conducted during spring and/or fall, after construction and reclamation actions are complete. After each monitoring effort, a summary of monitoring information will be provided to the BLM for review and discussion of reclamation conditions. As currently anticipated, construction activities will result in varying disturbance levels that will require two types of monitoring:

- General Route Monitoring – general field reconnaissance (windshield survey) and reporting of conditions in treated areas along the entire length of the Project ROW.
- Site Monitoring – detailed field reconnaissance and reporting at designated reclamation monitoring sites and control areas along the Project ROW.

The Construction Contractor(s) or Reclamation Subcontractor will consult with the BLM in order to adapt these protocols, as needed, and meet localized conditions and concerns. Details of the monitoring types and how these practices will be assigned to the areas affected by the Project is presented below.

6.1.1 Route Monitoring

Route monitoring is a general field review of the entire Project ROW, where accessible by vehicle, to be conducted in conjunction with site monitoring. When an area is not accessible by vehicle, the surveyor can access it on foot or using off-highway vehicles such as a quad or all-terrain vehicle. This review will document the overall recovery conditions associated with the construction of the transmission line. Items reviewed may include but are not limited to: the application of preserved and/or salvaged plants; successful performance of the noxious weed management plan; and/or the performance of erosion prevention techniques applied to a site.

Upon observation of unauthorized access, conditions regarding disturbance it caused along the ROW should be documented. Where reclamation signage and/or deterrents have been removed or damaged, the BLM should be notified so remedial actions can take place. Potential remediation locations should be documented by the transmission line structure number or global positioning system coordinates.

6.1.2 Site Monitoring

Preliminary site monitoring locations (transects) will be established along the ROW where necessary prior to construction. Locations will take into consideration resource data collected during pre-construction surveys and Project engineering data provided in the Project's Layout Maps (Appendix A of the POD). Once the site monitoring locations have been identified, the results will be provided to the BLM to determine the quantity of site monitoring locations required for the Project. Subsequently, BLM will approve the final determination of transect site locations.

Cooperation with the Construction Contractor(s) and/or Reclamation Subcontractor may be necessary immediately prior to construction if changes to the construction work area(s) affect the location of the preliminary transect monitoring site. Once transect locations are finalized, photographs will be taken: (1) prior to any construction-related disturbance, (2) when initial reclamation efforts have been completed, and (3) during each monitoring visit.

Paired vegetation transects will be installed for each transect monitoring site and documented as treatment or control for quantitative monitoring. In general, the treatment transect will be placed within an affected area (normally within the immediate ROW), and the control transect will be placed immediately adjacent to the ROW, on undisturbed ground. Size and quantity of each transect will be based on the final footprint of disturbed areas, in cooperation with the BLM. For consistency, transect pairs should be sized and oriented in a similar manner; especially if terrain or construction conditions require deviation. In addition, the location of transect sites should avoid areas susceptible to future human disturbance (e.g. off-highway vehicle, transmission line maintenance, or planned future utilities), where possible, to preserve the integrity of each transect for the duration of the monitoring period.

Following completion of construction, plots will be examined on a quarterly basis during the first year and biannually during years two and three. Parameters that will be used to measure reclamation success are presented within Section 6.3 of this Plan but may be modified in coordination with BLM and based on the Construction Contractor and/or Reclamation Subcontractor retained to collect the data. During site monitoring, an assessment of noxious and invasive weed establishment will be completed, along with subsequent recommendation for removal or treatment, if necessary. However, it should be noted that monitoring for known noxious weeds locations may occur independently from reclamation monitoring as outlined in the Noxious Weed Management Plan (Section 5 within Appendix F-7 of the POD).

Erosion control will also be considered in reclamation monitoring as a key indicator to measure the trend toward reclamation success (where applicable), and remedial actions may be taken in conjunction with monitoring efforts to control erosion, as recommended by the BLM (refer to BMP-AQ-01 in Table L-1-1). These remedial actions will also follow stipulations in the Fugitive Dust Control Plan and Construction Emissions Mitigation Plan (Appendix H-1 of the POD).

6.2 Monitoring Requirements

Construction features, their disturbance type, and the expected duration associated with these features are addressed by monitoring reclamation according to the RLs and their correspondence with the construction features. A summary of reclamation monitoring requirements for these construction components is shown in Table L-1-7**.**

TABLE L-1-7 RECLAMATION AND MONITORING COMPONENTS[1]

Construction Feature	Disturbance Type	Disturbance Duration		Reclamation Level	Restoration Monitoring
		Permanent	Temporary		
Structure work area	Drive and crush		X	RL2	Route
	Clear and cut		X	RL3	Route
	Grade	X	X	RL5	Route, Site[2]
Wire pulling and tensioning sites; laydown yards	Drive and crush		X	RL2	Route
	Clear and cut		X	RL3	Route
Structure base area	Grade	X		RL4	None
Existing paved roads, access roads (no improvements)	No new disturbance	X		RL1	None
Existing access roads (with improvements)	Grade	X		RL4	None
New access road	Drive and crush		X	RL2	Route
	Clear and cut		X	RL3	Route
	Grade	X	X	RL4/RL5	None/Route, Site[2]

[1] Table derived from EC Source 2017a.
[2] Site monitoring will be conducted for priority reclamation areas where RL5 actions have been implemented.

6.3 Reclamation Goals and Success Standards

Reclamation success is defined by the progression of vegetation and soils towards pre-construction disturbance conditions, to the extent practicable. The primary goal of revegetation will be achievement of at least 70 percent of the pre-construction percent coverage within a 5-year reclamation monitoring period or as further specified by the BLM. Nonetheless, success is dependent on environmental conditions and proper implementation of reclamation actions to avoid future disturbance and protect the natural recovery of vegetation communities.

Reclamation will be pursued immediately on disturbed lands where future operations and maintenance are not needed. The four categories of reclamation success standards include surface and soil stabilization, control sites, revegetation, and landscape reconstruction. These success standards apply on BLM lands, unless additional federally-managed lands are specified. Particular reclamation success standards on private lands and state lands may vary and will be developed in coordination with private landowners and/or the State Land Board, as appropriate.

6.3.1 Surface and Soil Stabilization Standards

Contaminated soils, hazardous materials, or any other undesirable material on a site will be isolated and removed to protect the landscape and reclamation efforts. To conserve soils and minimize erosion or sedimentation, recontouring will try to match the surface of the site according to the natural landscape around the site. Water management techniques will be implemented to establish stable slopes and drainage features (also protecting surface water and groundwater resources). The soil surface must be stable while obtaining adequate surface roughness to reduce runoff and capture rainfall (SWCA 2011).

6.3.2 Control Site Standards

Control sites will exhibit the target plant community that is located adjacent to, or near, the Project-affected treatment sites. Control sites will be established within areas that were not disturbed by the Project and will allow the monitor to objectively assess the progression of reclamation success of the site monitoring locations.

If the final monitoring report provides the evidence that typical environmental conditions are being met, reclamation actions properly implemented, and disturbances are being replaced by vegetation similar to surrounding areas, the Plan is trending towards its goals of success. Target percentages (to be determined by the BLM) of native species cover (amount vegetation canopy per unit) and density (number of plant species per unit) for reclamation success will be evaluated relative to control conditions. Percent cover and density will be based on the quantitative data collected from the control plot for each site monitoring location.

6.3.3 Revegetation Standards

The vegetation will stabilize the sites and support the planned post-disturbance land use, provide for natural plant community succession and development, be self-perpetuating, and noxious weeds will be control in accordance to Appendix 2B of the POD. Revegetation will be deemed successful after the monitoring time frame is complete or when the following revegetation criteria are met (SWCA 2011; EC Source 2017b):

- A self-sustaining, and approved native vegetative stand is established on the site. Vegetation density will be sufficient to control soil erosion as well as non-native plant invasion and re-establish wildlife habitat.

- Seed mixtures will be developed based on site-specific characteristics following BLM guidance. If the first seeding does not exhibit signs of successful stand establishment by the next seeding window, seeding methods will be applied once again. If no evidence of seedlings or seed take is shown, methods and procedures will be re-evaluated, and proposed actions submitted in the annual report. If evidence of growth is occurring after a seeding session, only areas with little to no growth evidence will be treated within the following seeding season. If the same treated areas are not presenting signs of success, methods and procedures will be evaluated with the BLM.

- Diversity of species will be sufficient and established on sites within public lands. No single species within seed mixes will account for more than 30 percent of total vegetative composition on public lands unless it is reflected in adjacent undisturbed reference sites.

- After a vegetative stand is established, individual pad site regrowth percentages must achieve at least 70 percent cover of the adjacent control site percentages within a 5-year reclamation monitoring period or as further specified by the BLM. Desired cover percentages will be based on basal coverage; where the stem meets the ground. Cover percentages will be calculated using the point-intercept method (see below) at each paired control and treatment transect/site monitoring location to collate the ecological growth for each year. No sites can be submitted for release prior to three growth seasons starting from the first seeding session.

- Part of successful revegetation includes maintaining native plant communities with minimal weed occurrences. Reclamation species should be outcompeting weed species within a few years of reclamation initiation; however, total percent cover of these species should be commensurate with adjacent reference sites. The BLM has zero tolerance for state-listed noxious weed species and all noxious weeds will be controlled.

Initial point-intercept data will be collected for each site monitoring location by randomly establishing linear transects within the fully reclaimed area of the site. Transect size and quantity will be determined based on the final footprint of disturbed areas and structure work areas anticipated to be temporarily disturbed, in cooperation with BLM. Study plots must be placed only in areas that were seeded. Transects will be plotted by Universal Transverse Mercator coordinates at the start and end point of each line will be documented in a Project spreadsheet in order to be used for future data collections. The same study plots will be used for each site monitoring season to maintain a baseline of consistency and fairness to all parties. Place holders or “hubs” may be used to mark the start/end location of each plot in the field. No place holder will be used that may pose a risk to plant growth, wildlife, or the public (EC Source 2017b).

Each transect will contain a specific number of points (i.e., one point per 10 centimeters or per foot). Each point that hits a desired species will be tallied, and overall species intercept points will be divided by the overall number of points for that plot. The two plots will then be averaged together for the overall cover percentage of that site. Averaging will be fulfilled by adding the two percentages together and dividing by two. Site percentage must reach 70 percent of control site cover percentages. For example, if a control site percentage yields 80 percent cover, then a 56 percent cover will need to be achieved for that pad site to satisfy release criteria. Field data sheets pertaining to cover percentage calculations will be kept and provided within the annual report (EC Source 2017b).

6.3.4 Landscape Reconstruction Standards

Landscape reconstruction will be deemed successful when the original landform has been restored or approximated for disturbed areas that are not required for regular operations and maintenance activities. For landscape reconstruction to be deemed successful, the reclaimed landscape will have the characteristics that approximate the visual quality of adjacent areas with regard to location, scale, contour, color, and orientation of major landscape features and will support existing and future land uses. Erosional features will be less than or equal to the surrounding area (SWCA 2011).

6.4 Data Collection

Reclamation monitoring will include both quantitative (numerical) and qualitative (descriptive) data collection at the designated monitoring sites approved by the BLM. Quantitative monitoring will document the trend and degree of change at each site while qualitative monitoring will detect the initiation of change and changes resulting from environmental conditions, such as precipitation, allowing for a record of change over time.

Observations of vegetation and soil conditions will be used as the main indicator of reclamation recovery and when assessing progress toward functionality. Measurements and descriptions will be accompanied by photographs that will be used to document the status of recovery at all monitoring sites.

For monitoring consistency, a protocol for photo documentation, sampling points, and standardized data-recording forms will be developed by the Construction Contractor(s) and/or Reclamation Subcontractor. Photographic reference points will be the primary method of qualitative monitoring; however, qualitative and quantitative information will be gathered during the general route monitoring and site monitoring for the Project. Qualitative and quantitative data are described in detail below.

6.4.1 Qualitative Data

Qualitative monitoring provides a tangible method to document site conditions and ensure that sites are progressing toward the success standard established by the BLM. Qualitative monitoring will occur for both routing and site monitoring. Per MM VEG-CEQA-1, qualitative monitoring will be performed monthly in all vegetation management areas for the first year following the completion of the Project and subsequent vegetation management implementations. Thereafter, qualitative monitoring will be conducted on a quarterly basis, until final completion and approval by the BLM. Unpredictable weather patterns may affect reclamation success within the BLM-approved monitoring time frame. Qualitative evaluations conducted at predetermined monitoring sites will serve as a representative indicator for similarly disturbed areas in the same vegetation community. In addition, they will also serve as a baseline when conducting overall route surveys for the remainder of the treated areas within that vegetation community.

Photographic documentation of during data reconnaissance will be taken for accuracy. Photographs of the control sites and structure pad site study areas will be taken with the bi-annual inspections and must contain temporary placards or signs indicating the site location (i.e., “structure 13-2”). Photographs will be included for structure pad sites requesting release by the Construction Contractor(s) or Reclamation Subcontractor.

Any non-Project related disturbances that affect the reclamation success shall be recorded and photographed during route monitoring. In some instances, conflicting land management, grazing habitats, unmanaged off-highway vehicle traffic, severe weather events, or overlapping construction of other projects may inhibit reclamation success in affected areas. If reclamation failure is determined because of these external influences, DCRT will not be held responsible for continued reclamation activity and associated monitoring of these areas.

Recovery from construction disturbance activities (e.g., clearing and grading) within semi-arid and arid climatic zones typically require several years; thus, the monitoring plan will assess the trend toward reclamation success standards as outlined in Section 8.3. Trends include the following:

- Seedbank recruitment - Presence and condition of certain site characteristics that encourage recruitment of native vegetation, indicating important functional processes are in place that initiate regeneration (i.e., pollination and seed dispersal). Site characteristics include, but are not limited to, the presence of: seedlings, flowering plants, insects, birds, and/or bats.

- Stabilization of soils – Lack of erosion is typically evidence that soils have been adequately stabilized.

- Avoidance of species competition – Noxious weeds could potentially compete with native perennial species; relatively high abundances of noxious weeds can have negative effects on site conditions.

- Animal presence - Evidence of animal use indicates habitat conditions have been restored, however, grazing by domestic animals can negatively affect reclamation success if unmanaged. Areas that received heavy use by domestic livestock will be recorded with photographs. Additionally, areas that receive heavy use by domestic livestock over repeated years will be considered to have met reclamation standards.

- Patterns of vegetation - Patches of established vegetation can be indicative of successful site conditions if they reflect patterns observed in surrounding (control) vegetation. Once recruitment conditions have been met, established vegetation is anticipated to contribute to the maintenance and functionality of the community to ensure continued success after monitoring has concluded.

6.4.2 Quantitative Data

Per MM VEG-CEQA-1, a qualified biologist will conduct quantitative monitoring annually for year one through five, or for subsequent years until the success standards has been met. The desirable vegetation cover will be numerically measured (percent of canopy cover per unit of area) on treatment sites identified as priority reclamation areas and approved by the BLM, during the second- and third-year growing seasons. In turn, the measurements will be compared to the control transect for each site to determine if there is evidence of a trend reclamation success. In terms of measurements, the MM VEG-CEQA-1 specifies the qualified biologist(s) will record data using a sampling method (series of one meter square quadrants within each vegetation management area) to measure the absolute and relative cover and density of each plant species.

In year two or three, the qualitative monitoring methods will be dependent on growth within the vegetation management and may deviate from the quadrat methodology to a method called the toe-point transects (sampling mark created using boot-notch during a 5-paced transect; Evans and Love 1957) or other method as instructed by the BLM. Data will include, but not be limited to: measuring native species growth performance, estimating native and non-native species coverage, seed mix germination, native species recruitment and reproduction, and species diversity. Based on these results, the designated biologist(s) will provide recommendations for maintenance, adaptive management, or remedial work efforts that may be needed to meet success standards. During subsequent years of quantitative assessments, vegetation will have had enough time to display establishment on the areas affected by the Project. In addition, the trends toward reclamation success and remedial actions will be identified, as necessary. By the final year of quantitative monitoring, it is anticipated that the effects of remedial actions or climatic events will be discernibly evident on treated sites.

Vegetation density monitoring (number of plants per unit of area) is sensitive to changes in the vegetation community caused by climate conditions and resource uses and shall document information on seedling emergence, survival, and mortality. The qualified biologist(s) will focus on dominant or indicator perennial species as determined by control-site observations of the adjacent plant community. Like vegetation cover, species density will be evaluated by comparing the total number of indicator species in the treatment site to that of the control site. Other plant species will be inventoried but densities will not be

evaluated. Density and cover data, along with other biometrics, will be logged on standard field data sheets developed by the Construction Contractor(s) and/or Reclamation Subcontractor with prior BLM approval.

6.4.3 Monitoring Reports

As stated in MM VEG-CEQA-1 for quarterly reporting, data collected for post-construction reclamation monitoring will be compiled within a Post-Construction Vegetation Management Quarterly Monitoring Progress Report developed by the Construction Contractor(s) and/or Reclamation Subcontractor for the first year for the reclamation monitoring. Reports will include the following:

- Summary of overall site status and remedial recommendations.
- Estimated species coverage and diversity.
- Health and overall stamina of plant species.
- Establishment of volunteer native species.
- Topographical/soils conditions.
- Problems or development of weed species.
- Usage of the site by wildlife, as feasible.
- Significant signs of drought stress.
- Recommended adaptive management measures deemed necessary to ensure compliance with specific success standards (see below), in the case where standards are not fulfilled.

In addition, and as stated in MM VEG-CEQA-1, an Annual Post-construction Vegetation Management Report will be completed for years one through five by the Construction Contractor(s) and/or Reclamation Subcontractor, providing the results of annual quantitative monitoring. Annual reporting will include, at a minimum, the following:

- Name, title, and company of all persons involved in restoration monitoring and report preparation.
- Maps or aerials showing vegetation management (i.e., restoration and invasive weed management areas), transect locations, and photos documentation with locations.
- Explanation of the methods used to perform vegetation management, including, but not limited to, the number of acres for restoration and/or areas treated for removal of non-native plants.
- Assessment of the treatment success.
- List of plant species and their coverage and diversity measured during yearly quantitative surveys.

- Compliance/non-compliance with required vegetation management success standards.
- Summary of species health and overall vigor.
- Establishment of volunteer native species.
- Hydrological and topographical conditions.
- Usage of the site by wildlife, as feasible.
- Presence and development of invasive weed species.
- Recommended adaptive management measures deemed necessary to ensure compliance with specific success standards (see below), in the case where standards are not fulfilled.

The Construction Contractor(s) and/or Reclamation Subcontractor will forward annual reports to BLM, CPUC, and CDFW at the end of each year following implementation of the reclamation monitoring, until the established success criteria have been met.

6.5 Adaptive Management and Site Release

The BLM requires that an adaptive management protocol is implemented as part of reclamation monitoring activities for the Project. The adaptive management actions allow frequent review and feedback on the progress of reclamation. Effective monitoring is an essential element of adaptive management because it provides reliable feedback on the effects of reclamation actions, resulting in early implementation of remedial actions.

Adaptive management actions may be recommended on a case-by-case basis where feasible, and as determined by the BLM, within the monitoring time frame. If adaptive measures become necessary, monitoring data will identify the deficient components of reclamation efforts such as native vegetation cover, soil compaction or lack of natural surface material. Examples of reclamation actions may include measures such as supplemental seeding, mulching and additional weed and/or erosion control measures. Recommendations could also include waiting prior to taking remedial action to determine if favorable germination/establishment conditions are affected.

There is a possibility that some sites will be incapable of progressing towards the established success standards. This may be due to conflicting land management, environmental limitation, or other conditions not associated with the Project. Some cases could include unmanaged off-highway vehicle access, grazing of domestic livestock, natural disasters, or construction from other projects. If BLM determines reclamation failure has been caused by similar types of conditions, neither DCRT nor any of its contractors or subcontractors will be held responsible for continued reclamation and monitoring of these sites.

All adaptive management actions will be subject to review and approval by the BLM. The Construction Contractor(s) and/or Reclamation Subcontractor hired to complete reclamation actions and monitoring and will use all reasonable methods to ensure that reclamation is progressing toward the success standards identified in Section 8.3 of this Plan. Once the final report documenting reclamation success has been completed, approved success

standards have been met, and are accepted by the BLM, DCRT will be released from further reclamation and monitoring.

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2B.11 VEGETATION MANAGEMENT PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Vegetation Management Plan

PROJECT NUMBER:
154320

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Vegetation Management Plan

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ACRONYMS AND ABBREVIATIONS

ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
ANPL	Arizona Native Plant Law
APM	Applicant Proposed Measure
APS	Arizona Public Service
AZDA	Arizona Department of Agriculture
BIO	Biology
BLM	Bureau of Land Management
BMP	Best Management Practices
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
CIC	Compliance Inspection Contractor
cm	centimeter
CMA	Conservation Management Actions
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Ranking
DCRT	Delaney Colorado River Transmission, LLC
DRECP	Desert Renewable Energy Conservation Plan
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
gal/min	gallons per minute
GPS	geographic positioning system
kV	kilovolt
LUPA	Land Use Plan Amendment
MM	Mitigation Measure
MVCD	Minimum Vegetation Clearance Distance
NERC	North American Electric Reliability Corporation
NRCS	Natural Resources Conservation Service
Plan	Vegetation Management Plan
POD	Plan of Development
Project	Ten West Link Transmission Project
Proponent	Delaney Colorado River Transmission, LLC
psi	pounds per square inch
ROD	Record of Decision
ROW	Right-of-way
SCE	Southern California Edison
Ten West Link	Ten West Link Transmission Project
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1 Introduction

The Ten West Link Transmission Line Project (Ten West Link or Project) proposed by Delaney Colorado River Transmission, Limited Liability Corporation (DCRT) would consist of a transmission line between the Delaney Substation in Maricopa County, Arizona and the Colorado River Substation in Riverside County, California. A detailed Project Description is provided in Section 3, below, and further described the Project's Plan of Development (POD).

This document outlines the establishment of a Vegetation Management Plan (Plan) that has been developed for the Project. The purpose of the Plan is to establish a procedure for maintaining right-of-way (ROW) conductor vegetation clearance, clearing of access roads, work areas, and associated Project facilities, protection of special status species, prevention of the introduction of noxious weeds, and to prevent vegetation-related outages associated with the Project. This Plan includes measures designed to reduce long-term impacts to visual resources.

This Plan further includes a Succulent Management section (Section 15), which describes the approaches for succulents throughout the Project area; a Special Status Plant Transplantation and Compensation section (Section 16), which sets forth the options for transplanting or compensating for impacts to special status plants; Rare Plant Linear ROW Protection for Harwood's Eriastrum (Section 17), which describes the protection measures to be implemented to minimize impacts to the Harwood's eriastrum; and a Noxious and Invasive Weed Management section (Section 18), which spells out the methods to be utilized to minimize the introduction or spreading of noxious and invasive weeds to or within the Project area.

The techniques and procedures to manage, monitor, mitigate, and restore native vegetation and habitat and are documented in Appendix L-1 Reclamation, Vegetation, and Monitoring Plan.

The route for the proposed transmission line Project has not yet been secured; once the route has been finalized any changes will be reflected in the final draft of this Plan.

2 Permits and Governing Documents

Portions of the Project will be governed by a Bureau of Land Management (BLM) ROW Grant and Record of Decision (ROD). Vegetation management activities must be conducted as regulated by these documents and as described within the Project, North American Electric Reliability Corporation (NERC) guidelines, Arizona Native Plant Law (ANPL), and California regulations associated with vegetation removal and plant salvage, where applicable, or as directed by the California Public Utilities Commission (CPUC) during the process to obtain a Certificate of Public Convenience and Necessity.

If, during the course of work, additional permitting requirements are identified as needed, DCRT will take measures to acquire these permits and incorporate them into this Plan. Additional permitting may include but is not limited to a Collectors Permit and Removal Permit from the Arizona Department of Agriculture (AZDA) for saguaro cactus relocation. On BLM lands, the contractor must get a shipping permit from BLM before transporting the plants. Associated fees from obtaining permits related to allowing for impacts (removal/relocation) of theses plant species will be paid by DCRT.

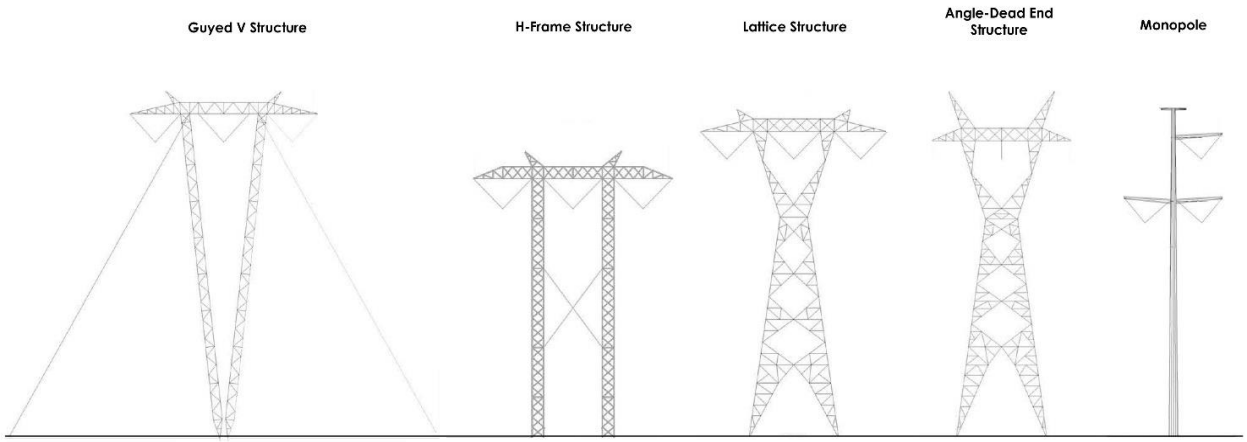
3 Project Location and Overview

The proposed Project consists of the construction of approximately 125 miles of a new single-circuit 500 kilovolt (kV) transmission line along with associated access roads. Approximately 103.4 miles of the line in will be in Maricopa and La Paz Counties, Arizona and 21.6 miles in Riverside County, California with 79.4 of those miles on BLM-administered federal lands. The new line will provide service between the Arizona Public Service (APS) Delaney Substation, located near Tonopah, Arizona, and the Southern California Edison (SCE) Colorado River Substation, located just southwest of Blythe, California. The Project ROW will be located within varying elevations from 100 feet elevation in desert and agricultural vegetation communities up to 4,000 feet in the mountain terrain. The proposed route will parallel existing linear utility corridors including transmission lines and natural gas pipelines.

The structures proposed for the Project will be comprised of different lattice tower configurations and monopoles as shown below in Figure F-7-1. Depending on the topography and span length (400 feet to 2,300 feet) the structures will vary in height from 72 feet to 195 feet. DCRT proposes to acquire a 200-foot-wide ROW for construction, operation, and maintenance of the 500 kV line.

Project maps further detailing the structure locations, access roads and sensitive areas will be located in the Appendix A of the Final POD.

FIGURE F-7-1 TEN WEST STRUCTURE TYPES



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4 Vegetation Overview

The predominant native vegetation communities include Sonora-Mojave-creosote-bush-white-bursage-desert-scrub and mixed-cacti-desert-scrub. Project vegetation communities are further described within POD Appendix L-1 – Reclamation, Vegetation and Monitoring Plan.

Preconstruction plant surveys will be completed by a biological monitor prior to construction activities on non-cultivated lands. These surveys will be conducted to establish a native percent background vegetation which will ultimately be utilized for restoration goals. Vegetation clearing for access roads and work areas will occur within the Project disturbance footprint; however, DCRT anticipates that the majority of Project clearing activities for conductor clearance will occur within the Copper Bottom Pass Area and in areas that have ironwood (*Olneya-tesota*), palo verde (*Parkinsonia* spp.) and honey mesquite (*Prosopis glandulosa*) species. Some tree clearing of 40-foot-tall salt cedar (*Tamarix ramosissima*) will also occur near the transmission line crossing of the Colorado River.

The Project area falls within two subdivisions of the Sonoran Desert: Lower Colorado River Valley and Arizona Uplands, represented by various plant associations and habitat types with vegetation that is tolerant of extremely high temperatures and drought. Tall growing vegetation that may require trimming, pruning, or removal may include saguaro cacti (*Cereus giganteus*), ironwood, and palo verde. This vegetation (if growing within the ROW below the conductor spans) has potential to come in contact with the line at certain heights and would need to be removed to maintain a safe clearance. Furthermore, this reduces the risk of power outages, fires, and other damage.

Other large desert species that may pose a safety hazard, but are eligible for salvage include saguaros, Joshua trees, yuccas, agave, and ocotillos. See Section 15 of this Plan for more information on saguaro cacti salvage.

Any vegetation removed that can be used in reclamation efforts (i.e., plant material or slash) will be maintained on site for use during reclamation. This plant material can be used as a windrow for habitat creation or scattered across this site after seeding has been completed.

DCRT will coordinate with all agencies and private landowners prior to any vegetation removal.

5 Vegetation Surveys

Since the Project spans two states (California and Arizona), the requirements for surveys prior to vegetation removal will be specific to that region and planning area, including the BLM. In Arizona, a plant inventory will be conducted prior to any vegetation removal or relocation activities to survey for plants protected under the ANPL as required by the AZDA. Vegetative surveys for plants in California will be in compliance with the Manual of California Vegetation, and the California Desert Conservation Area Plan.

The plant surveys will be conducted within the approved ROW, along the Project's access roads and all other associated disturbances for the Project. Surveys will be completed

during the appropriate time of year for noxious weeds, protected plants, and areas that are identified as habitat for special status species. No plant species currently listed or proposed for listing under the Endangered Species Act (ESA) are expected to be found within the Project ROW.

A qualified botanical monitor will conduct pre-construction surveys during the pre-construction phase of the Project. If plants, with any type of special status as indicated in this Plan, are discovered during these surveys all applicable mitigation measures will be implemented. Mitigation measures will be in compliance with ANPL, California regulations, and BLM requirements associated with vegetation removal and plant salvage, where applicable.

6 Environmental Protection Measures

All impacts would be minimized through implementation the Project's Applicant Proposed Measures (APM) and BLM-Required Best Management Practices (BMP). A monitor will be present during earth disturbing activities within habitat of special-status animal/plant species. Post construction surveys and monitoring for re-vegetation success will be completed once construction and initial reclamation has been completed.

The environmental protection measures that apply to the vegetation management plan include the following:

- APM/BMP BIO-01: Worker Environmental Awareness Program (WEAP)
- APM/BMP BIO-02: Biological Monitoring and Preconstruction Survey
- APM/BMP BIO-03: Approved Work Areas
- APM BIO-04: Environmentally Sensitive Areas and Fencing
- APM BIO-05: Additional Prohibitions
- APM BIO-10: Erosion and Dust Control
- APM/BMP BIO-11: Vegetation Management Plan
- APM BIO-12: Noxious and Invasive Species Control
- APM BIO-14: Minimizing Vegetation Clearing
- APM/BMP BIO-15: Reclamation and Restoration
- APM BIO-16: Treatment of Saguaro Cactus
- APM BIO-17: Limit Off-road Vehicle Travel
- BMP BIO-24: Sensitive Plant Surveys
- APM BIO-26: Arizona Protected Plant Inventory
- BMP BIO-31: Treatment of Harwood's Eriastrum
- BMP BIO-32: Seasonal Restriction Dates
- BMP BIO-37: Native Plant Collection Prohibition
- BMP BIO-38: Use of State of the Art Technology
- BMP BIO-41: Succulent Management

- BMP BIO-42: Dead and Downed Wood
- BMP BIO-43: Collection of Plant Material
- BMP BIO-46: Compensation for Loss of Desert Riparian Woodland
- BMP BIO-47: Riparian Functioning Condition
- BMP BIO-50: Engineering Controls
- BMP BIO-51: Conductor Clearance
- BMP BIO-52: California Riparian Habitat and Rare Plant Alliance Avoidance (California only)
- BMP BIO-53: Protection of Dune Vegetation (California only)
- BMP BIO-54: Protection of Sand Transport (California only)
- BMP BIO-55: Access within Focus and BLM special Status Species Suitable Habitat (California only)
- BMP VEG-01: Removal of Vegetation
- BMP VEG-02: Avoid Vegetation Removal
- BMP TT-08: Prohibit Cross-Country Vehicle Use Outside Designated Work Areas (California only)
- APM AES-01: Vegetation Removal and Grading

There are additional mitigation measures that are limited in scope to California as part of the California Environmental Quality Act (CEQA). These include:

- MM BIO-CEQA-4: Develop a Habitat Restoration, Mitigation, and Monitoring Plan
- MM BIO-CEQA-5: Develop a Special Status Plant Transplantation and Compensation Plan
- MM BIO-CEQA-12: Compensation for Impacts to Sensitive Vegetation Communities
- MM VEG-CEQA-1: Develop and Implement a Vegetation Management Plan
- MM VEG-CEQA-2: Conduct Pre-Construction Floristic Surveys
- MM VEG-CEQA-3: Conduct Focused Surveys for Harwood's Eriastrum
- MM VEG-CEQA-4: Compensation for Impacts to Special-Status Plant Species and Sensitive Communities

7 Safety

Safety is of upmost importance for all Project work activities. Federal and State Occupational Safety and Health Administration and American National Standard Institute safety requirements governing vegetation management work practices shall be followed at all times. Activities shall be conducted in a manner that minimizes both vegetation management crew and public safety risks. All employees involved in vegetation management work activities will have all necessary training in the use of any tools and/or equipment to be utilized. Training shall include proper use of personal protective equipment, proper operating techniques, and establishment of safe work areas appropriate to the work

being performed. In addition, a Fire Protection and Prevention Plan (Appendix J-2) has been prepared for the Project, which addresses items such as fire emergency procedures, fire suppression and prevention measures, and fire incident reporting.

8 Planned Vegetation Management Sequence

Vegetation management activities and estimated timeframes follow:

Pre-Construction Surveys	TBD
Salvage	TBD
Work Area and Access Road Clearing	TBD
ROW Clearing Between Spans	TBD
Final Grading, Cleanup, and Restoration	TBD
Seeding for Permanent Stabilization	TBD
Post-Construction Surveys	TBD
Monitoring	TBD
Reporting	TBD

9 Techniques and Methods

All vegetation management activities will be performed in compliance with NERC and Federal Energy Regulatory Commission (FERC) vegetation management specifications, relevant items from the BLM Manual 1740-2 Integrated Vegetation Management and IB-2012-097 and stipulation found within the Project's Final POD, ROD and ROW Grant. The documents referenced above cover policies and techniques to manage vegetation that has the potential to come in contact with the transmission line creating a fault or cascading effect. If there is a conflict between the POD, and the requirements of the land-manager/ landowner or NERC and FERC vegetation management requirements, DCRT will work with the appropriate parties to resolve the situation. A copy of BLM Manual 1740-2, IB-2012-097, and NERC Standard FAC-003-2 can be found in Attachment C – Agency Vegetation Management Regulatory Manuals. Additionally, the Project will comply with FERC Standards and the National Electrical Safety Code.

The majority of the clearing activities will need to be planned for the area in the ROW (200 feet wide) and more specifically the wire zone area. There are only a few spots where the Project might experience blowout outside of the 200-foot corridor. However, these are at spots with long spans, such as going up a large hill or across a canyon. At these locations, the conductors will be high up so vegetation management will not be a factor. The wire zone is a 139-foot-wide section of the ROW located directly under the wires and the border zones extends outward about approximately 31 feet on either side of the wire zone. The wire zone is required to be cleared of high vegetation to minimize the likelihood of a plant, shrubs, or tree, encountering the line. High-growing vegetation is permitted in the border zone, but

may be pruned if it begins to encroach on the wire zone. The wire zone and border zone may be adjusted, as appropriate, based on topography. Please reference Figure F-7-2 shown below, as adapted from the Draft Environmental Impact Statement (EIS) Appendix 7 Part 1 Figure 2.2-23a. DCRT will identify tall growing vegetation species within the wire zone anticipation species include, but are not limited to, saguaro cactus, ironwood, palo verde, cottonwood (*Populus* sp.), goodding willow (*Salix gooddingii*) and mesquite (*Prosopis* spp.).

The transmission line must maintain a clearance of 30 feet between the conductor sag and the ground. Please reference Figure F-7-3 shown below, as adapted from the Draft EIS Appendix 7 Part 1 Figure 2.2-9b. The Minimum Vegetation Clearance Distance (MVCD) required by the NERC for a 500 kV transmission line is 7.4 feet, at an elevation between 2,000 and 3,000 feet. Additionally, the desert has a high probability for windy conditions and so vegetation may need to be removed if it falls within the Wire Security Zone. The Wire Security Zone would add nine feet (three feet for vegetation growth plus a six-foot buffer) to the MVCD, for a total of 16 feet five inches beyond the point of conductor maximum sag or deflection. Therefore, the maximum height of vegetation vertically and radially from the conductors at maximum sag or deflection would be approximately 13 feet 10 inches. Border zone vegetation would be height limited to 31 feet seven inches, gradually increasing as the distance to the conductor increases.

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FIGURE F-7-2 DESERT ENVIRONMENT WIRE ZONE

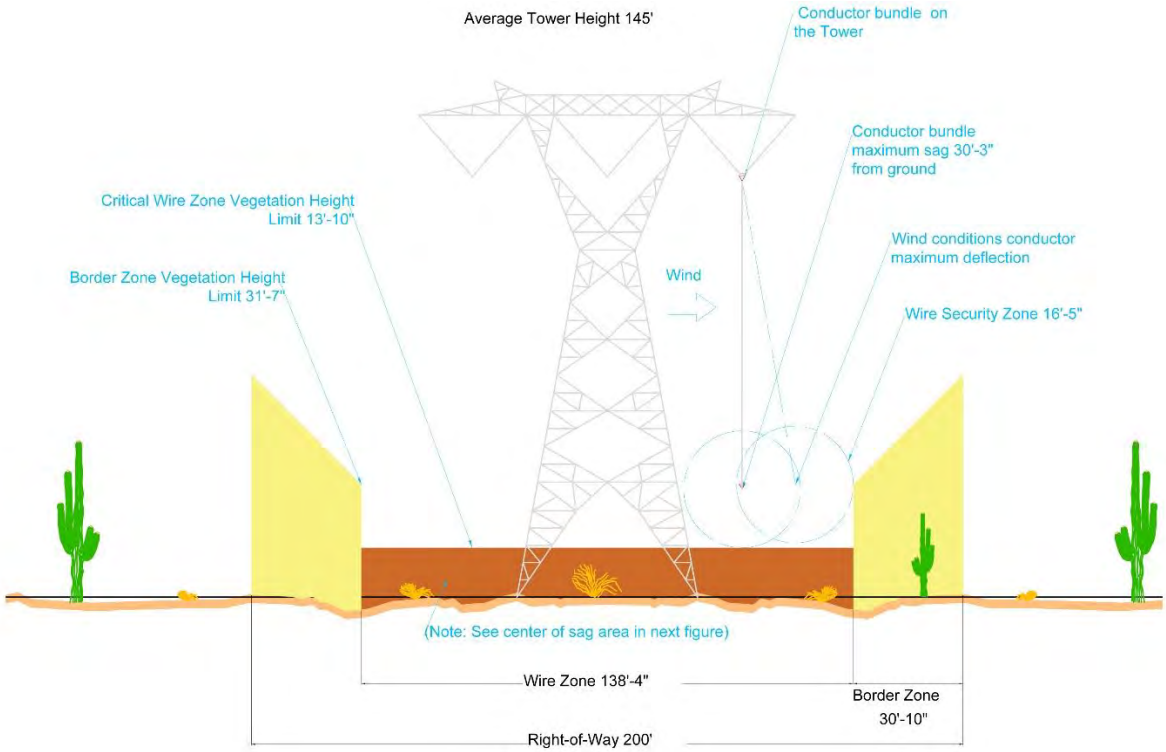

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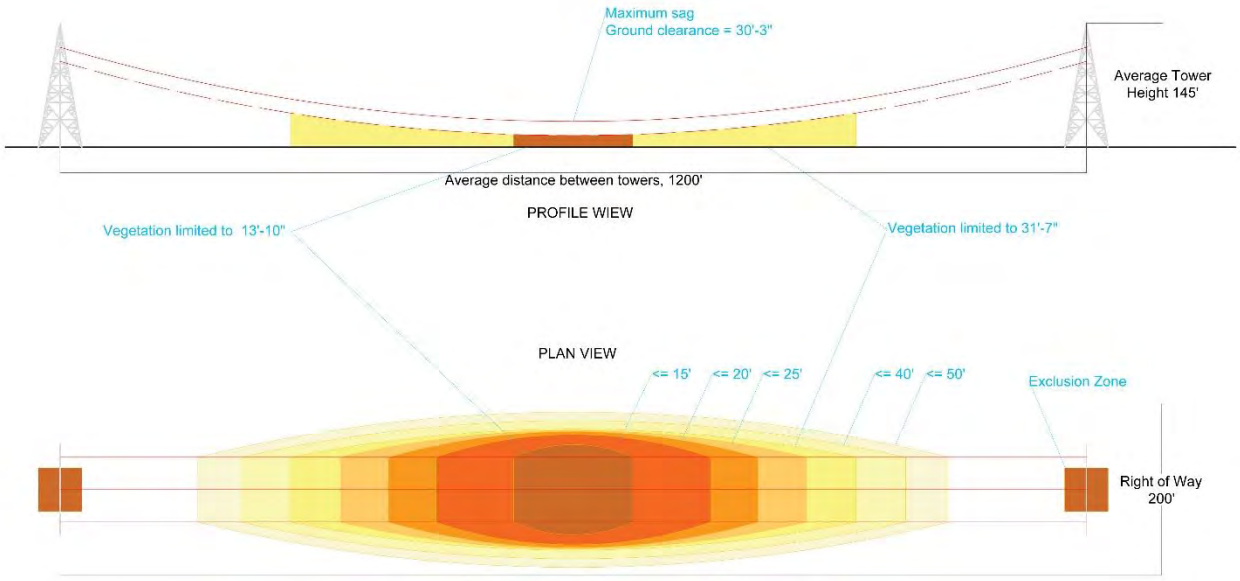
FIGURE F-7-3 DESERT ENVIRONMENT WIRE ZONE



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9.1 Chemical Control Methods

In select areas, herbicides may be used to control incompatible tree species that have the potential to regenerate from the root systems and grow into the minimum conductor-vegetation clearance requirements. All herbicide applications will be performed in accordance with federal, state, and local regulations, and in compliance with land manger and/or landowner requirements. All herbicide applications on federal lands will be in accordance with the applicable Pesticide Use Proposals obtained for the Project.

The purpose of herbicide treatment is to efficiently maintain clearances obtained following mechanical and/or manual treatments. Use of herbicides to manage vegetation along the ROW also lengthens the maintenance cycle and reduces the need for future hand and mechanical treatments. Vegetation targeted for herbicide treatments includes most vegetation that is targeted for manual and mechanical treatment, the exception being that saguaros would not be treated using herbicides. Herbicide treatment involves vegetation that is less than 10 feet tall whose physiology is such that it could encroach within the associated FAC-003 clearance distance, impact the reliability of the transmission line or transmission line facilities (e.g., structures, guy wires) or poses a fire fuel load concern. Only BLM-approved products from the approved California herbicide list would be used in California and only upon prior approval of the BLM Authorized Officer or landowner.

All herbicide treatment will be documented on pesticide application records for each herbicide approved by a Pesticide Use Proposal and kept in the Project office on site.

Additional restrictions on Project herbicide applications can be found in Section 18 of this Plan – Noxious and Invasive Weed Management Plan.

9.2 Additional Vegetation Clearing Requirements During Construction

Clearing of vegetation in and adjacent to the ROW will be minimized to limit disturbance to resources, reduce visual contrast, and protect nesting habitats, to the extent practicable while still satisfying conductor-clearance requirements. Vegetation will be removed selectively to blend the edge of the ROW into adjacent vegetation patterns, as practicable and appropriate. Vegetation will be removed selectively in riparian habitats and will be minimal along the Colorado River to protect sensitive resources in those area.

Where the ROW crosses sensitive roads and trails, such as scenic or historic designated routes, selective clearing shall allow natural vegetation to be left in the ROW on each side (as possible). Also, cutting or pruning of trees will occur so the fresh cut is oriented away from these areas where possible. To the extent practicable, pruning should occur around the entire tree, to reduce the appearance of flat sided trees facing facilities.

Danger trees shall be identified individually for trimming or removal. Danger trees are those which are located off the ROW and may contact electric facilities either through growth or if it should fall. DCRT will coordinate with the BLM prior to any off ROW tree trimming or removal.

9.3 Routine and Hazard Maintenance

DCRT will perform continued vegetation inspections throughout the life of the Project (pre-, during-, and post-construction). The owner (DCRT) will perform maintenance once yearly during the post construction phase for the up to 50 years of the BLM land lease. A crew with an accompanying environmental specialist will access areas requiring pruning or removal and acquire proper permitting or permission prior to any vegetation removal. Vegetation maintenance will also be performed with avian nesting practices in mind, either by performing it outside the typical nesting season or in coordination with a qualified biologist to inspect as necessary. Mowing will only occur in the immediate area around the structures. In other areas, vegetation that can get high enough to become a danger will be cut. Other relatively low-growing vegetation will remain under the conductors.

Mechanical tree clearing methods will involve the use of equipment such as chain saws, rakes, shovels, brush hooks, and mowers to clear vegetation. Manual treatment methods will include hand crews for all hazard vegetation work and for some routine vegetation maintenance work. Hand crews consist of line clearance tree workers that use hand tools (e.g., chain saws, hand saws, rope) to cut down or prune vegetation. Typically, only pick-up trucks are used as a means of travel to the work site, but a bucket truck and/or chipper may also be used.

Vegetation management crews will prune trees in preference to cutting trees and will cut trees in preference to removing them completely. Cut material may be placed in slash piles and/or used as vertical mulch as approved by the BLM and other acting agencies. Pruning will be accomplished by use of pruning saws, power saws, nippers, bow saws, or cross-cuts. Use of axes for pruning will be prohibited.

Vegetation that presents a hazard to the power line and structures require treatment on an ongoing basis outside the routine maintenance cycle. The need to treat hazard vegetation is not common due to the ongoing routine maintenance but is occasionally required.

These hazards are categorized into three levels and are treated slightly different for each level:

Level 1 Emergency Hazard: An emergency caused by vegetation occurs when vegetation is arcing to the line, has caused a power fault, is burning from contact or arcing with the line, and when all or a portion of a tree is in contact with the line from falling or growth into wires. Emergencies due to vegetation on a large 500 kV line are uncommon, but if it were to occur, it is a very serious threat. DCRT must act immediately to eliminate the hazard no matter the weather, road conditions, or time of day or year.

Level 2 Imminent Threat Hazard: There can be two types of imminent threat hazards: 1) alive or dead standing tree or vegetation having defects in the roots, butt, bole or limbs, which predispose it to imminent mechanical failure which could damage whole or part of the power line or structure; and 2) an imminent threat hazard may also be a tree or branch that has come close enough to the power line such that it poses a safety risk to the public and tree workers. Imminent threat hazards must be treated as soon as possible once the hazard is identified. These hazards are typically treated within a week of identification.

Level 3 Off Cycle Hazard: This type of hazard includes any live or dead tree that poses a future threat to the power line or structures and cannot be left untreated for the next growing season or next maintenance cycle. These hazards do not pose an immediate threat but must be treated prior to the next growing season, or out of cycle, before it becomes an

imminent threat. Treatment of Off Cycle trees may sometimes be scheduled around seasonal timing restrictions.

Vegetation maintenance protocol typically includes:

- Tall growing vegetation within the ROW is cut down and may be treated with herbicides.
- For each structure along the line, woody vegetation, including tall shrubs and trees, would be cut down and treated with herbicides (herbicide treatment excludes cacti) underneath the structure and 50 feet out from each footer of the structure.
- Low lying vegetation (e.g., creosote bush and grasses) within 50 feet around the structures will remain in place during maintenance. Maintenance vehicles will crush vegetation within 50 feet around each structure, but woody shrubs would be removed because they create puncture and tripping hazards.
- Lower growing vegetation, such as creosote bush and small cacti, that do not fall within 50 feet around the structures are left on the site untreated unless: 1) the shrub or cacti blocks access on the existing access routes within the ROW; or 2) the shrub density is high, causing a fuel load issue under the line. In the case of high density vegetation, the shrubs are thinned to a reasonable and safe density level while providing as much protection as possible to the line and structures in case of fire.
- Where line spans high above canyons and slopes, either no treatment will be needed, or some thinning may be needed to break up fuels under the line.
- Stumps from vegetation treatments are cut no greater than 12 inches above the ground, and where possible, are cut flush to the ground. For the hand crew operations, slash is lopped and scattered throughout the immediate area in a manner such that the debris lies no deeper than 18 to 24 inches above the ground. Where chippers are used, the chips are broadcast across the ROW. For mower operations, the majority of vegetation, except larger logs, are mulched by the mower and material is broadcast across the ROW.
- Access for all treatment methods is done using only established roads and access routes to approach the ROW. Crews performing vegetation maintenance may need to access cacti that are sited for trimming or removal that are outside of structure work areas or the Project's access road plan due to clearance issues. If this is required, vehicles will travel within the ROW and will use drive and crush methods whenever possible to minimize disturbance.
- Vegetation maintenance crews will make every effort to keep impacts within the ROW to a minimum. DCRT will only work within the ROW when the soils are dry enough to prevent ruts.
- All vehicles will be operated in a safe and prudent manner.

10 Access Road and Work Area Vegetation Clearing

Where necessary, vegetation will be cleared in approved locations to construct safe and operational work spaces. As with tree clearing for conductor clearance, the least invasive

and most efficient methods will be utilized in accordance with POD directives. Areas requiring clearing will include access roads, fly yards, structure work areas, pulling and tensioning sites, splicing locations, and turn out locations within Project access roads.

Vegetation clearing activities along access roads will also be performed in accordance with the restrictions provided for each access road type. The five Access Road types discussed below are described in further detail in Section 3 of the Project's POD:

- Access Type A – existing maintained public and private roads, which are paved, gravel, or dirt. These roads will be left in their original condition with no additional disturbance outside of the existing road matrix necessary to accommodate Project construction vehicles and equipment.
- Access Type B – existing roads that may require some level of improvement to accommodate Project construction vehicles and equipment.
- Access Type C – access roads that will be created, where necessary, to provide access along the length of the Project's ROW. DCRT will blade these roads along the transmission line's outermost conductor phase, but inside the Project's 200-foot-wide ROW to the extent possible.
- Access Type D – access spur roads that DCRT will blade to connect Access Types A, B, or C roads to structure work areas along the Project's ROW.
- Access Type E –helicopter assist access. In areas of biological, topographical, archaeological, and visual concerns, the use of helicopter-assisted construction may be implemented for construction activities. Light-duty pickup trucks, tracked equipment, and off-highway vehicles may be used.

Appendix K1 – Access Road Plan and Appendix K2 – Traffic and Transportation Management Plan of the POD provides further definition of Project access road types. Access road types for specific roads are further identified within the POD Map Sets. Please reference the POD for further information.

11 Landowner/Land Manager Coordination

All private landowners will be contacted by DCRT a minimum of 48 hours or as required by easement agreements prior to the start of vegetation management activities on their respective properties. All landowner communications will be documented and maintained by DCRT's Land Agent. Additionally, DCRT will coordinate with the BLM or their designated representative for vegetation management activities on BLM-administered lands.

12 Inspection

Safety and environmental inspections of vegetation management activities will be routinely conducted by Project personnel during construction. Areas inspected and found to be inadequate will be promptly addressed. All follow-up and corrective actions will be documented and coordinated with the appropriate persons.

The Project would be inspected annually to check for vegetation growth within the Project's ROW and proximity to the conductor. Palo verde are predicted to be the quickest growing large vegetation that could interfere with the conductor; however, all vegetation will be

inspected within the wire zone that could either vertically or radially come in contact with any lines.

13 Environmental Resources

All POD requirements pertaining to the protection of environmental resources will be followed. This includes implementation of mitigation measures intended to reduce impacts to streams, washes, wetlands, springs, soils, cultural resources, paleontology, sensitive wildlife species, sensitive plant species, land use, and visual resources.

14 Responsible Parties

A list of personnel responsible for the management and implementation of this Plan can be found below.

TABLE F-7-1 CONTACT LIST

Name	Title	Company	Contact Information
(TBD)	Project Manager	DCRT	(TBD)
(TBD)	Environmental Manager	DCRT	(TBD)
(TBD)	Project Manager	Subcontractor	(TBD)
(TBD)	Environmental Manager	Subcontractor	(TBD)
(TBD)	Safety Director	Subcontractor	(TBD)
(TBD)	Lead Environmental Inspector	Subcontractor	(TBD)
(TBD)	Lead Biologist	Subcontractor	(TBD)

15 Succulent Management

15.1 Introduction

15.1.1 Purpose

This Succulent Management section represents the commitment on the part of DCRT to protect succulent plant species. The overall objective is to provide measures to protect these resources from potential impacts during construction, operation, and maintenance and salvage those plants which cannot be protected. This Succulent Management section incorporates environmental protection measures contained in the Draft Environmental Impact Statement for the Project. This Succulent Management section is intended for use as a guide to determine the appropriate site-specific measures to be implemented during construction activities.

15.1.2 Goals and Objectives

Certain succulent species (especially some cacti) have physiological adaptations that result in high success rate for salvage and transplant. The goals of this Succulent Management section are to: 1) provide insight into the succulent types present in the Project area and their salvage assessment criteria and the regulations governing them; and 2) identify salvage methods for succulent plant species to implement prior to construction activities. These activities would support and achieve agency and state requirements to:

- Protect native succulent plant species.
- Salvage native succulent plant species.

15.2 Regulatory Compliance

The following provides a brief overview of federal and state legislation and regulatory compliance applicable to biological resources in the Project area that were considered in the development of this section.

15.2.1 Federal

The federal ESA, Section 7 (16 United States Code [U.S.C.] § 1531 et seq., 50 Code of Federal Regulations [CFR] Part 17.1 et seq.) provides for the designation and protection of threatened and endangered plants, as well as animal species, and habitat critical to their survival. The ESA authorizes the United States Fish and Wildlife Service (USFWS) to review a proposed federal action to assess potential impacts to listed species. Listed species are those that have been listed in the Federal Register as threatened or endangered as defined by the ESA. The ESA prohibits the “take” of listed species. The ESA and implementing regulations define “take” to include mortality and other actions that could result in adverse impacts such as harassment, harm, or loss of critical habitat.

The BLM does not allow the collection or the take of cacti and yucca on federally-managed lands without a special use or other applicable permit. Although most cactus species are not on the BLM’s Sensitive Plant List, the BLM typically requires some level of salvage of succulent species. These standards usually follow a hierarchy of perceived horticultural value, whereby those species most valued by landscapers and collectors (hence, those most commonly lost due to poaching on federal lands) are most frequently identified for salvage. The BLM District office will determine which succulent species will require salvage as well as any management requirements.

15.2.2 States

15.2.2.1 Arizona

The ANPL (Arizona Revised Statutes §§ 3-901 et seq.) was enacted to protect rare plant species and to protect some species from being over harvested. There are four Protected Native Plant Categories:

1. Highly Safeguarded – These plants are threatened for survival or are in danger of extinction. Protection includes not only the plants themselves, but their plant parts such as fruits, seeds and cuttings. A few examples of species in this category are

saguaro, Arizona willow, and some agave and cacti (*Agavaceae* and *Cactaceae* families).

2. Salvage Restricted – This large group of plants are subject to damage and vandalism. This is a large list of species with 32 plant families represented, the largest being numerous species of cacti.
3. Salvage Assessed – This much smaller group of plants have enough value if salvaged to support the cost of salvaging. This list includes desert willow (*Chilopsis linearis*), palo verde, ironwood, smoke tree (*Psorothamnus spinosus*) and several mesquite species.
4. Harvest Restricted – Also a smaller group, these plants are protected due to the fact that they are subject to excessive harvesting because of the intrinsic value of products made with their wood or fiber. Included in this group are bear grass (*Nolina microcarpa*), yucca (*Yucca* spp.), ironwood, and mesquite.

15.2.2.2 California Endangered Species Act

The California ESA was enacted in 1984 to parallel the federal ESA and allows the California Fish and Game Commission (CFGC) to designate species, including plants, as threatened or endangered. Under the California ESA it is illegal to import, export, "take," possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by California Department of Fish and Wildlife (CDFW). "Take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." There are 156 species, subspecies, and varieties of plants that are protected due to their threatened or endangered status under California ESA. Under California ESA, CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for incidental take include that the take is minimized and fully mitigated, that adequate funding is ensured for this mitigation, and that the activity will not jeopardize the continued existence of the species.

The Native Plant Protection Act of the 1977 Fish and Game Code (Sections 1900 through 1913) directed the CFGC to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the CFGC the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

The California Desert Native Plants Act of 1983 (Division 23 [commencing with Section 80001]) of the Food and Agricultural Code is intended to protect California desert plants from unlawful harvesting on both public and privately held lands, and to provide the information necessary to legally harvest native plants. This code allows removal of certain non-listed desert plants under permits issued by the county agricultural commissioner or sheriff. The Act specifically defines plants that may have limited harvest with appropriate landowner approval and permitting. "Landowner" includes the public agency administering any public lands within the areas subject to this division. The county agricultural commissioner may establish specific cutting, harvesting, and plant care criteria that would include the most favorable and practical horticultural methods and seasons to ensure the survivability of the plants, as well as to ensure compliance with existing local, state, and federal regulations.

Under California Penal Code Section 384a, a person shall not willfully or negligently cut, destroy, mutilate, or remove plant material that is growing upon state or county highway ROWs. In addition, a person shall not willfully or negligently cut, destroy, mutilate, or remove plant material that is growing upon public land or upon land that is not his or hers without a written permit from the owner of the land, signed by the owner of the land or the owner's authorized agent. In addition, removing or damaging plants from property that a person does not own without permission may constitute trespass and/or petty theft.

15.3 Succulent Plant Management

15.3.1 Succulent Plants Occurring in the Project Area

No plant species listed under the federal ESA would be expected to occur in the Project area. However, in Arizona more than 200 species protected by the ANPL, including 16 cacti or succulents (e.g., saguaro, cholla, pincushion, hedgehog, and beavertail), occur within the Project area. In California, only one succulent species was identified as likely to occur in the Project area (the saguaro cactus), and it is considered fairly endangered by California Rare Plant Ranking (CRPR) (not an endangered species, but "Least Concern"). The saguaro cactus is protected under the California Desert Native Plants Act. Table F-7-2 identifies the 16 succulent plant species likely to be present in the Project area.

TABLE F-7-2 SUCCULENTS LIKELY TO BE PRESENT IN THE PROJECT AREA

Scientific Name[1]	Common Name	Arizona Designation[2]	California Designation[3]	Growth Form[4]
Agave deserti spp. simplex	Desert agave	ANPL-SR	-	Y
Carnegiea gigantea	Saguaro cactus	ANPL-SR	CRPR: 2B.2	S
Carnegiea gigantea	Saguaro cactus 'crested'	ANPL-HS	-	S
Cylindropuntia acanthocarpa var. *acanthocarpa*	Buckhorn cholla	ANPL-SR	-	J
Cylindropuntia bigelovii	Teddy-bear cholla	ANPL-SR	-	J
Cylindropuntia echinocarpa	Silver cholla	ANPL-SR	-	J
Cylindropuntia kunzei	Devil's cholla	ANPL-SR	-	J
Cylindropuntia leptocaulis	Pencil cholla	ANPL-SR	-	J
Cylindropuntia ramosissima	Diamond cholla	ANPL-SR	-	J
Echinocereus engelmannii var. *chrysocentrus*	Hedgehog cactus	ANPL-SR	-	S
Echinomastus johnsonii	Beehive cactus	ANPL-SR	-	S
Fouquieria splendens	Ocotillo	ANPL-SR	-	J
Mammillaria tetrancistra	Pincushion cactus	ANPL-SR	-	S
Peniocereus greggii	Night blooming cereus	ANPL-SR	-	S
Peniocereus greggii var. *transmontanu*	Arizona queen-of-the-night	ANPL-SR	-	S
Opuntia basilaris var. *basilaris*	Beavertail cactus	ANPL-SR	-	J

Source: Draft Environmental Impact Statement

[1] Additional cacti and yucca protected under the ANPL could be present in the Project area.

[2] ANPL status: HS – Highly Safeguarded, SR – Salvage Restricted, SA – Salvage Assessed, HR- Harvest Restricted
[3] California Rare Plant Ranking (CRPR): List 2B – Plants rare, threatened, or endangered in California, but more common elsewhere; List 0.2 – Fairly endangered in California.
[4] S – single-stemmed cacti, J – jointed (segmented) cacti, Y – yucca and agave.

15.3.2 Growth Forms

The cacti, agave and yucca (collectively termed “succulents”) of the Project area are all native species; there are no introduced non-native succulents in the area. All of these plants store moisture in plant tissues above the ground, and for some of these succulents (barrel cacti), their entire aboveground biomass acts as a single water storage organ. Cacti are also leafless, and their chlorophyllous surfaces consist of the tissue covering their stems. Most taxa are heavily armed with stout siliceous spines. Many species of Opuntia are also armed with glochids, millimeter-scale spines that readily detach and penetrate the skin. Cactus species readily generate rootlets and root systems in response to seasonal increases in soil moisture. However, even with these commonalities, there are several distinct morphologies among these Sonoran Desert succulents that are relevant to their handling and salvage.

15.3.2.1 Single-stemmed Succulents

The single-stemmed succulents are those cactus species characterized by a single stem, usually slightly inflated. The single-stemmed succulent species are indicated in Table F-5-1. The barrel cactus a prominent plant of the Sonoran Desert, is an example of a single-stemmed succulent. It is a single stemmed columnar cactus that typically grows to a height of three to five feet, although taller specimens do occur (Benson 1977). Barrel cacti have a shallow root system that may extend two feet below the surface dependent upon the species. Single-stemmed succulents also include plants that have up to a dozen stems sprouting out to make up one individual, such as a barrel cactus with many heads or a hedgehog cactus (*Echinocereus engelmannii*). However, these stems always branch from the ground-level perennating (that is, persistent from year-to-year) buds, and the stems neither branch nor are they segmented.

The saguaro is another prominent plant of the Sonoran Desert that is classified as a single-stemmed succulent. It is a large, long lived, columnar cactus that is typically found on rocky or gravelly soils of foothills, canyons, and benches at 600 to 3,600 feet elevation (Benson 1977). The saguaro lifespan is estimated to be up to 200 years and can grow to a height of 50 feet and attain a weight of six to seven tons (Kearney and Peebles 1969). The saguaro is a very slow growing plant; it may only stand two feet at 30 years and reaches sexual maturity around 60 years of age. The saguaro root system is shallow, generally less than four inches deep and spreading in all directions to a distance approximately equal to the height of the plant. The shallow roots provide support and allow the plant to take advantage of even very light showers. A few roots may descend to three feet.

15.3.2.2 Segmented Succulents

The segmented, or jointed, cacti in the Project area as indicated in Table F-5-1. include chollas (*Opuntia* subgen. *Cylindropuntia*), ocotillo (*Fouquieria splendens*), and prickly-pears, such as the beavertail cactus (*Opuntia basilaris* var. *basilaris*). Chollas are typically ascendant and shrub-like, although their branching architecture consists of succulent, cylindrical joints. Buckhorn chollas (*O. acanthocarpa*) can exceed five feet in height and, with dense golden spines, can be more visually appealing compared to the nondescript and smaller silver cholla (*O. echinocarpa*). Cholla joints are cylindrical, and those of most

species are relatively short and detach easily from the mother plant with no injury to the plant. Their spines are typically sheathed with microscopic recurved barbs designed to "hitchhike" once they attach to the foot of an animal. Accordingly, cholla cacti often reproduce through vegetative propagation as dropped joints are scattered beyond the parent plant to, take root elsewhere.

An ocotillo is not a cactus, but a woody shrub that grows 10 to 20 feet tall with a short thick trunk and many long, spiny branches. Ocotillo, like cacti, use several genetic adaptations for the Sonoran Desert habitat. Its roots have a layer of cork-like cells around them to retain moisture. It is able to quickly leaf and blossom any time there is enough water. It waits for moisture in a leafless and dry stage. The south facing side of the plant is tougher and more heat resistant than the north side. The ocotillo can reproduce by fertilization and dispersal of seed, but generally has more success by vegetative propagation.

Prickly-pear cacti are ascendant plants with an architecture composed of flat, jointed, succulent pads. Some prickly-pears (*Opuntia chlorotica*) can grow up to five feet tall in the Project area, while other taxa (e.g., *O. basilaris*) can be diminutive, consisting of a few to approximately a dozen pads that do not branch extensively.

15.3.2.3 Yucca and Agave

Although technically succulents, yucca and agave species are unrelated to cacti. They are perennial monocots (grasses and allies) and are classified in the lily hierarchy. Agave and yucca belong to the same subfamily (Agavoideae) and have a similar appearance, with long, thin leaves bearing a sharp point at the end, radiating from a central stem to form a symmetric rosette. The main distinguishing features for yucca include leaves which are narrower, thinner, and less tapering than agave, as well as the absence of spines along the edges of the leaves, but often bear thin, curly white hairs instead. Agave leaves are generally wider, thicker, more tapering (lanceolate) and are often edged by spines without thin hairs. There were no known yucca species identified in the Project area, but one agave species was identified, desert agave (*Agave deserti* spp. *simplex).* Yuccas and agaves do not possess the same physiological attributes of cacti and thus do not respond as well to transplantation.

15.3.3 Succulent Adaptation to Desert Environments

The ecophysiology of North American cacti was a principal subject of study during the first decades of the twentieth century, as summarized by McGinnies (1981). Cacti resist desiccation partly because they lack traditional leaves and have a very small surface-to-mass ratio. Their cuticle is also thick, with stomata that close tightly during the day, open after dark, and respire at night to reduce moisture loss. Their root systems can also grow rapidly in response to increases in soil moisture, and rootlets also dieback readily, minimizing moisture loss caused by soil desiccation. Injuries, whether to the stem or root system of cacti, also callous quickly in the absence of fungi or other pathogens. Cacti are also rich in water and nutrients.

Many of the physiological adaptations of succulents to desert environments allow them to be relatively easy to transplant successfully if appropriate measures are taken. Some of these measures anticipate the vulnerability of cacti to soil pathogens. Rooted primarily in dry soils, cacti typically do not have the resistance to fungal pathogens possessed by most plants of more humid habitats.

The transplant success rates for yucca species are significantly below those for cactus species.

15.3.4 Succulents to be Salvaged

Pre-construction surveys and monitoring will be conducted to minimize impacts to succulents by identifying species and recording their location. The survey information will be provided to the BLM for approval prior to transplantation. Plant salvage assessments will be conducted in both Arizona and California in 2019, Post-Record of Decision on BLM administered lands for the Final Route. The procedure will entail an on-site pedestrian survey for BLM listed salvageable species. For each individual succulent species encountered, an assessment will be made of the likelihood that the salvage, propagation, and transplantation of that individual would be successful. DCRT and/or their contractor will perform health assessments based on: 1) height; 2) size class; 3) overall health of the plants (necrosis, trunk damage, etc.); and 4) feasibility of transplant assessments by looking at surrounding topography, soil, slope, and final placement area. Each succulent plant determined to be within height restrictions (discussed in the following sections), feasibly able to transplant, and in good or excellent condition will be salvaged. The general health condition of each plant will be assessed and evaluated using the following assessment criteria:

- Excellent – Over 80 percent live branches and stable root system. Vibrant green, few holes or marks, no evidence of rot or damage. Plump, Evidence of new growth.
- Good – Over 60 percent live branches and mostly stable root system. Green throughout, some holes or marks, but no evidence or rot. Skin generally even and smooth, appearance generally plump.
- Fair – Less than 60 percent live branches and/or mostly stable root system. Generally green, holes or marks with some indication of rot. Skin generally uneven in texture. Lacking girth.
- Poor – Less than 40 percent live branches and unstable root system. Yellowish color, evident damage or rot on skin, appearance of wrinkling or wilting. Retains tissue connection to base. Thin. Leaning. Top of main stem shrunken or leaning.
- Imminent Mortality – Dry, brown base, no green tissue connecting base and upper green, partly green or yellow tissue.
- Dead – Dry, brown, no green tissue.

Evidence of old tissue damage, scarring, and holes or roots do not directly indicate a saguaro is in poor health. A saguaro should not be disregarded for lack of plumpness if it is in similar condition to other saguaros in the area.

The following APMs and BMPs will ensure proper identification and treatment of succulents to be salvaged.

APM-BIO-11: Vegetation Management Plan – The Vegetation Management Plan would be approved by the BLM and implemented. That Plan describes the surveys, permitting, fee payments, and plant protection to be conducted in areas where Project design would not eliminate the need for vegetation control for the Project to be in compliance with NERC requirements. Vegetation would be trimmed or otherwise controlled for safe operation of the transmission line and would be designed to minimize impacts on special status species to the extent practicable. At a minimum, vegetation treatments shall incorporate the measures identified in the June 2006 Memorandum of Understanding regarding vegetation

management along ROW for electrical transmission and distribution facilities (United States Department of Agriculture [USDA] 2006). The Plan also would describe how vegetation would be salvaged, as needed, in order to comply with the applicable ANPL and California regulations.

BMP-BIO-11: Vegetation Management Plan – In addition to the description of the Vegetation Management Plan in the corresponding APM-BIO-11, the plan would also:

- Meet BLM guidelines for mapping and surveying of cacti, yuccas, and succulents.
- Include a wire zone/border zone/effective border zone approach to vegetation maintenance.
- Identify tall vegetation species by geographic reach and growth rates, from relevant scientific literature (such as Drezner 2003), to be used to determine maximum allowable vegetation heights in the context of wire zone/border zone/effective border zone concepts, to accommodate identified growth periods (e.g., 10 years) based on the specific vegetation community. Species examples include, but are not limited to, saguaro cactus, ironwood, palo verde, cottonwood, Goodding's willow.

APM-BIO-26: Arizona Protected Plant Inventory – An inventory of plants protected under the ANPL would be conducted on State Trust lands as required by the Arizona State Land Department. Similar surveys would be conducted on lands managed by BLM, as directed by that agency.

BMP-BIO-41: Succulent Management (Compliance with CMA-LUPA-BIO-VEG-1 General Vegetation Management and CMA-LUPA-BIO-VEG-5 and 6) – Management of cactus, yucca, and other succulents would adhere to current up-to-date BLM policy. All activities would follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, and other succulents. Preconstruction surveys of disturbance zones would include preparation of maps delineating special vegetation features. BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.

CMA-LUPA-BIO-VEG-5 (California only) – All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.

15.3.4.1 Single-stemmed Succulents

The species listed in Table F-7-3 will be salvaged by transplanting (removing the entire plant) wherever possible in situations where they will be threatened with destruction by construction activities (blading, crushing, or flail mowing). These single-stemmed succulents are not adapted to vegetative propagation like the segmented (jointed) cacti. Therefore, their salvage will involve transplantation of whole plants. The number of plant species included in Table F-7-3 may change once pre-construction surveys for succulents are complete.

TABLE F-7-3 SINGLE-STEMMED SUCCULENTS TO BE SALVAGED BY TRANSPLANTING THE ENTIRE INDIVIDUAL

Scientific Name[1]	Common Name
Carnegiea gigantea	Saguaro cactus
Carnegiea gigantea	Saguaro cactus 'crested'
Echinocereus engelmanii var. chrysocentrus	Hedgehog cactus

Scientific Name[1]	Common Name
Echinomastus johnsonii	Beehive cactus
Peniocereus greggii	Night blooming cereus
Peniocereus greggii var. transmontanu	Arizona queen-of-the-night
Ferocctus wislizeni	Fishhook barrel cactus

[1] Additional cacti protected under the ANPL could be present in the Project area.

Barrel Cacti: The fishhook barrel cactus (*Ferocactus wislizeni*) is classified as Salvage Restricted under the ANPL. The Natural Resources Conservation Service ([NRCS] 2009) and Arizona Department of Transportation ([ADOT] 2012) indicates a small-sized cacti species such as a two-foot-tall saguaro or small barrel cacti can attain a 95 percent survival rate. This report includes all barrel cacti of the small and medium size categories, those that fit into a one- to five-gallon bucket as eligible for salvage assessment.

Saguaro: Saguaro cacti are classified as Salvage Restricted under the ANPL and CRPR classifies saguaro cacti as 2B.2. (List 2B – Plants rare, threatened, or endangered in California, but more common elsewhere; List 0.2 – Fairly endangered in California). Crested saguaros are classified as Highly Safeguarded under the ANPL and are not classified in California.

DCRT will work with the BLM to determine which saguaros may be salvageable, to be determined on an individual plant basis within the ROW. Factors such as terrain, access, health, and number of arms on a saguaro would determine if it can be salvaged. Where possible, DCRT would relocate saguaros that meet all the following criteria in accordance with the Record of Decision; *Salvage Techniques for Saguaro Cacti, Barrel Cacti and Ocotillo* produced by NRCS in 2009; *Evaluation of Salvage and Replanted Native Plants* on ADOT Projects (ADOT 2012); the *Long-term Study of Preserved and Transplanted Saguaros in an Urban Housing and Golf Course Development* by Harris et al. 2004; the *Native Plant Preservation Manual* produced by Pima County Development Services in 1998; and *Best Management Practices for Saguaro Translocation and Replanting* by Arizona Game and Fish Department (AGFD) in 2019. Vegetative species deemed as highly safeguarded or salvage restricted will be evaluated for potential transplantation based on the following criteria:

- All efforts should be made to avoid moving these cacti to the extent practicable.
- The saguaro is within the clearance limits and 15 feet tall or less.
- The saguaro is within the wire zone of the lines or could potentially grow to become a hazard to the lines in the future within the line easement period.
- The saguaro does not occur within a cultural site; if so, the proper protocol for Historic Properties Protection will be followed. This might include hand salvage with proper cultural monitors present.
- Terrain, access, and other environmental or logistical factors are favorable to relocation of the saguaro (e.g., minimal difficulty of extraction or transplantation).
- The saguaro is in good health (absent of necrosis, sunburn, tissue rot, parasites, etc.), with minimal arms as determined by qualified biologists or the BLM or BLM-approved contractor. Saguaros with arms longer than seven to eight feet, central stem lengths greater than 25 feet, and more than seven to eight arms are likely nearing the end of their lifespans. Those that are thinning and balding at the tops

with spine loss, numerous bird holes, or other obvious damage and blemishes are also poor candidates (AGFD 2019).

- Substrate is conducive to successful salvage (e.g., no bedrock, rocky steep terrain).
- There are no accessibility constraints.
- There are no safety hazards for the salvage equipment.

Saguaros that do not meet the criteria outlined above may be removed by mechanical crews if they are close enough to be a potential threat to the transmission line (approximately 22 feet from wires) as determined by DCRT. Additionally, prior to removal of saguaros during nesting seasonal restrictions (February 15 through August 31), a qualified biologist will inspect flagged saguaros for nests to avoid impacts on migratory bird nesting season.

APM-BIO-16: Treatment of Saguaro Cactus – Measures would be implemented to minimize the number of saguaro cacti that must be relocated for the safe construction and operation of the transmission line. In accordance with the Vegetation Management Plan a survey of saguaros within the ROW would be conducted before construction and where possible, the transmission line would be designed to minimize the number of saguaros affected by adjusting tower locations and conductor height. The Plan would address plant salvaging, storing, and replanting requirements and methods, only those saguaro that are within 50-feet of the outermost conductors and could be tall enough to pose a hazard would be removed if they cannot be avoided through Project design. When possible, saguaro that must be removed would be relocated as directed by the BLM and state agency protocols. Monitoring and management of saguaros during operations would occur as described in the Vegetation Management Plan.

15.3.4.2 Segmented Succulents

The species listed in Table F-7-4 can be vegetatively propagated and therefore, their salvage will be primarily through the recovery of cuttings of pads (prickly-pears) or joints (chollas). Prickly-pear and cholla species will be salvaged by uprooting them during construction and leaving them within the slash piles to be spread by equipment post-reclamation. The number of plant species listed in Table F-7-4 may change once pre-construction surveys for succulents are complete.

TABLE F-7-4 SEGMENTED SUCCULENTS TO BE SALVAGED USING PADS, JOINTS, OR CUTTINGS REMOVED FROM THE PLANT

Scientific Name[1]	Common Name
Agave deserti spp. *simplex*	Desert agave
Cylindropuntia acanthocarpa var. acanthocarpa	Buckhorn cholla
Cylindropuntia bigelovii	Teddy-bear cholla
Cylindropuntia echinocarpa	Silver cholla
Cylindropuntia kunzei	Devil's cholla
Cylindropuntia leptocaulis	Pencil cholla
Cylindropuntia ramosissima	Diamond cholla
Fouquieria splendens	Ocotillo

Scientific Name[1]	Common Name
Opuntia basilaris var. basilaris	Beavertail cactus

[1] Additional cacti protected under the ANPL could be present in the Project area.

15.3.4.3 Yucca and Agave

Yuccas are often transplanted on desert restoration sites. However, survivorship is notably reduced in yucca transplants compared to other succulents, and the costs may be much higher (Bainbridge 2007; Bamberg Ecological 2006). At Castle Mountain Mine, transplanted Mojave yucca (*Yucca schidigera*) mortality within three years after planting was reported from 30 to over 50 percent. Subsequent years saw higher mortality rates, and by the end of the study, the transplant program for yuccas was not considered successful (Bamberg Ecological 2005 and 2006). In a study reported by Abella and Newton (2009), double-transplanted Mojave yucca had survival rates of only 39 to 53 percent over the limited (two-year) monitoring period; rainfall was potentially above average for the study period.

Yucca: Yucca species (*Yucca* var.) are listed under the Salvage Restricted category within the ANPL under the Agavaceae (Agave) Family. According to the Standard Operating Procedures for the Salvage, Transportation, and Care of Cacti and Yucca on BLM Land by the BLM (n.d.) all yucca less than six feet tall could be salvaged, though it is not recommended due to high mortality rates. All yucca over six feet tall have high mortality rates when transplanted and will be deemed unsalvageable.

Agave: All Agave (*Agave* var.) are considered Highly Safeguarded by the ANPL. If encountered on the ROW, Agave will be evaluated for species verification. Currently, there are no federally-listed agave species in the Project area. All agave encountered will be considered eligible for Salvage Assessment, although it is not recommended due to the potential mortality of species after transplant.

15.3.5 Salvage Techniques

All personnel engaged in succulent salvage will wear appropriate protective clothing and receive safety training that will include coaching regarding how best to avoid Opuntia glochids and the crushing hazard posed by the weight of a mature barrel cactus.

15.3.5.1 Succulent Salvage and Cleaning

Single-stemmed Cacti, Yucca, and Agave

Data from pre-construction surveys for succulents will be used for planning and relocation operations. Underground utilities will be marked prior to salvage activities. The larger single-stemmed cactus, such as the saguaro, will be salvaged using a hand crew or an excavator with a special attachment. The plant will first be wrapped with burlap or other appropriate material, and a guide rope will be affixed, if necessary. The bucket of the equipment or hand crew will then scoop the plant (including the proximal portion of the root mass) out of the ground. The minimum length for the saguaro excavated taproot is 18 inches, but if soil conditions allow for a deeper excavation and removal of more of the tap root, this should be done (AGFD 2019).

Smaller single-stemmed succulents will be salvaged using two-man crews with shovels. The succulent will be manually dug out of the ground, taking care to minimize damage to the roots proximal to the plant. Each plant will bear a vinyl tag identifying its provenance and date of harvest. For efficiency, the tags will be color-coded and labeled prior to the beginning of each day's work.

If a saguaro appears fully hydrated and is in superb condition, then generally watering is not necessary prior to extraction. A fully hydrated saguaro before a move creates a reserve the plant can use while regenerating the 80 percent or more of the roots it will lose when excavated (AGFD 2019). If the saguaro is dehydrated (shrunken ribs, pinched tips), and/or the hot season is approaching, then it is recommended that they be well watered at least once prior to extraction (AGFD 2019). Since the saguaro cacti for this Project are in remote locations, an attempt will be made to water dehydrated saguaros prior to extraction, but is not probable without roads and therefore watering will occur post extraction, if necessary.

Segmented Cacti

Because they grow readily from cuttings (actual cuttings, or just joints or pads removed from the plant), most species of segmented cacti (Table F-7-4) can be more efficiently salvaged by removing parts of the plant, rather than transplanting the entire plant. This also allows for economy of scale to the extent that one plant can yield several new plants depending on how many of its cuttings are propagated.

Prickly-pear and cholla species will be salvaged by uprooting them during construction and leaving them within the slash piles to be spread by equipment post-reclamation.

15.3.6 Salvage Protocol

15.3.6.1 Tagging

Upon Health and Feasibility Assessments, DCRT and/or their contractor will tag individual plants with a plant identification number and document their Global Position System (GPS) location. Plant identification numbers are written on color coded vinyl tags specific to withstand weather. These tags are attached to individual plants using either 26-gauge silver, galvanized steel wire, or thin braided rope so as not to endanger the health of the plant by the introduction of ferrous microbes. Plant identification tags are color coded by three colors to simplify communication to construction crews, which diminishes confusion. Colors are picked for three categories: 1) salvageable, 2) non-salvageable, 3) avoid.

Red will be used for those who meet all requirements for translocation, blue for species who did not meet requirements for salvage and will be deemed "unsalvageable" and consequently removed mechanically, and yellow for cacti to be avoided. A tracking sheet will be kept with plant identification, salvage status, health status, and feasibility, and will be available to the Compliance Inspection Contractor (CIC) or BLM upon request.

For all single-stemmed cacti and yucca undergoing whole plant transplant, all individuals would be flagged on the north side to facilitate correct orientation during transplantation. Saguaro cacti will be flagged on the north side at one foot above ground level to facilitate replanting the saguaro facing the same direction, and to the same depth, at which it was growing.

15.3.6.2 Transplanting

Moving salvaged plants multiple times can lead to lower survivability and undue stress on the individuals. Mature salvaged saguaros exhibited higher chances of survival using the “once-move” technique in which they were only relocated once (ADOT 2012). As indicated by the study, each saguaro has an approximate 50 percent chance of survival with saguaros 12 feet and under exhibiting a 70 percent chance when salvaged, however each move lowers survival by 20 percent after the initial relocation each time Harris et al. (2004) and ADOT (2012) found the taller saguaros had a lower survival rate and exhibited poorer health due to their weight damaging trunk tissue and depth required for root survival. In addition, the presence of arms had a negative effect on saguaro survival rate and overall health following transplant (APS 2017). Thus, the “move once” (i.e., extracted and loaded onto the cradle, transported to the new permanent site, and then directly re-planted from the cradle) technique will be employed for this Project for on-site salvage of all types of succulents.

Saguaros and other cacti can be planted essentially throughout the year, although spring is the most ideal season. The days when the soils are saturated by rains (summer or winter) should be avoided because the monsoons can result in excess soil moisture which promotes root rot (AGFD 2019).

Shallow swales and holes will be scooped-out and individual cactus placed upright. For saguaro, excavate the new hole to a width twice as wide as the extant root ball. The cactus will be oriented correctly in the north-facing direction to the extent possible and roots covered by pushing soil around the plant base. The saguaro should be replanted no deeper (or within one to two inches) than its original level in the ground. A saguaro planting detail is included as Attachment F. For the native soil used as backfill, it is especially important to remove any rocks or caliche chunks over three inches in diameter, as these large rocks could damage roots they contact. The backfill must be firmly compacted around the plant. If the north marking tag gets lost, the north side of a saguaro may be determined by: 1) saguaros generally have a sloping top that is oriented to the south, and 2) the north side of the saguaro is a lighter green color than the south side (AGFD 2019). Positioning will be checked for stability and adjusted as necessary. Saguaro will be vertically straight and balanced.

Taller cactus may be supported by loosely tying to lathe strips or other upright support. Experience indicates that saguaros less than 12 feet do not require additional support if the backfill is well tamped (AGFD 2019). This height can be extended to 15 feet for saguaros with no arms. Saguaros over 15 feet tall or those between 12 to 15 feet with arms should have additional support or bracing (AGFD 2019). The preferred support system consists of three guy wires strung through sections of fiber-reinforced hose or tree straps. Galvanized wire rope is recommended. Sections of hose are placed around the plant two-thirds up from the base of the saguaro. Triangulate the three guy wires from the hose sections surrounding the plant column and stake them into the ground using 24-inch #4 rebar. Ensure the collar is not too tight around the stem. The use of wooden 2x4 supports covered with carpet at the point of contact with the stem are not recommended as the carpet can retain moisture which promotes decay. Lath and support structures will be removed following the five-year monitoring period.

Create a tapered mound or cone of soil around the base of the saguaro to divert water away from the stem to reduce rot or pathogens from contacting the stem base. The cone is not compacted so it will eventually erode away. Some of the excavated dirt should be used to create a water-collecting basin around the saguaro. These designs facilitate the efficient use of supplemental water and also capture some additional runoff water from rainfall events.

Salvaging techniques for transplant along access roads, structure sites, or general ROW may require the off-road drive-and-crush travel of rubber-tired vehicles such as a backhoe for placement. Off-road travel will be limited to 10 to 15 feet from disturbance area. Off-road travel is predicted to be required for translocation of saguaro cacti which cannot be done by hand due to their weight. Prior to this technique, all other salvageable species within the area in danger of being crushed will be transplanted.

Plant species that can be salvaged are transplanted adjacent to, or within a similar area, of original terrain and slope orientation. Species such as saguaros have been salvaged using a specialized attachment carpeted for species' protection, on a backhoe or excavator. Impressions are made within the dirt of the final location area for water catchment. Final transplant location areas are identified with GPS coordinates and documented. The BLM may also use transplanted succulents to rehabilitate previously disturbed areas within their jurisdiction.

Placement of Salvaged Species will occur along existing access roads and structure work areas outside of wire clearance specifications and construction activities. Placing Species along the roads and structure work areas will provide access by water trucks in which they will be watered by hose or spray within two weeks of transplant. Hose and/or spray watering techniques will be done at a low velocity so as not to damage the species further or cause excessive puddling.

All cultural sites would be located and flagged with a buffer prior to saguaro removal and relocation. If a saguaro occurs in a cultural site, it would not be relocated or treated using mechanical equipment unless the proper monitors are present. Saguaros and Salvage Species in cultural sites that are within 22 to 30 feet vertical distance and 50 feet horizontal distance of the conductors as maximum load conditions will be cut using hand crews or else pruned. Specimens considered unsalvageable outside of cultural areas will be treated mechanically. Mechanical methods may include mowers, excavators, and pruning.

A Collectors Permit and Removal Permit will be obtained from the AZDA for the saguaro salvage operation on non-BLM lands, if required. On BLM lands, the contractor must get a shipping permit from BLM before transporting the plants. Saguaros to be relocated would be moved to an area absent of cultural resources outside of the wire zone and away from the low sag area for these lines. Wherever possible, transplanted saguaros within the ROW on BLM land would be relocated to an acceptable area or along the edge of the ROW near to where they were removed so that they may continue to be beneficial to local wildlife. As an alternative to relocation or removal, pruning may be used as determined by the BLM. Saguaros may require future treatment if pruning is implemented and they grow within the 22- or 50-foot violation distance. Pruning of the plant would involve topping or removing arms, making cuts at a 45-degree angle and sealing the wound with a sealing compound.

15.3.6.3 Saguaro Post-Planting Care and Monitoring

Watering Newly Transplanted Saguaros

Plant the cactus into dry ground, backfill and do not water immediately to settle the backfill. Recommended watering regimes will vary by season and transplantation date. Initiate post-transplant saguaro watering according to the following guidelines:

- The initial post-transplant watering regime should emphasize avoiding prolonged excessively moist conditions by providing intermittent watering in well drained conditions.

- Saguaros transplanted in the spring, summer, or early fall months should remain in the dry backfill soil for four weeks before initial watering begins. Four weeks is the recommended time for plants whose roots were not air-dried.

- If saguaros are transplanted in the later fall or early winter, they should have a full month of dry soil time to reduce any onset of root rot, but they can receive an initial watering after this dry period if there has been no rainfall. Root development and activity is generally inhibited by the cooler weather, and the cool, moist conditions may facilitate root rot. However, it is also not advisable that a newly transplanted saguaro should stand without any water for many months. The recommended schedule is to provide some water for those cacti which are disposed to use it, but also long enough periods between watering to deter the continued development of any root rot that might start.

Watering will be done by water truck as the roads are available and are being watered, otherwise supplemental watering will not be provided.

Other Post-Planting Management Practices

Do not cultivate and otherwise disturb area around the trunk (up to seven feet diameter) to avoid damaging shallow roots. Do not mulch with any material that reflects or intensifies light. Do not cover soil with plastic sheets. Fertilization is generally not necessary.

15.3.7 Succulent Salvage Techniques Summary

The following conclusions are based upon *Salvage Techniques for Saguaro Cacti, Barrel Cacti, and Ocotillo* completed by NRCS (2009). This information was gathered from available sources including interviews with salvage contractors and experts in the field, and literature review. This information is meant to summarize the most technically correct procedures for removing and transplanting saguaros, barrel cacti, and ocotillos.

1. Saguaros and barrel cacti can be transplanted at any time of the year with success, except during the winter rainy season when cool temperatures and moisture promote decay in fresh transplants. This may require some advanced scheduling to prevent a long operation from advancing into the wet season. Spring is the optimum time due to the typically dry weather and dry soil conditions which help reduce transplant rot. Although monsoons occur during the summer, the rain tends to be short duration with little soil penetration and the hot weather tends to prevent fungal growth.
2. Saguaro and barrel cacti less than five feet tall can be transplanted by hand. For cacti above five feet, a cradle which supports the plant to a holding yard or to a new location, will be necessary.
3. All three species incur damage when moved. The plants must have a two-week healing period before water is applied. This period allows the roots time to dry, sealing wounds, cuts, and abrasions. When removing saguaro, take as much of the root system as possible from the excavated area.

4. The preferred support system for saguaro consists of three guy wires strung through sections of hose. The sections of hose are placed around the plant two thirds up from the base. Triangulate the three guy wires from the hose sections surrounding the plant column and stake them into the ground, making sure the collars are not too tight. Carpet should not be substituted for hose sections. Carpet retains excess moisture and promotes decay. Storing plants is only recommended when circumstances dictate. Immediate transfer of plants to their permanent location ensures the best survival rate. This method results in the reduction of excessive mechanical handling, reducing the probability of plant damage.
5. The commonly accepted industry standard to determine saguaro transplant success is one to two years after transplanting. The consensus of the technical community is that four to five years is necessary to determine survival.
6. A small mound of soil should be built around and against the base of the saguaro (below the fleshy part to prevent decay). The mound should slope away from the saguaro into a basin that surrounds the cactus. The basin should be three to four inches deep and three times the diameter of the plant.
7. Backfill will consist of native soil. It is important that there is no standing water against the fleshy parts of the saguaro. The water should drain down and away from the plant to prevent fungal infection and decay. This is also true for barrel and ocotillo. The planting depth for the barrel and saguaro cacti should not exceed the callused portion of the base. Moisture contact to the callused area does not appear to promote plant tissue degeneration.
8. Generally, transplant success is greater with barrel cactus followed by saguaros.
9. Duplication of solar orientation when transplanting is crucial for cacti but not necessary for smaller ocotillo. It may be beneficial for large, old ocotillo to be planted in its original solar orientation. Saguaro and barrel cacti that were removed from the shade of another plant (such as palo verde) should be transplanted into locations that will provide shade or they may sunburn and their survival could be diminished.

15.3.8 Succulent Reuse, Donation, Sale, or Nurseries

Although it has been suggested for this Project that salvaged succulents could be used for seed source, this practice is not widely used in revegetation in the arid west because vegetative propagation of cacti is simple and effective.

Approved donation or approved sale of cacti may be identified by DCRT and the BLM as appropriate manners of disposition of the cacti not immediately transplanted. There would be some use for cacti in revegetation of temporary disturbance areas, but this use would be limited. Succulents will be transplanted into recently seeded areas to provide increased microhabitat heterogeneity.

Although not recommended for this Project, an open-air nursery could be used to house succulents if the plants are not immediately transplanted, donated, or transferred to another party. Cacti planted in the open-air nursery for long-term stockpiling can be accessed to collect seed in favorable years after they set fruit. Their proximity in the nursery should promote good pollination.

15.3.9 Compensation

On state-owned lands in Arizona, DCRT may choose to pay for succulent plant damage instead of relocating these plants. Compensation fees are governed by the state. Generally, the BLM and ADOT require salvage, but ultimately the BLM will decide the species to salvage.

15.3.10 Monitoring and Reporting

Monitoring and reporting will begin the quarter (three months) after the first target species are salvaged and continue for up to five years or until success criteria are met, whichever occurs first.

15.3.10.1 Monitoring

Pre-Construction to Five-years Post-Construction

A BLM approved third-party consultant Botanist will monitor all transplanted individuals monthly for a period of two years post-transplantation using a schedule that includes irrigation if necessary and the removal of invasive plant species. After two years, the BLM approved third-party consultant Botanist, will implement a quarterly monitoring schedule until a period of up to five years, or until the success criteria are met or otherwise noted by the AZDA and/or BLM. Lath and support structures will be removed following the five-year monitoring period.

Success Criteria

After two years, a success threshold of 50 percent survivorship of salvaged and transplanted species is targeted and will be the measurable objective that defines success.

Adaptive Management

Documentation of techniques used, timing, weather conditions, changes in protocol, and success or failure will be performed by an authorized Botanist at regular intervals. Adaptive management may be employed whenever necessary and will be determined by the Project's Environmental Compliance Monitor, Designated Biologist, and an Authorized Botanist in coordination with the BLM.

15.3.10.2 Reporting

Monitoring reports are required to evaluate monitoring results to determine if success standards are being met; and if not, to determine what adaptive control measures should be implemented and the rationale for the use of these measures and evaluation of the success of these measures.

Quarterly Reports

Quarterly monitoring results will be presented in a summary report and will include:

- Summaries of any transplanting or seed collection/cuttings conducted in the previous quarter.
- Adaptive management efforts implemented, including date, location, type of treatment, and results.
- Ongoing evaluation of success of transplantation and seedling propagation measures.

Copies of these reports will be kept on file and a copy of each quarterly summary will be sent to the BLM, AZDA, and CDFW for review and comment.

Annual Reports

Annual salvage and transplantation results will be presented in an annual report that will include:

- All salvage and transplantation activities conducted in the previous year.
- Adaptive management efforts implemented, including date, location, type of treatment, and results.
- Ongoing evaluation of success of transplantation and seedling propagation measures.

Copies of these reports will be kept on file and a copy of each annual report will be sent to the BLM, AZDA, and CDFW for review and comment.

Special Reports

Two-Year Post-Construction Monitoring Report

After the initial two-year post-transplanting monitoring is completed, a comprehensive monitoring report will be produced to describe the outcome of vegetation salvage and transplantation on the Project for the initial two-year period. This report will be submitted to the BLM, AZDA, and CDFW for review and comment.

Five-Year Post-Construction Monitoring Report

After the five-year post-construction monitoring has been completed, a final and comprehensive monitoring report will be produced to describe the outcome of vegetation salvage and transplantation on the Project. This report will be submitted to the BLM, AZDA, and CDFW for review and comment.

15.3.11 Environmental Protection Measures

Implementation of the Succulent Management section, environmental protection measures described in this section, as well as adherence to the following environmental protection measures will ensure succulent plant species are managed accordingly during construction activities, reclamation, and operation and maintenance activities associated with the Project:

- BMP-BIO-01: WEAP

- BMP-BIO-43: Collection of Plant Material
- BMP-VEG-01: Removal of Vegetation
- BMP-VEG-02: Avoid Vegetation Removal

15.3.12 California Environmental Quality Act Compliance

There are additional mitigation measures that are limited in scope to California. These include:

- MM BIO-CEQA-4: Develop a Habitat Restoration, Mitigation, and Monitoring Plan
- MM BIO-CEQA-5: Develop a Special Status Plant Transplantation and Compensation Plan
- MM BIO-CEQA-12: Compensation for Impacts to Sensitive Vegetation Communities
- MM VEG-CEQA-1: Develop and Implement a Vegetation Management Plan
- MM VEG-CEQA-2: Conduct Pre-Construction Floristic Surveys
- MM VEG-CEQA-3: Conduct Focused Surveys for Harwood's Eriastrum
- MM VEG-CEQA-4: Compensation for Impacts to Special-Status Plant Species and Sensitive Communities

16 Special Status Plant Transplantation and Compensation

16.1 Introduction

This Special Status Transplantation and Compensation section sets forth the methods DCRT and its Construction Contractor(s) will undertake to transplant special status plant species and/or compensate for damage or removal of special status plant species during construction, operation, and maintenance of the Ten West Link.

16.1.1 Purpose

This Special Status Plant section represents the commitment on the part of DCRT to protect special status plant species. The overall objective is to provide measures to protect these resources from potential impacts during construction, operation, and maintenance and salvage and transplant those plants which cannot be protected. Compensation may be required for special status plants which are impacted and cannot be salvaged and/or transplanted in California. This Special Status Plant section incorporates environmental protection measures contained in the Draft EIS for the Project. This Special Status Plant section is intended for use as a guide to determine the appropriate site-specific measures to be implemented during construction activities.

16.1.2 Goals and Objectives

The goals of this Special Status Plant section are to: 1) identify the special status plant species present in the Project area and the regulations governing them; 2) identify transplantation methods for special status plant species to implement prior to construction activities; and 3) present compensation options for impacts to special status plant species in California. These activities would support and achieve agency and state requirements to:

- Protect native special status plant species.
- Salvage and transplant native special status plant species.
- Use salvaged native special status plant species in reclamation activities.
- Compensate for potential loss of special status plant species.

16.2 Regulatory Compliance

For an overview of the federal and state legislation and regulatory compliance applicable to special status plant resources in the Project area that were considered in the development of this plan, see the Succulent Management section (Section 15) and the Linear ROW Rare Plant Protection section for Harwood's Eriastrum (Section 17).

16.3 Special Status Plant Species Eligible for Transplantation

Certain succulent species (especially some cacti) have physiological adaptations that result in high success rate for salvage and transplant. Other species including trees, shrubs, and annual and perennial herbs are not candidates for transplant due to low success rate for salvage and transplant.

16.3.1 Endangered Species Act Threatened, Endangered, and Proposed Plant Species

No plant species listed under the ESA would be expected to occur within the Project area.

16.3.2 Other Special Status Plant Species - Arizona

The AZDA maintains a list of plants protected under the ANPL. That list includes four categories of protected plants: Highly Safeguarded, Salvage Restricted, Salvage Assessed, and Harvest Restricted. Highly Safeguarded plants include rare species; many of the species under other classifications are widespread throughout the Project area. Table F-7-2 in the Succulent Management Section (Section 15) lists succulent plant species protected under the ANPL that are likely to be present in the Project area in Arizona.

16.3.3 Other Special Status Plant Species – California

In addition to BLM designated sensitive plant species, the BLM confers sensitive status on California State endangered, threatened, and candidate species, and rare plant species with a California Rare Plant Rank of 1B (rare, threatened, or endangered in California and elsewhere) that are on BLM-administered land or affected by BLM actions (Land Use Plan

Amendment [LUPA]). Sixteen special status plant species have been found or could be present in the Project area. However, none of those species are classified as endangered, threatened, or rare by the California Fish and Game Commission (CDFW 2019). Only one of these 16 plant species is a succulent: the saguaro. The CRPR for the saguaro is 2B.2. The 2B ranking indicates the plants are rare, threatened, or endangered in California, but more common elsewhere and the 0.2 ranking indicates the plant is fairly endangered (not an endangered species, but “Least Concern”) in California. The saguaro cactus is protected under the California Desert Native Plants Act.

16.4 Special Status Species to be Transplanted

Pre-construction surveys and monitoring will be conducted to minimize impacts to succulents by identifying species and recording their location. The survey information will be provided to the BLM for approval prior to transplantation. Plant salvage assessments will be conducted in both Arizona and California in 2019, Post-Record of Decision on BLM administered lands for the Final Route. The procedure will entail an on-site pedestrian survey for BLM listed salvageable species. For each individual succulent species encountered, an assessment will be made of the likelihood that the salvage, propagation, and transplantation of that individual would be successful as described in the Succulent Management Section.

16.5 Salvage Techniques and Protocol

The salvage techniques and protocol described in the Succulent Management Section will be followed for special status succulent plant species.

16.6 Re-planting Techniques

The re-planting techniques described in Succulent Management Section will be followed for special status succulent plant species.

17 Rare Plant Linear ROW Protection for Harwood’s Eriastrum

17.1 Applicable Regulations and Management Policies

17.1.1 Desert Renewable Energy Conservation Plan and Land Use Plan Amendment

The LUPA, prepared to implement the Desert Renewable Energy Conservation Plan (DRECP), is applicable only to BLM-administered land in California. The DRECP and LUPA provide a landscape approach to renewable energy and conservation planning in the California desert that streamlines the process for development of utility-scale renewable energy generation and transmission consistent with federal and state renewable energy targets and policies, while simultaneously providing for the long-term conservation and management of special status species and vegetation types. In addition to BLM designated sensitive species, the LUPA identifies additional “Focus” species, which it defines as species whose conservation and management are provided for in the DRECP BLM LUPA.

17.1.2 BLM Manual 6840: Special Status Species Management

This manual provides policy and guidance for conserving species classified as Special Status species by the BLM. BLM Special Status species include species listed or proposed for listing under the federal ESA and species identified by the BLM State Director as requiring special management considerations to promote their conservation and to reduce the likelihood and need for future listing under the ESA.

17.1.3 California Native Plant Protection Act of 1977 (CFGC 1900-1913)

This CFGC law includes provisions that prohibit the taking of listed rare or endangered plants from their natural habitat. The law also includes a salvage requirement for landowners. Furthermore, it gives the CDFW the authority to designate native plants as endangered or rare and provides specific protection measures for identified populations.

17.2 Purpose and Objectives

As the lead federal agency, the BLM released the Draft EIS on August 31, 2018 (BLM 2018), including an appendix providing CEQA documentation, and is currently developing the Final EIS. APMs, BLM-Required BMPs, and CEQA Mitigation Measures (MMs) contained within the EIS require DCRT to prepare and implement a Rare Plant Linear ROW Protection Plan for Harwood's Eriastrum (*Eriastrum harwoodii*).

The Project is required to comply with Conservation and Management Actions (CMAs) from the DRECP LUPA for all Project activities on BLM land in California.

Under the Agency-Preferred Alternative, the BLM would amend the California Desert Conservation Area Plan of 1980, as amended to state:

The Ten West Link Project is authorized to include construction within 0.25-mile of occurrences of Harwood's eriastrum, provided that a Linear Right-of-Way Rare Plant Protection Plan for Harwood's eriastrum is developed and approved by the California State Director. The Rare Plant Linear ROW Protection Plan would meet the DRECP goal of promotion of the ecological processes in the BLM Decision Area that sustain vegetation types of Focus and BLM Special Status Species and their habitat. The Rare Plant Linear ROW Protection Plan would have the objectives of:

> *1. Avoidance of take of Harwood's eriastrum individuals to the maximum extent practical; and*
>
> *2. Avoidance of impacts to Harwood's eriastrum suitable habitat to the maximum extent practical.*

For the purposes of implementing this Rare Plant Linear ROW Protection Plan for Harwood's Eriastrum, "take" is defined as the killing of live plants. Disturbance of the soil seedbank is not considered take, though potential seedbank disturbance will be minimized to the greatest extent practicable. The California BLM State Director would approve the Harwood's Eriastrum Rare Plant Linear ROW Protection Plan prior to ground or vegetation disturbing activities commencing on public lands in California.

APMs and BMPs contained in Appendix 2A of the Draft EIS and summarized below in Section 17.3 of this Harwood's eriastrum Plan, would also apply and reduce the impacts of the Project on BLM special status plant species.

17.3 Avoidance and Minimization Measures

The primary avoidance and minimization measure applicable to this Harwood's eriastrum section and protection of Harwood's eriastrum is APM/BMP BIO-31, which includes the following:

1. Pre-construction surveys would be required for non-agricultural areas in California.
2. Avoid Harwood's eriastrum individuals through micro-siting facilities to the maximum extent practical.
3. Within suitable habitat for Harwood's eriastrum, use overland travel (drive and crush) in lieu of road construction to pad sites to the maximum extent practical.
4. On non-agricultural Public Lands in California, an authorized botanist would be on-site for all construction activities involving surface disturbance or overland travel.
5. Within suitable habitat for Harwood's eriastrum, keep equipment to the minimum necessary to accomplish the work.
6. On public lands in California, avoid establishing features that would interfere with the movement of sand to the maximum extent practical.
7. Laydown and temporary use sites would not be located within suitable habitat for Harwood's eriastrum.
8. On public lands in California, use existing roads or routes to the maximum extent practical.
9. Develop and implement an Invasive Species Management Plan (specific to the rare plant habitat) that the California State Director would approve prior to a notice to proceed for work on public lands in California.
10. No surface disturbance or overland travel would occur within occupied habitat for Harwood's eriastrum from 15 February through the 31 July. This stipulation does not apply to verified, unoccupied habitat. (It is important to clarify that not all suitable habitat is occupied. As defined in the Draft EIS, occupied habitat is classified by the location of a live Harwood's eriastrum plant. Presence/absence surveys conducted at the appropriate time of year [as described in Section 17.5.2 below] may verify that some habitat is unoccupied during a particular year).
11. No take of Harwood's eriastrum individuals would be allowed without California BLM State Director approval.
12. Prepare a Harwood's eriastrum Linear ROW Protection Plan.
13. Project impacts to suitable habitat combined with current impacts shall be limited (capped) to a maximum of one percent of Harwood's eriastrum habitat across all BLM lands included within the DRECP.

Additional APM/BMPs contained within the Final EIS are anticipated to avoid and minimize impacts to Harwood's eriastrum. APM/BMPs anticipated to benefit Harwood's eriastrum are

provided in a bulleted list below. The full text of all APM/BMPs may be found in Appendix 2c of the Draft EIS.

- MM-VEG-CEQA-3: Conduct Focused Surveys for Harwood's Eriastrum
- MM-VEG-CEQA-4: Compensation for Impacts to Special-Status Species and Sensitive Communities
- BIO-01: WEAP
- BIO-02: Biological Monitoring and Preconstruction Survey
- BIO-03: Approved Work Areas
- BIO-04: Environmentally Sensitive Areas and Fencing
- BIO-05: Additional Prohibitions
- BIO-10: Erosion and Dust Control
- BIO-11: Vegetation Management Plan
- BIO-12: Noxious and Invasive Species Control
- BIO-14: Minimizing Vegetation Clearing
- BIO-15: Reclamation and Restoration
- BIO-17: Limit Off-road Vehicle Travel
- BIO-24: Sensitive Plant Surveys
- BIO-31: Treatment of Harwood's eriastrum
- BIO-32: Seasonal Restriction Dates
- BIO-37: Native Plant Collection Prohibition
- BIO-38: Use of State of the Art Technology
- BIO-53: Protection of Dune Vegetation
- BIO-54: Protection of Sand Transport
- BIO-55: Access within Focus and BLM special Status Species Suitable Habitat
- MM-BIO-01: Compensation Plan

17.4 Species Habitat and Occurrence Within the Project Area

Harwood's eriastrum (*Eriastrum harwoodii*), also known as Harwood's woolystar, is the only BLM-designated sensitive species known to be present within the Project area. Harwood's eriastrum is a small, annual forb endemic to California. It grows to 20 centimeters (cm) tall, with densely wooly, linear, threadlike 1.0 to 3.5 cm long leaves. The species blooms from March to June and has small (6.0 to 7.5 millimeter-wide) five-petaled, pale yellow to white flowers (DeGroot et al. 2015).

Harwood's eriastrum grows only on active windblown sand deposits within California. The species has never been documented within Arizona. Potentially suitable habitat occurs in the portions of the Project area on the Palo Verde Mesa, which include the non-agricultural lands in California, which are in or near a series of sand dunes. This dune system relies on free movement of wind-transported sand. Harwood's eriastrum has been documented within

the Project area on the Palo Verde Mesa. As an annual with variable germination rates dependent on rainfall and shifting sand conditions, the abundance and location of Harwood's eriastrum individuals may vary among years reflecting scattered rainfall events as well as shifting sand dune habitat. According to the Draft EIS, surveys of the Project area in 2016 did not locate this species, but during 2017 surveys, 94 Harwood's eriastrum plants were recorded in the Project area. Figure F-7-4, reproduced from Figure 3.4 of the Draft EIS, shows where rare plants were located during 2017 surveys. Other projects have previously documented over 3,000 Harwood's eriastrum plants on the deep sandy soils of the Palo Verde Mesa (Ironwood Consulting, Inc. 2016).

17.5 Implementation

17.5.1 Planning Phase Avoidance and Minimization

The Project's Draft EIS analyzed the cumulative impact of the Project and previous developments on Harwood's eriastrum habitat across all BLM lands within the DRECP in relation to the one percent limit specified within the DRECP-LUPA and in BMP BIO-31. It was concluded that the sum of impacted habitat from the Project and other evaluated projects is below the one percent limit. The DRECP modeled 288,404 acres, including most of the Palo Verde Mesa and nearby Chuckwalla Valley, as the distribution of Harwood's eriastrum on BLM lands addressed by the DRECP-LUPA. According to the Draft EIS, all Project-related ground disturbance activities were calculated for each Project Alternative, using the DRECP habitat model. Project disturbance would depend on which alternative is selected, with the most impactful alternative resulting in disturbance of 48.2 acres of Harwood's eriastrum habitat (only 0.017 percent of the total modeled habitat range-wide). However, this estimate of Project impact acreages does not consider additional reductions in disturbance that would be achieved through micro-siting. Other BLM-approved projects have occurred on the Palo Verde Mesa and nearby Chuckwalla Valley, including the Colorado River Substation, Desert Sunlight Solar Farm, and Genesis Solar Energy Project. A total of 313.6 acres of modeled Harwood's eriastrum habitat has been impacted by these past projects (Colorado River Substation 77.3 acres; Desert Sunlight Solar Farm 0 acre; Genesis Solar Energy Project 236.3 acres). This total acreage of impacted DRECP-modeled habitat would increase to 361.8 acres of DRECP-modeled habitat upon construction of the Project. There is a total of 103,958 acres of modeled Harwood's eriastrum habitat in the Chuckwalla Valley; all projects in Chuckwalla Valley combined result in impacts to 0.35 percent of DRECP-modeled Harwood's eriastrum habitat within Chuckwalla Valley, or 0.12 percent of modeled habitat range-wide.

Several Project design features will minimize impacts to Harwood's eriastrum habitat. Laydown yards or staging areas will not be located on the Palo Verde Mesa or within potential Harwood's eriastrum habitat elsewhere in California. During the initial micro-siting of structures, pulling and tensioning sites, and access routes, previously documented locations of Harwood's eriastrum (e.g., from 2017 Project surveys, California Natural Diversity Database data, or additional preconstruction surveys) will be avoided to the greatest extent practicable. To the extent feasible, final micro-siting (e.g., overland access routes) will be adjusted based on the most recent preconstruction Harwood's eriastrum surveys. To avoid or minimize construction of new roads in potential Harwood's eriastrum habitat, existing roads and overland travel will be used to the greatest extent practicable. If deemed appropriate, Project access (outside of the February 15-July 31 growing season) through recently occupied habitat may utilize timber mats to decrease potential soil compaction and seedbank disturbance.

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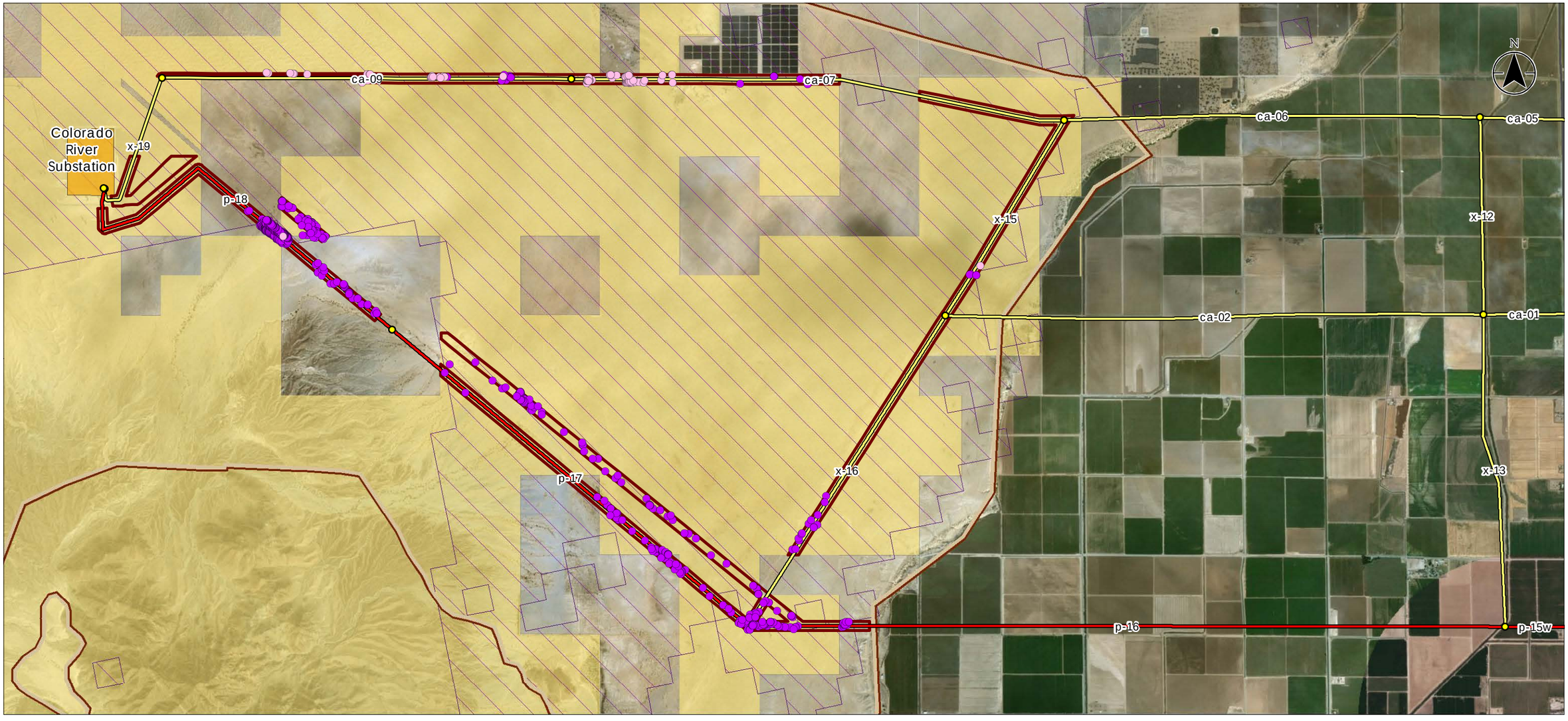

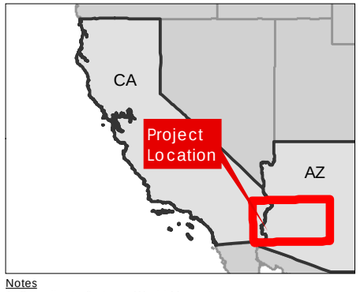

Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Rare Plant Surveyed Points - Transcon Environmental 2017
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Substation
- Harwood's Eriastrum Surveyed Points (Transcon 2017)
- Harwood's Milkvetch Surveyed Points (Transcon 2017)
- Rare Plant Survey Area
- Harwood's Eriastrum - Species Distribution Model (DRECP)
- Sand and Dune Systems (DRECP)

Land Status
- Bureau of Land Management
- Private

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Figure F7-4
Reproduced from Figure 3-4 of the DEIS

Ten West Link
Harwood's Eriastrum Survey Results and DRECP-Modeled Habitat.

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Though the DRECP-LUPA maps most of the Palo Verde Mesa as potential Harwood's eriastrum habitat (Figure F-7-4), the Project's Draft EIS states that active sand transport is limited primarily to a corridor north of the Colorado River Substation. This corridor is about 1.0-mile-wide extending approximately five miles to the east, consistent with the location of highest concentrations of Harwood's eriastrum in the Project area, based on previous surveys. This is illustrated in Figure F-7-5, which is reproduced from Figure 3-5 of the Draft EIS. In accordance with BMP-BIO-53 and BMP-BIO-54, within aeolian (wind-transport) corridors that transport sand to dune formations, activities will be designed and operated to facilitate the flow of sand. Any access roads constructed in dune habitat would be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transport. Structure design and micro-siting will take into account the direction of sand flow and, to the extent feasible, structures will be built and aligned to allow sand to flow through the site unimpeded. If construction of fencing is necessary, it will be designed to allow sand to flow through and not be trapped.

17.5.2 Invasive Species Management

Maintenance of sand dune habitat is dramatically affected by the presence of the non-native, invasive Sahara mustard, and Russian thistle, which in some years may virtually shut down aeolian sand migration. The Noxious and Invasive Weed Management Section (Section 18) describes the approach that will be used to control and manage these and other invasive plant species with potential to degrade sand dune habitat.

17.6 Preconstruction Surveys

Per MM VEG-CEQA-3, prior to conducting any activities that may modify vegetation, surveys for Harwood's eriastrum will be conducted by qualified botanist(s) in all non-agricultural areas in California where Project activities will result in vegetation disturbance (e.g., clearing, mowing, or ground-breaking). The qualified botanist will be approved by the CPUC, BLM, and CDFW. If possible, these surveys will be conducted concurrent with surveys for other special status plant species (as required by APM/BMP-BIO-24 and MM VEG-CEQA-2). During the floristic surveys every plant taxon that occurs on site will be identified to the taxonomic level necessary to determine species listing and status. Surveys will adhere to the following protocols:

- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plant (USFWS 2000).
- Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018).
- Survey Protocols Required for National Environmental Policy Act/ESA Compliance for BLM Special-Status Plant Species (BLM 2009).

To maximize the likelihood of locating Harwood's eriastrum, if present, surveys will be conducted during the appropriate bloom season. The general blooming season for Harwood's eriastrum is March to June (DeGroot et al. 2015), but the optimal survey timing for this and other sensitive species may vary from year to year, depending on annual variations in weather. Prior to surveying, the BLM botanist (Palm Springs Field Office) will be consulted regarding optimal timing for surveys of Harwood's eriastrum and other special status plant species. Because this annual species has highly variable germination rates, dependent on rainfall, plant locations may shift among years reflecting scattered rainfall events. Therefore, surveys from past years may not accurately reflect distribution of

individual plants in the current year. If construction in potential Harwood's eriastrum habitat is scheduled to occur between February 15 and July 31, preconstruction surveys would occur during the same season as construction, to determine occupancy. If individuals and/or populations of Harwood's eriastrum are determined present within the Project area during pre-construction floristic surveys, Project activities shall be reduced and minimized to avoid impacts to the extent feasible, as described below in Section 17.7.

A pre-construction Harwood's Eriastrum Floristic Survey Report will document the methods and results of the surveys and will document measures to avoid, minimize, or mitigate for Harwood's eriastrum. The report will be submitted to the appropriate federal and state agencies. The floristic survey results will also be documented in this Vegetation Management Plan.

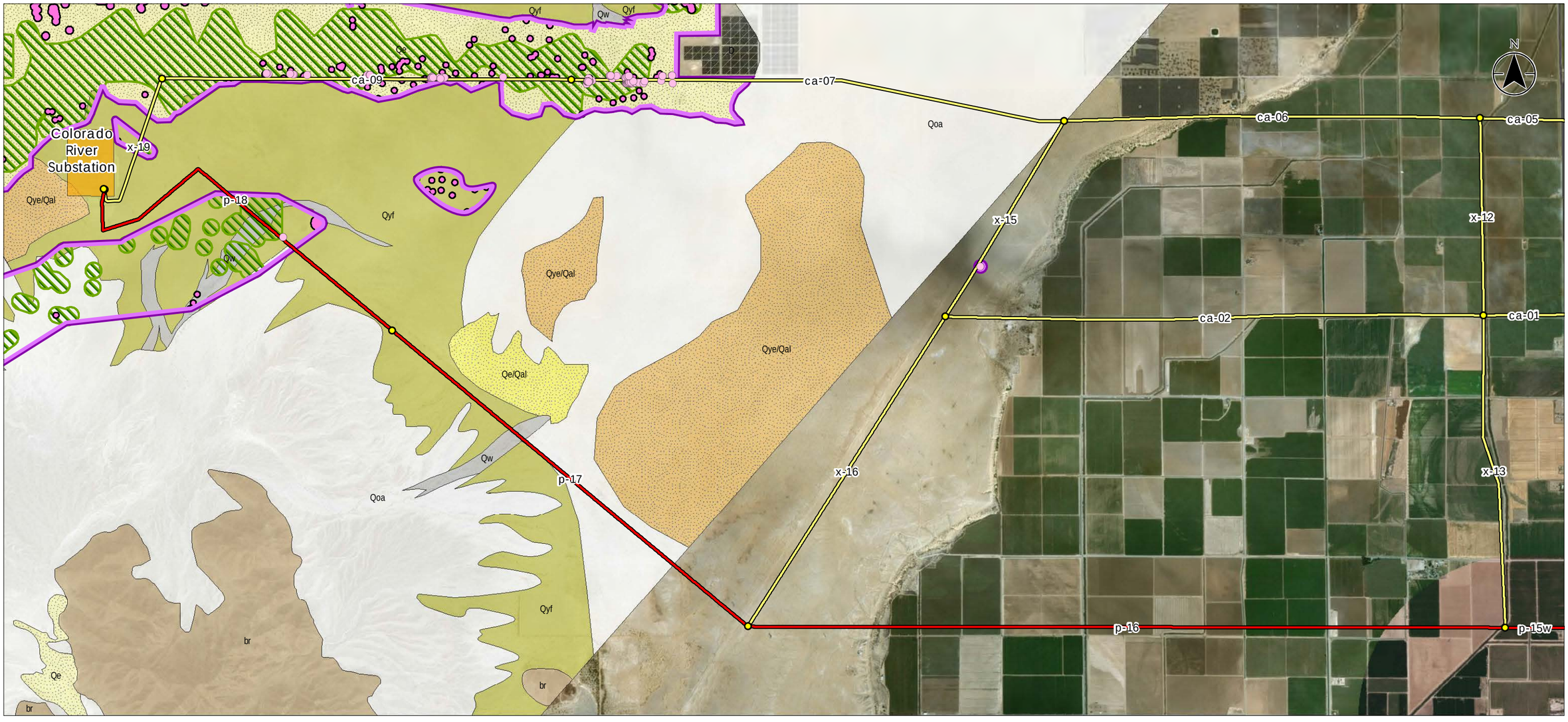
17.7 Construction Phase Avoidance and Minimization

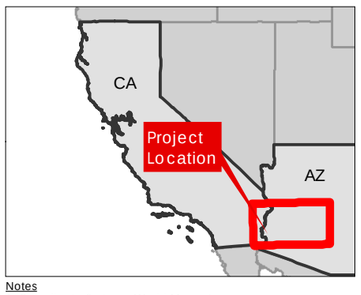
Vegetation management will be implemented during construction as required by MM-VEG-CEQA-1 and described in this Plan. The Vegetation Management Plan includes Succulent Management (Section 15), Special Status Plant Transplantation and Compensation (Section 16), and Noxious Weed and Invasive Species Management (Section 18).

Since Harwood's eriastrum is an annual, individuals will be avoided to the maximum extent feasible through micro-siting facilities after identification of current populations. No surface disturbance or overland travel will take place within occupied habitat for Harwood's eriastrum from February 15 through July 31. This stipulation does not apply to unoccupied habitat, as verified during same-year surveys. Occupied habitat is defined as the location of a live Harwood's eriastrum plant. Upon the death and desiccation of the annual plant, or the absence of germination due to lack of precipitation, the area would be included as suitable habitat but would not be considered occupied habitat. If construction will occur outside of, but adjacent to occupied habitat, appropriate signage, barrier fences, and/or stakes would be installed at the edge of the approved work area or around the occupied habitat to minimize the possibility of inadvertently encroaching onto occupied habitat. A site-specific buffer zone will be developed to prevent direct or indirect disturbance to Harwood's eriastrum from construction activities, erosion, inundation, or dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands and the plant's ecological requirements to be specified by the designated qualified biologist/botanist (see Section 17.5.4. The minimum buffer will be 50 feet from the perimeter of the occupied habitat or the individual. If a smaller buffer is necessary due to other Project constraints, then DCRT will develop and implement site-specific monitoring and put other measures in place to avoid species impacts.

Prior to commencing onsite work all construction personnel will attend a Worker Environmental Awareness Program, which will educate the participants regarding pertinent environmental issues and stipulations to be implemented during construction.

Within suitable habitat, construction equipment will be kept to the minimum necessary to accomplish the work. In these areas, construction will use drive and crush access wherever possible to minimize disturbance to potential seedbank areas. Stockpiling of material would be allowed only within established work areas and will not be located within suitable habitat for Harwood's eriastrum. Vehicles and equipment would be parked on pavement, existing roads, and previously disturbed areas within identified work areas or access roads, and to the extent practicable, new routes outside of those Project approved will not be established that interfere with Harwood's eriastrum habitat or with the movement of sand.





Notes
1. Coordinate System: World Mercator
2. Data Source(s): Project data - HDR; Land Status - BLM; Aeolian System Mapping - Lancaster 2014
3. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Route Segment Node
- Proposed Action*
- Alternative Route Segment
- Substation
- Harwood's Eriastrum Surveyed Points (Transcon 2017)
- Boundary of Presumed Harwood's Eriastrum Habitat

California Natural Diversity Database (CNDDB) Species
- Harwood's Eriastrum
- Mojave Fringe-toed Lizard

Aeolian System Mapping for the DRECP, California Geological Survey
- D - Developed areas
- Qe - Active windblown deposits >1.5 m thick
- Qe/Qal -Active windblown deposits < 1.5 m thick
- Qoa -Pleistocene alluvial deposits
- Qw -Alluvial wash deposits
- Qye/Qal - Stabilized windblown deposits
- Qyf - Alluvial fan deposits
- br - Bedrock

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Figure **F7-5**
Reproduced from Figure 3-5 of the DEIS
Ten West Link
Harwood's Eriastrum Occurrence Records and DEIS-Modeled Presume Habitat.

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17.8 Construction Monitoring

On non-agricultural public lands in California, a qualified botanist (approved by CPUC, BLM, and CDFW) will be onsite for all construction activities involving surface disturbance or overland travel. The onsite botanist will reassess each area for presence of Harwood's eriastrum individuals and monitor construction activities to ensure proper implementation of Harwood's eriastrum avoidance and minimization measures. The onsite botanist will provide brief weekly reports to the BLM botanist via email and, as necessary, keep the BLM botanist apprised of any emerging issues relevant to Harwood's eriastrum.

In the event that avoidance of one or more Harwood's eriastrum individuals is deemed particularly difficult or impractical, the California State Director would be consulted prior to any activity that could result in the take of the species. No take of Harwood's eriastrum individuals would be allowed without prior California State Director approval.

17.9 Post-construction Avoidance, Minimization, and Mitigation

In conformance with MM-BIO-01, a Compensation Plan will be prepared. The Compensation Plan will include calculations of compensation ratios and mitigation acreages for loss of habitat for any biological resources requiring additional mitigation. If take of Harwood's eriastrum during construction is unavoidable and, with permission from the California State Director, live plants are killed, the Compensation Plan would outline compensation requirements based on the estimated number of plants taken.

A Reclamation, Vegetation, and Monitoring Plan has been developed and included in the POD as Appendix L-1. Pending approval by BLM, that plan will be implemented for construction, operation and maintenance of the Project. The Reclamation, Vegetation, and Monitoring Plan includes protocols and methods for the revegetation of all sites disturbed during construction for which revegetation will not conflict with safe operation of the transmission line, and restoration of disturbed areas to the extent practicable, given the arid desert environment. The Reclamation, Vegetation, and Monitoring Plan provides detailed methods for surveying and characterizing vegetation in disturbed areas before construction, topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. To the extent practicable, it is designed to reduce impacts on Special Status species, including Harwood's eriastrum. Additionally, topsoil stripped in Harwood's eriastrum habitat will be stored separately from other topsoil and replaced during reclamation to facilitate revegetation, should seeds exist.

The Noxious Weed and Invasive Species Management Section (Section 18 of this Plan) describes the approach that will be used before, during, and after construction to control and manage invasive plant species with potential to degrade sand dune habitat.

During the operation and maintenance of the Project, to the extent practicable, surface disturbance will be avoided between February 15 and July 31 within occupied or potentially occupied habitat of Harwood's eriastrum. This stipulation does not apply to unoccupied habitat, as verified during the current year's surveys. Occupied habitat is defined as the location of a live Harwood's eriastrum plant. Upon the death and desiccation of the annual plant, or the absence of germination due to lack of precipitation, the area would not be considered occupied habitat.

In the event that avoidance of occupied or potentially occupied Harwood's eriastrum habitat is deemed to be inconsistent with the operational and maintenance needs of the Project, the California State Director would be consulted prior to any activity that could result in take of the species. No take of Harwood's eriastrum individuals would be allowed without prior California State Director approval. An exception to this rule would be made in cases of emergency, where immediate access is necessary for safety reasons, and the necessary timing precludes the ability to contact the California State Director prior to access. As Harwood's eriastrum is an annual plant, transplantation of live plants would not be practical or recommended. However, if take of Harwood's eriastrum is unavoidable and approved by the California State Director, an effort will be made to collect seeds from the impacted plants or from the nearest practical Harwood's eriastrum populations and the collected seeds would be used to reseed the affected area during reclamation. Additionally, any loss of occupied habitat will be compensated offsite at a ratio of 3:1, as described in the Compensatory Mitigation Plan (POD Appendix B-3).

18 Noxious and Invasive Weed Management

18.1 Introduction

This Noxious and Invasive Weed Management section sets forth the methods DCRT and its Construction Contractor(s) will undertake to prevent, mitigate and control the spread of noxious and invasive weeds during construction and operation and maintenance of the Ten West Link.

Federal Invasive Species Executive Order 13112 defines an invasive plant as an alien, non-native, species whose introduction causes or is likely to cause economic or environmental damage or harm to human health (United States Federal Register 1999). The BLM defines a noxious weed as a plant that interferes with management objectives for a given area of land at a given point in time. A noxious weed is any plant designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife or property. Noxious weeds are opportunistic plant species that readily flourish in disturbed areas, thereby preventing native plant species from re-establishing communities.

Road construction and other ground-disturbing activities associated with construction, operation and maintenance of the Project could potentially allow noxious weed species to establish in new locations or for a pre-existing noxious weed location to increase in extent and/or density. Prevention, treatment, monitoring, and documentation measures, as described in this section, would reduce the probability of this occurring as a result of the Project. This section describes the status of noxious weed species in the Project area, the regulatory agencies responsible for the control of noxious and invasive weeds, and steps that DCRT and its Construction Contractor(s) would take to prevent the establishment and spread of noxious weed species due to Project construction, operation and maintenance activities. Updates to this section would include information on locations of weed problem areas within the Project footprint and proposed treatment methods as applicable.

18.1.1 Purpose

The purpose of this section is to describe and recommend methods for managing noxious weeds during and after construction of the Project that would meet federal and state regulatory requirements and guidelines for noxious weed management. These methods are

described in this section as follows: 1) plan purpose, goals, and objectives; 2) noxious weed inventory; 3) management practices and agency requirements; 4) the use of herbicides; and 5) monitoring.

The focus of noxious weed control efforts is to prevent establishment of new infestations and to prevent existing infestations from expanding (as documented by pre-construction surveys) as a result of Project activities. DCRT is only responsible for the control of noxious weeds that are a result of construction-related, surface-disturbing activities. DCRT is not responsible for noxious weed species that occur adjacent to Project areas or for controlling or eradicating a species that were present prior to the Project. Eradication of these infestations is not the responsibility of DCRT and would not be attempted, although containment would be the goal where required by state regulations. The control of invasive species (not classified as noxious weeds) is addressed in Appendix L-1, Reclamation, Vegetation, and Monitoring Plan.

18.1.2 Goals and Objectives

The goals of this section are to: 1) prevent the spread of existing noxious weeds; and 2) avoid noxious weed invasion into new sites during and following construction of the Project. This would be accomplished by executing agency requirements to:

- Prevent and manage the spread of noxious weeds.
- Implement weed control measures for the Project.
- Use herbicides safely.
- Monitor noxious weed management effectiveness.

Information gathered during pre-construction surveys and provided by land management agencies may be used to monitor and control the spread of noxious weeds on the Project ROW. Proposed noxious weed management measures are listed in this document along with relevant regulatory requirements.

18.2 Regulatory Compliance

The following provides a brief overview of federal and state legislation and regulatory compliance applicable to biological resources in the Project area that were considered in the development of this section.

18.2.1 All Lands

Relevant regulations applicable to all lands include:

- Noxious Weed Act of 1974 - Public Law 93-629 (7 U.S.C. § 2801 et seq.; 88 Stat. 2148).
- United States Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act (7 CFR Part 136, 40 CFR Parts 140-189).
- Clean Water Act Sections 303(d) and 404.
- ESA of 1973, as amended Section 7(a)(2).

- USDA State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act – 7 CFR Part 201.
- Noxious Weed Control and Eradication Act of 2004, 7 U.S.C. §§7781-7786, Subtitle E.
- Plant Protection Act of 2000, 7 U.S.C. § 7701 et seq. (supersedes the Federal Executive Order 13112 of February 3, 1999, on Invasive Species).
- National Invasive Species Act of 1996, 16 U.S.C. § 4701.
- Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, 16 U.S.C. § 4701.

18.2.2 Bureau of Land Management

Relevant regulations applicable to BLM lands include:

- Federal Land Policy and Management Act Sec. 101(a)(8).
- United States Department of Interior Manual 517 DM 1—Integrated Pest Management Policy.
- Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement.
- BLM Integrated Vegetation Management Handbook H1740-2.
- BLM Terms and Conditions of ROW Grants and Temporary Use Permits 43 CFR Part 2881.2.
- BLM Field Office Resource Management Plans.

18.2.3 Bureau of Reclamation

Relevant regulations applicable to Bureau of Reclamation lands include:

- Federal Land Policy and Management Act Sec. 101(a)(8).
- United States Department of Interior Manual 517 DM 1—Integrated Pest Management Policy.

18.2.4 State of Arizona

- Arizona Revised Statutes, Title 3 Agriculture: Chapter 2, Article 1 – Dangerous Plant Pests and Diseases; Chapter 2, Article 5 – Pesticides; Chapter 2, Article 6 – Pesticide Control; Chapter 2, Article 6.1 – Integrated Pest Management Program.

18.2.5 State of California

- California Food and Agriculture Code: Division 4, Part 4 – Weeds and Pest Seeds; Division 6 – Pest Control Operations; Division 7, Chapter 2 – Pesticides and Chapter – Restricted Materials.

18.2.6 Federal- and State-Listed Noxious Weeds

Table F-7-5 identifies the 15 noxious weed species known to be present in the BLM planning areas which are crossed by the route.

TABLE F-7-5 FEDERAL AND STATE-REGULATED NOXIOUS WEEDS FOUND IN OR NEAR THE BIOLOGICAL STUDY AREA

Scientific Name	Common Name	Federal Designation	Arizona Designation[1]	California Designation
Acroptilon repens	Russian knapweed	-	Prohibited; Restricted	Noxious
Alhagi maurorum	Camelthorn	-	Prohibited; Restricted	Noxious
Arundo donax	Giant-reed	-	-	Noxious
Carduus nutan	Musk thistle	-	-	Noxious
Centaurea diffusa	Diffuse knapweed	-	Prohibited; Restricted	Noxious
Centaurea solstitialis	Yellow star thistle	-	Prohibited; Restricted	Noxious
Cuscuta spp.	Dodder	-	Prohibited; Restricted	Noxious
Eichhornia crassipes	Water hyacinth	-	Prohibited; Restricted	-
Halogeton glomeratus	Halogeton	-	Prohibited; Restricted	Noxious
Hydrilla verticaillata	Hydrilla	-	Prohibited	Noxious
Onopordum acanthium	Scotch thistle	-	Prohibited; Restricted	Noxious
Salvinia molesta	Giant salvinia	Noxious	Prohibited	-
Salsola tragus	Prickly Russian thistle	-	-	Noxious
Tamarix spp.	Saltcedar	-	-	Noxious
Tribulus terrestris	Puncturevine	-	Prohibited; Regulated	Noxious

[1] Regulated - may be controlled to prevent further infestation or contamination; Restricted - shall be quarantined to prevent further infestation or contamination; Prohibited - prohibited from entering the state.
Source: BLM 2018.

18.2.7 Responsible Parties

DCRT will have the overall responsibility of directing and monitoring noxious weed management efforts for the Project. The Construction Contractor(s) may retain the services of a company who specializes in noxious weed management to implement the protocols identified in this section during construction. It is anticipated that post-construction noxious weed monitoring would occur concurrently with the practices outlined in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan as appropriate.

18.3 Noxious Weed Management

The management of noxious weeds will be considered throughout all stages of the Project including:

- Educating all construction personnel regarding the identified problem areas and the importance of preventive measures and treatment methods.

- Specific measures to prevent the spread of noxious weeds during construction and operation and maintenance activities.
- Preconstruction and post-construction treatment methods to be applied to areas where noxious weeds are present.

The following is a description of the measures that may be required for noxious weed management as directed by the BLM Authorized Officer or State Quarantine Officer. Applicable measures will be agreed on prior to the onset of any ground disturbing activities, and this Noxious and Invasive Weed Management Plan will be modified accordingly. The APM with regards to noxious weed management is

APM-BIO-12: Noxious and Invasive Species Control (Compliance with CMALUPA-BIO-6, 10 and 11) – A Noxious Weed Control Plan would be developed, approved by the BLM, and implemented prior to initiation of ground disturbing activities. That Plan would identify noxious and invasive species to be addressed in the Project Area, describe measures to conduct preconstruction weed surveys, reduce the potential introduction or spread of noxious weeds and invasive species during construction, and monitor and control weeds during operation of the transmission line. It would be designed to minimize impacts on special status species to the extent practicable. Coordination with resource agencies regarding invasive plant species would be conducted before construction. BMPs would include use of weed-free straw, fill, and other materials; requirements for washing vehicles and equipment arriving on site; proper maintenance of vehicle inspection and wash stations; requirements for managing infested soils and materials; requirements and practices for the application of herbicides; and other requirements in applicable BLM Weed Management Plans.

CEQA Compliance

The following MMs will ensure compliance with CEQA in the California portions of the Project:

- MM-BIO-CEQA-1
- MM-VEG-CEQA-1

18.3.1 Identification of Problem Areas and Education

Prior to the initiation of construction activities, all construction personnel will be instructed on the importance of controlling noxious weeds through the Worker Environmental Awareness Program. As part of start-up activities, the Construction Contractor(s) will provide information and training to all personnel regarding noxious weed management. The importance of preventing the spread of noxious weeds in areas not infested and controlling the proliferation of weeds already present will be emphasized. Prior to construction, areas of concern previously identified during the weed survey will be flagged by the Construction Contractor(s) and reviewed by the CIC. This flagging will alert construction personnel to the presence of noxious weeds and prevent area access until noxious weed management control measures, as described below, have been implemented.

The type and locations of Project-specific noxious and invasive weed species are unknown as of right now. Noxious and invasive plant surveys will be conducted May to October 2019 on BLM administered lands for the Final Route. Once the noxious and invasive weed

species are known, specific pesticide use will be submitted for treatment in a BLM Pesticide Use Proposal and approved prior to use.

CEQA Compliance

The following MM will ensure compliance with CEQA in California portions of the Project: MM-VEG-CEQA-2.

18.3.1.1 Weed Management Personnel Requirements

Weed Management actions shall be carried out by a weed management specialist with the following qualifications:

- Training and experience in native plant taxonomy/identification.
- Training and experience in field ecology and plant community mapping.
- Possession of a Commercial Applicator's License for pesticides from the Arizona Department of Agriculture and/or California Department of Food and Agriculture (if chemical control is needed).
- Training in weed management or Integrated Pest Management with an emphasis in weeds.
- Experience in coordination with agency and private landowners.
- Attendance at a BLM-approved noxious weed training course.

18.3.2 Other Specific Stipulations and Methods

18.3.2.1 Invasive Species Management within Harwood's Eriastrum Habitat

The BLM sensitive species Harwood's eriastrum inhabits sand dune habitat along the western end of the Project area. This habitat is often impacted by noxious weeds as well as other non-native, invasive weeds such as Sahara mustard. Within this habitat area, efforts will be made to avoid introduction and spread of invasive weeds, regardless of its status as a noxious weed, as described previously. Implementation of various mitigation APMs and BMPs would attempt to control direct and non-direct impacts to native desert plant communities and special status plants. Application of the mitigation measures defined in this plan would ultimately minimize the potential introduction of noxious and/or invasive weeds in these habitats.

During any pre- and post-construction monitoring for weeds, any identified weed infestation areas that may need treatment within Harwood's eriastrum habitat would be surveyed for the presence of Harwood's eriastrum individuals. If any individuals of Harwood's eriastrum are found, control methods would avoid take of Harwood's eriastrum by careful spot treatment of non-native, invasive species and/or temporal avoidance of the Harwood's eriastrum growing season (approximately February 15 – July 15), and would avoid methods with potential to kill or otherwise impact the Harwood's eriastrum seedbank within the soil. Chemical treatment would only be applied if absolutely necessary and if approved by BLM.

18.3.2.2 Preventative Measures

The following preventative measures will be implemented to prevent the spread of noxious weeds during construction activities, reclamation and rehabilitation efforts, and maintenance operations associated with the Project. Detailed information regarding reclamation, along with the control of invasive plant species is provided in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

All equipment, tools, and tires shall be properly cleaned and decontaminated of noxious weeds before entering the Project region. Prior to construction activities (e.g., including clearing, grubbing), a Weed Decontamination Form (Attachment D) will be submitted to the Project Designated Biologist. The Weed Decontamination Form shall verify that construction related equipment used by the contractor(s), has been cleaned and deemed weed free, before entering the Project region.

These preventative measures are to be applied on a case-by-case basis, where applicable and necessary, at the discretion of the BLM, CIC, and the Construction Contractor's environmental monitors (weed specialists).

CMA-LUPA-BIO-10 (California only): Standard Practices for Weed Management (portions) - Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species. Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers. Reestablish native vegetation quickly on disturbed sites.

18.3.2.3 Control Measures

DCRT and their Construction Contractor(s) will implement noxious weed control measures in accordance with existing regulations and BLM requirements. Control measures will be based on species-specific and site-specific conditions (e.g., proximity to water or riparian areas, agricultural areas, and season) and will be coordinated with the BLM Authorized Officer or his/her designated representative, the CIC, and the Construction Contractor's weed management specialist. If existing populations are currently under treatment by the BLM or other individuals, DCRT and their Construction Contractor are encouraged to engage in cooperative management efforts to treat the noxious weeds associated with the Project area. In the event new noxious weed populations are identified on the Project in the future, the protocols and methods outlined in this section will be followed. The weed management specialist contracted by the Construction Contractor(s) shall provide a detailed control methodology for each noxious weed species documented. The BLM Authorized Officer will review and approve this Noxious and Invasive Weed Management section prior to implementation. Control measures may include one or more of the following methods prior to implementation of reclamation actions.

Mechanical

Mechanical methods rely on cutting roots with a shovel or other hand tools or equipment that can be used to mow or disc weed populations. This type of methodology is useful for smaller, isolated populations in areas of sensitive habitats or if larger populations occur in agricultural lands where tillage can be implemented. Some rhizomatous plants can spread by discing or tillage and implementation will be species specific. If such a method is used in areas to be reclaimed, subsequent seeding will be conducted to re-establish a desirable

vegetative cover that will stabilize the soils and slow the potential re-invasion of noxious weeds.

Wash Stations

This section summarizes the concepts for removing seeds from vehicles and equipment to control the spread of noxious weeds and invasive species. One method of removing weeds is to use air compressors or an air knife to blow the weeds off vehicles. Another method of removing weeds is to use water to wash away the weed seeds from equipment before it leaves a weed-infested area. This will prevent transporting and spreading seeds and spores. Seeds and spores are found in vegetation, dirt, and mud clinging to the undercarriage or underbody parts (such as wheels, wheel wells, running boards, drive train, and bumpers). Equipment and technologies related to the use of weed wash stations that may be employed for the Project are described below: runoff containment, spraying equipment, water supply, filtration, water treatment, and pumping equipment.

Runoff Containment - Even when containment is used, invasive seeds may be blown beyond the containment system during washing. To mitigate this, the Construction Contractor will inspect wash sites regularly and treat for weeds as necessary. Wastewater containment can be accomplished several ways. Four typical forms of containment discussed below are consistent with BMPs.

- Geotextile cloth – The cloth captures large particles in the permeable barrier and allows water to percolate back into the soil. Because most seeds are larger than 200 microns, the cloth prevents or reduces seed transplantation at the loading area. Geotextile cloth is made of a polycarbonate fiber with a natural affinity for hydrocarbons, which prevents oil or grease from draining into the soil.

- Geotextile lined rock pits – These pits are a 10-foot by 10-foot area of bull-rock or smaller that is underlain by geotextile. When weed wash stations are decommissioned, the rock is removed from the pit in a manner that allows treatment with herbicides. The rock and geotextile will be tagged as weed infested and disposed of properly. Records are kept of all herbicides used, treatment dates, target species treated, and progression of infestation areas.

- Flexible mat – Flexible mats come in many sizes and styles. They serve as portable berm systems to contain wash water and debris. They are a durable, chemical-resistant rubber material. Some models have berms that are permanently attached to the perimeter, while others have removable inserts. Permanent berms on flexible mats can make storage difficult. One plain rubberized mat has polyvinyl chloride sewer pipe fitted under the sides with foam cushions under the approach and departure ends. Prior to installation, lay geotextile or similar cloth underneath to prevent sharp rocks from penetrating the mat. The plain mat rolls or folds up for handling and storage.

  Flexible mats may tear, but onsite repairs are easy. It is recommended that conveyor belting in the wheel tracks be used to prevent punctures or tears. Flexible mats, and the materials used to form containment berms, can be installed by two people. The material is easily transported in a 1/2- to 3/4-ton truck. Low-ground-clearance vehicles can be accommodated with this system. One problem with this system is that flexible mats may create sludge puddles that vehicles track through, picking up the just washed off mud. Flexible mats require workers to bend over more often than when using an elevated rack system to wash vehicles.

- Elevated washrack: Some manufacturers build portable elevated wash racks. One option is a wash rack with panels in 10-, 12-, and 14-foot widths. The eight-foot-long panels are placed side by side to the desired length. They are designed to carry axle loads of 12 tons, and need support on just two sides. Another option is a similar modular wash rack with six- by eight-foot panels designed to handle 15,000-pound wheel loads. Both systems can handle wheeled or tracked equipment, and the runoff is collected in the center or in a gutter alongside. Raised panels make it easier to wash the underbody. Containment walls are available that allow access to both sides of the vehicle and reduce overspray when the walls are set in a staggered position. Washracks can have automatic sprayers or may be operated manually.

Spraying Equipment - Two methods of spraying are standard in the vehicle-and equipment-washing installations: high pressure with low volume and low pressure with high volume. High pressure is above 1,000 pounds per square inch (psi), and high volume is more than 10 gallons per minute (gal/min). In both categories, hand-held (wand) systems and automated systems are available. Although simplicity of operation might favor an automated system, reliability, effectiveness, efficiency, and economy favor manual sprayers.

It is recommended that heavy debris first be removed manually by trowel, shovel, or brush before the vehicle returns to the loading area. All remaining debris can be washed off before the equipment is loaded. Some manual follow-up spray cleaning should accompany automated systems use.

- High-Pressure, Low-Volume Spraying - Many household and industrial pressure washers have outputs of up to 4,000 psi. Flows generally range from two to five gal/min and with attachments, these high-energy spraying systems can remove the most tenacious debris. Models are available at home improvement stores. The low-water consumption reduces supply water and wastewater needs. However, these high-pressure sprayers produce large amounts of debris scatter and overspray.

- Low-Pressure, High-Volume Spraying - The one-inch combination barrel nozzle is particularly effective for equipment washing. It uses 13 gal/min at 50 psi when adjusted for a narrow cone spray pattern. A one- inch ball shutoff ahead of the nozzle minimizes spray pattern adjustments and enables instant shutoff. The long spray range and low-pressure coverage minimizes injury. The combination barrel nozzle requires a high-water volume compared to other high-pressure washing systems.

- Undercarriage Spray Bars - Undercarriage spray bars (and other somewhat automatic systems) use lower pressure and higher flow. The number, size, nozzle shape or holes in a spray bar, and water pressure determine water-use rate. Spray bars fabricated from pipe with threaded ports and individual nozzles have many spray patterns.

The Construction Contractor will select the appropriate spraying equipment based on the needs of the Project.

Water Supply - The Construction Contractor will select and provide water and water disbursing equipment as necessary for Project needs. Water trucks are typical and range from 1,000 to 4,000 gallons in general. Water would be obtained from private wells and/or municipal supplies with permitted and allocated water rights. Collecting and recycling of water is an option, especially with automated sprayers.

Filtration - If wash water will be recycled and reused in any wash system, filtration will be used to remove invasive seeds from the used wash water and prevent vehicle cross-contamination. In addition, water treatment may be necessary to kill small bacteria, fungi, or neutralize other contaminants. Before dumping in a sanitary sewer system, wastewater often requires filtration or treatment. Several types of water filters are suited for this purpose. Often, filter technology developed for agriculture (irrigation), industrial waste treatment, and household swimming pools can be adapted to wash-station water treatment. Filter types include: gravity, centrifugal, screen, disk, bag, cartridge, and particle media (sand).

All filters have limitations regarding the particle size they can trap. Most weed seeds exceed 100 microns, and most fungal spores exceed five microns. Filtration below 10 microns is possible but not practical at higher flows in heavily contaminated water with a portable system. Most filtration systems incrementally reduce particle size by stages. The first stage might be a coarse bag filter and/or a settling tank. Other stages could be used depending on the final particle size to be removed and the systems flow rate.

Pumping Equipment - Water trucks, water trailers, and portable wildfire pumps could provide primary spray or recovery pumps for wash systems. Water trucks can draft and pump simultaneously without drawing from their reservoir; however, some water trucks have a bypass line that constantly sends a small amount of process water back to the freshwater tank. For that reason, water truck pumps are not recommended for drafting unless they are drafting from a postfilter sump.

Spraying, recovering, and filtering operations require pumps. A wash system has at least two pumps – a sump pump and a pressure pump – and, depending on filtration methods for water recycling, a third pump for the filters.

Conservation Management Action

The following CMA will be applied to this Project. CMA-LUPA-BIO-10 is the Project requirement and the runoff containment, etc., described above is how the weed washing will be mitigated.

CMA-LUPA-BIO-10 (California only): Standard Practices for Weed Management – Consistent with BLM state and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:

- Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.
- Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.
- Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds.
- Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.
- Reestablish native vegetation quickly on disturbed sites.

- Monitor and quickly implement control measures to ensure early detection and abatement of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas.

- Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.

Behavioral

Behavioral control methods rely on preventative education of the public and construction, operation, and maintenance personnel. Behavioral control of noxious weeds can also include the minimization of vehicular travel through areas of known populations. Noxious weed populations identified during surveys or by BLM/county weed control officials will be cordoned off (except where access for construction or maintenance is required) to avoid spreading seed or plant materials.

Biological

Biological control involves using living organisms (insects, diseases, livestock) to control noxious weeds to achieve management objectives. Many noxious weed species have been introduced recently into North America and have few natural enemies to control their populations. The biological control agent is typically adapted to a specific species and selected for their ability to attack critical areas of the plant that contribute to its persistence. The use of biological control methods is not expected for this Project.

Chemical

Chemical control can effectively abate noxious weeds through use of selective herbicides. Pesticide treatment can be temporarily effective for large populations of noxious weed where other means of control may not be feasible. Before construction, only pesticides approved by the BLM will be applied to the identified noxious weed populations on BLM administered land to reduce their spread. Pesticide applications will be controlled, as described in Section 18.5 – Pesticide Application, Handling, Spills, and Cleanup, to minimize the impacts on the surrounding vegetation. In areas of dense noxious weed populations, a broader application will be used and a follow-up seeding program will be implemented. Attachment G includes a list of BLM-Approved Herbicides. A Pesticide Use Proposal and Safety Data Sheets for the chemicals, which will be compiled by the Construction Contractor(s) and submitted to the BLM for review and approval prior to initiation of construction activities.

Reclamation Actions

As specified in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan, areas where weed control measures have been implemented and require post-construction reclamation actions (e.g., seeding), the following specific stipulations and methods are applicable.

18.3.3 Agency Specific Requirements

Through the implementation of this section and in conjunction with the BLM, the Project will comply with Arizona and California state statutes. The following is a discussion regarding BLM stipulations, and personnel and equipment requirements.

18.3.3.1 Bureau of Land Management

The *Final Programmatic Environmental Impact Statement on Vegetation Treatment on BLM Land in Seventeen Western States (BLM 2016)* lists herbicides acceptable (refer to Attachment G – BLM-Approved Herbicides) for use on BLM-administered lands. Herbicides listed in Table 1 in Attachment G may be used in the Project area after approval by the BLM; however, some herbicides may not be approved for use on land administered by the BLM Colorado River District Office. The herbicides approved for use on the Project will be reviewed and approved by the BLM prior to beginning construction. Guidelines for use of chemical control of vegetation on BLM-administered lands are presented in the Chemical Pest Control Manual. These guidelines require submittal of a Pesticide Use Proposal and Safety Data Sheets for the chemicals, which will be compiled by the Construction Contractor(s) and submitted to the BLM for review and approval prior to initiation of construction activities. A Pesticide Application Record will be submitted to BLM to document the treatments that took place under the Pesticide Use Proposal.

The occurrence of noxious weeds within the Project will be reported to the lead BLM district office for the Project. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with the BLM and the Construction Contractor(s), based on the procedures outlined in this section. The Proponent may be able to take advantage of any existing cooperative agreements between the BLM and the counties by providing the funds required for county personnel to implement the necessary weed control procedures. If not, the Proponent will be responsible for providing the necessary personnel or hiring a contractor to implement the weed control procedures with the qualifications as described in Section 18.3.1.1- Weed Management Personnel Requirements. All Project-related weed control activities will be conducted in accordance with local BLM management requirements.

18.4 Monitoring

A weed management specialist or approved biologist, contracted by the Proponent, will monitor the Project and any other areas of disturbance associated with the Project during operation and maintenance activities. Monitoring will be conducted biannually during the spring and fall and will coincide with seasons when the species identified during preconstruction inventories may be identified in the field. This monitoring may coincide with the reclamation monitoring identified and outlined in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan. Growing seasons will vary from year-to-year; therefore, the length of monitoring will vary as well.

18.4.1 Reclamation Monitoring

During reclamation monitoring, the Proponent, or representative contractor for the Proponent, will initiate monitoring of previously identified affected/disturbed areas during the first spring following construction and proceed with monitoring during subsequent intervals. Monitoring will occur in all areas where the Project has a high risk of introducing or spreading noxious weeds, including previous weed wash station areas and areas of ground disturbance or vegetation clearing.

Noxious weed monitoring will occur biannually for five years following completion of each portion of the Project. In addition, noxious weed conditions will be included in the evaluations of revegetation success as described in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan. The Proponent will document its observations following

the above-noted field inspections and make these monitoring reports available to the BLM and states, as required.

Sensitive plant occurrences affected by Project activities will be monitored annually for the first five years following Project implementation. Individual counts of sensitive plants will be undertaken in affected areas to determine whether the sensitive plants are recolonizing the site. An annual report with photographs from permanent photo plots, individual plant counts within the affected areas, and noxious weed presence and treatment data would be provided to the BLM botanist.

Areas where the spread of noxious weeds are noted, particularly in previously unaffected locations, will be further evaluated to determine if these areas require remedial action and additional treatment. The Proponent will identify such areas to the agencies, state, county, and milepost (or nearest transmission structure number) and will record any additional noxious weed control treatment. A report summarizing ROW stability, revegetation progress, percent of cover, and weed populations will be provided to the BLM as described in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

18.4.2 Ongoing Monitoring and Control

The Proponent will be responsible for ongoing weed monitoring and control inside of the ROW for the five-year monitoring phase. The Proponent will consult with the BLM and counties should they have a concern pertaining to noxious weeds within their jurisdiction. The BLM also may contact the Proponent to report on the presence of noxious weeds. The Proponent will be required to monitor and control noxious weeds at a level that does not exceed the density or extent of their conditions identified during preconstruction surveys for the full term of the ROW grant/special-use authorization and will manage any new population that is demonstrated to be the result of Project construction (i.e., not introduced to the ROW because of new populations surrounding the ROW), operation, or maintenance of the Project.

The Proponent will not be responsible for the eradication or management of pre-existing noxious weed populations or new or recurring noxious weed populations caused by the spread of noxious weeds from adjacent lands. Also, the Proponent will not be responsible for noxious weeds introduced into the Project area by activities other than Project construction, operation, and maintenance (e.g., recreational use, grazing, other construction project); natural occurrences (e.g., fire); noxious weeds outside the Project ROW; or noxious weeds along existing access roads not improved by the Project.

Operations personnel will be trained in the identification of predominant noxious weed populations, and the Proponent will control the weeds on a case-by-case basis in consultation with the BLM as appropriate. If determined necessary, a report on actions taken will be provided in the form of monitoring reports to the BLM on a predetermined schedule.

18.5 Pesticide Application, Handling, Spills and Cleanup

18.5.1 Pesticide Application and Handling

Only BLM specified non-toxic substances approved by state and federal regulations shall be used for noxious and invasive weed control. The use of any chemical weed control

measures on or near any area that may wash into or blow onto Metropolitan Water District of Southern California property or agricultural lands participating in the Fallowing Program will be conditioned on the approval of Metropolitan or its designated representative. The list of pesticides to be used will be reviewed and approved by the BLM prior to construction, and pesticide application will be based on information gathered from the weed districts and BLM. The tentative Project-approved pesticides are listed in Attachment G – BLM-approved Herbicides. Before application, all required permits from the local authorities will be obtained (the weed districts and BLM). Permits may contain additional terms and conditions that go beyond the scope of this management plan. The following BMP and CMA will be applied to the Project.

BMP-HAZ-04: DCRT would provide the BLM with a Pesticide/Herbicide Use Proposal, outlining the pesticides and herbicides that would be proposed for use on the Project (the 12 kV line would not require pesticide/herbicide use), demonstrating conformance with BLM requirements, and seeking preapproval before use. Only BLM approved products would be used.

CMA-LUPA-BIO-11 (California only): Nuisance Animals and Invasive Species – Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies. Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination. Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water. When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.

18.5.2 Pesticide Spills and Cleanup

All reasonable precautions will be taken to avoid pesticide spills. APM-HAZ-01 outlines several preventative measures to be taken for the Project to achieve this.

APM-HAZ-01: Hazardous Substance Control and Emergency Response (Compliance with CMA-LUPA-BIO-09, CMA-LUPA-SW-06 and 07) - DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable.

All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:

- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.
- Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

DCRT would complete its Emergency Action Plan Form as part of Project tailgate meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailgate information.

18.5.3 Worker Safety and Spill Reporting

In addition to the environmental protection measures described in Section 18.5.2, more information regarding handling of hazardous materials may be found in Appendix I-1 – Hazardous Materials Containment Plan and Appendix I-2 – Spill Prevention, Control, and Countermeasures Plan.

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ATTACHMENT A PROPOSED PROJECT

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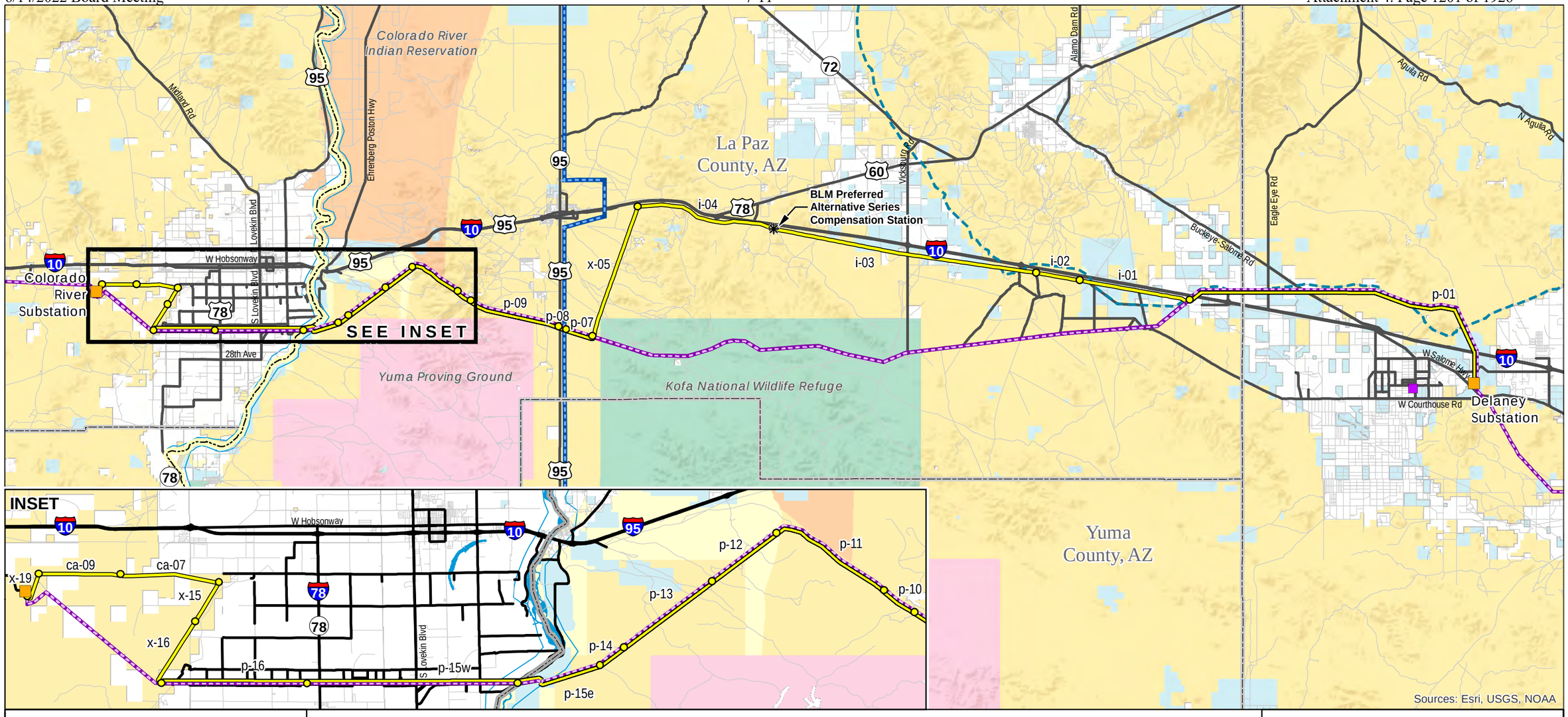

Project Components
- Substation
- BLM Preferred Alternative Series Compensation Station
- Route Segment Node
- BLM Preferred Alternative*

Base Features
- Existing DPV1 500kV Transmission Line
- Existing WAPA 161kV Transmission Line
- Harquahala Power Plant
- CAP Canal
- Interstate Highway
- Major Road
- Local Road
- State Boundary
- County Boundary

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Local or State Parks
- Colorado River Indian Tribe Lands
- Department of Defense
- Private
- State
- USFWS

Ten West Link

Proposed Project

*DPV1, the DEIS Alternative Route Segments, and the BLM Preferred Alternative are cartographically offset for display purposes. Because the routes are cartographically offset, in some cases, the routes do not precisely depict the estimated TWL alignment.

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ATTACHMENT B INSPECTION RECORDS (TBD)

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ATTACHMENT C AGENCY VEGETATION MANAGEMENT REGULATORY MANUALS

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ATTACHMENT D FORMS (TBD)

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ATTACHMENT E PLAN AMENDMENT LOG

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ATTACHMENT F SAGUARO PLANTING DETAIL

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ATTACHMENT G BLM-APPROVED HERBICIDES

The *Final Programmatic Environmental Impact Statement on Vegetation Treatment Using Herbicides on BLM Land in Seventeen Western States* lists herbicides acceptable for use on BLM-administered lands. Table F-7-G1 shows the chemicals approved for use in Arizona and California.

TABLE F-7-G1 HERBICIDES APPROVED FOR USE ON PUBLIC LANDS IN ARIZONA AND CALIFORNIA

Chemical Name	Chemical Name
2,4-D	Hesazinone
2,4-DP	Imazapyr
Asulam	Mefluidide
Atrazine	Metasulfuron methyl
Bromacil	Picloram
Chlorsulfuron	Simazine
Clpyralid	Sulfoneturon methyl
Dicamba	Tebuthiuron
Fosamine	Triclopyr
Glyphosate	

A Pesticide Use Proposal will be submitted to the lead BLM district office and it will specify the herbicide to use based on the noxious and invasive species found.

2B.12 FUGITIVE DUST CONTROL AND CONSTRUCTION EMISSIONS PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Fugitive Dust Control Plan and Construction Emissions Mitigation Plan

PROJECT NUMBER:
154320

PROJECT CONTACT:
Mike Strand
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POWER ENGINEERS

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Fugitive Dust Control Plan and Construction Emissions Mitigation Plan

PREPARED FOR: BUREAU OF LAND MANAGEMENT
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APPENDICES:

ACRONYMS AND ABBREVIATIONS

ADEQ	Arizona Department of Environmental Quality
APM	Applicant Proposed Measures
BMP	Best Management Practices
BLM	Bureau of Land Management
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMA	Conservation Management Actions
CPUC	California Public Utilities Commission
DCRT	Delaney Colorado River Transmission, LLC
EIS	Environmental Impact Statement
LUPA	Land Use Plan Amendment
MCAQD	Maricopa County Air Quality Department
MDAQMD	Mojave Desert Air Quality Management District
MM	Mitigation Measure
NEPA	National Environmental Policy Act
Plan	Fugitive Dust Control Plan and Construction Emissions Mitigation Plan
PM_{10}	particulate matter 10 micrometers or less in diameter
$PM_{2.5}$	particulate matter 2.5 micrometers or less in diameter
Project	Ten West Link Transmission Project
Proponent	Delaney Colorado River Transmission, LLC
ROW	right-of-way
SCAQMD	South Coast Air Quality Management District
SWPPP	Stormwater Pollution Prevention Plan
Ten West Link	Ten West Link Transmission Project
USEPA	United States Environmental Protection Agency

1 Introduction

Construction of the Ten West Link Transmission Project (Project or Ten West Link) has the potential to temporarily increase fugitive dust particularly in areas with high winds and fragile soils. Ambient levels of criteria air pollutants such as nitrogen oxides, hydrocarbons, particulate matter, and carbon monoxide may also be temporarily increased near the construction zone due to emissions from heavy construction equipment. The nitrogen oxide, hydrocarbon, and carbon monoxide compounds are considered ozone precursor emissions. Notably, reductions of greenhouse gas emissions are a major concern in California.

This Fugitive Dust Control Plan and Construction Emissions Mitigation Plan (Plan) describes Delaney Colorado River Transmission, LLC (DCRT or Proponent) and/or its contractor's approach for avoiding and minimizing impacts to air quality due to fugitive dust and construction emissions from the proposed Project.

1.1 Plan Purpose

This Plan represents the commitment on the part of DCRT to protect air quality resources. The overall objective is to provide measures to protect these resources from potential impacts during construction, operation, and maintenance of the transmission line. This plan incorporates mitigation measures contained in the Draft Environmental Impact Statement (EIS) for the Project. This Plan is intended for use as a guide to determine the appropriate site-specific measures to be implemented during construction activities. The goals of this Plan are to control Project-related fugitive dust and construction emissions as a factor in air quality.

2 Regulatory Compliance

Construction, operation, and maintenance of the Project would include activities that create fugitive dust and construction emissions that could impact air quality resources. The following regulations and associated permits and authorizations may be required for the Project.

2.1 Federal

- The Clean Air Act, which was last amended in 1990, requires the United States Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (40 Code of Federal Regulations [CFR] Part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act identifies two classifications of national ambient air quality standards: primary and secondary. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

- Bureau of Land Management (BLM) – Right-of-way (ROW) grant and temporary use permit: Federal Land Policy and Management Act of 1976; 43 United States Code §§1761-1771; 43 CFR Part 2800.

2.2 State Regulations

2.2.1 Arizona

- Arizona Department of Environmental Quality (ADEQ), Arizona Pollutant Discharge Elimination System, Stormwater Construction General Permit; Arizona Revised Statues Title 49, Chapter 2, Article 3.1; Arizona Administrative Code Title 18, Chapter 9, Article 9 and Chapter 11, Article 1.

- ADEQ, Air Quality Division, administers a Fleet Vehicle Inspection Program that allows owners or lessees of fleet vehicles to inspect their vehicles for compliance with emissions, rather than taking them to the state inspection stations. Permits are available for the inspection of non-diesel vehicles, diesel vehicles, or a combination thereof.

- ADEQ may require a Concrete Batch Plant General Permit. This permit would allow the production of concrete by the Construction Contractor at the associated material storage or laydown yard, if needed. This permit covers the following types of equipment: silos, boilers, internal combustion engines, baghouses, storage bins, storage piles, wash plants, direct-fired fuel burning equipment and vehicular traffic.

- ADEQ may require a General Permit for Vehicle and Equipment Washes. Every person who applies for a Type 3 general permit, as provided by Arizona Administrative Code Title18, Chapter 9, Article 3, must file a Notice of Intent to Discharge required by Arizona Administrative Code R18-9-A301(B). In addition to this form, applicants must complete the appropriate Notice of Intent Supplemental Form. A separate Notice of Intent form and Notice of Intent Supplemental form must be completed for each discharging facility (i.e., unit, discharge point) intended to be covered under a general permit. A person intending to operate under a general permit must comply with all the provisions of the general permit and other applicable requirements of statute and rule.

2.2.2 California

- The California Environmental Protection Agency, California Pollutant Discharge Elimination System, Construction General Permit Order 2009-0009-DWQ (amended by 2010-0014-DWQ and 2012-0006-DWQ). In California, the Stormwater Program is administered by the California Regional Water Quality Control Boards. The Project is within the Colorado River Regional Water Quality Control Board.

- The California Air Resources Board has oversight over air quality in the state of California. Regulation of individual stationary sources and area sources has been delegated to local air pollution control agencies. The Project is within the Mojave Desert Air Quality Management District (MDAQMD). MDAQMD may require the following permits:

    - Rule 201 Permit to Construct - A person shall not build, erect, install, alter or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants without first obtaining written authorization for such construction from the Air Pollution Control Officer.

- Rule 202 Temporary Permit to Operate – for operation of equipment.

- Rule 203 Permit to Operate – A person shall not operate or use any equipment, the use of which may cause the issuance of air contaminants or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written permit from the Air Pollution Control Officer or except as provided in Rule 202.

- Rule 206 Posting of Permit to Operate – A person granted a permit under Rule 203 shall not operate or use any equipment unless the entire permit to operate or a legible facsimile of the entire permit is affixed upon the equipment in such a manner that the permit number, equipment description, and the specified operating conditions are clearly visible and accessible.

- Rule 403 covers fugitive dust for areas in attainment of PM_{10} (particulate matter 10 micrometers or less in diameter) and $PM_{2.5}$ (particulate matter 10 micrometers or less in diameter).

- Truck and Bus Regulation - The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

- Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation – The tractors and trailers subject to this regulation must use United States Environmental Protection Agency SmartWay^{SM} certified tractors and trailers or retrofit their existing fleet with SmartWay^{SM} verified technologies.

- In-Use Off-Road Diesel-Fueled Fleets Regulation - On July 26, 2007, the California Air Resources Board adopted a regulation to reduce diesel particulate matter and oxides of nitrogen emissions from in-use (existing) off-road heavy-duty diesel vehicles in California.

- The new Portable Equipment Registration Program Regulation and the Portable Diesel Engine Airborne Toxic Control Measure went into effect November 30, 2018.

- Mobile Sources Certification Programs - New motor vehicles and engines must be certified by the California Air Resources Board for emission compliance before they are legal for sale, use, or registration in California.

- Title 13 of California Code of Regulations § 2485. If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine would be shut off.

- Application for Internal Combustion Engine – for use of equipment such as electrical generator, compressor, pump, paint spray gun, conveyor or drive, and fire pump.

- Concrete Batch Plant Operation – Certification, permitting and emissions inventory for operation of a concrete batch plant.

- Dust Control Permit – Required if dust generating activities would be more than insignificant.

2.3 Local Regulations

2.3.1 Arizona

- The Maricopa County Air Quality Department (MCAQD) has jurisdiction over the protection of air quality in Maricopa County, Arizona. Rule 310 of Regulation III, "Control of Air Contaminants" limits particulate matter emissions from operations and activities that generate sources of fugitive dust. The rule requires measures to prevent, reduce and/or mitigate emissions of particulate matter. Attachment A includes the MCAQD application package and it will be completed and submitted prior to construction activities.

- Section 302 of MCAQD Rule 310 requires that earthmoving activities disturbing areas larger than 0.1 acre obtain a dust control permit from MCAQD. The construction site superintendent (or other onsite representative) and all water truck (water-pull) operators must complete MCAQD's Basic Dust Control Training (Section 309 of Rule 310) every three years. Sites at which greater than five acres are disturbed must designate a Dust Control Coordinator who has full authority to implement compliance with dust control requirements including dust suppression measures, construction site inspections and management controls. The designated Dust Control Coordinator must complete an approved Comprehensive Dust Control Training Class at least once every three years. The Dust Control Coordinator's training identification card must be readily available while he/she is acting as the Dust Control Coordinator.

- Section 401 of MCAQD Rule 310 outlines Dust Control Permit requirements. A Dust Control Plan must be submitted with the application for a Dust Control Permit. The required contents of a Dust Control Plan are found in Section 402.3 of MCAQD Rule 310. The plan must be approved by MCAQD and must effectively control dust at the Project site. The contents of the plan must be kept current and if it is found to be ineffective, it must be revised to better control Project-related dust.

- MCAQD also requires signs for construction activities that may produce fugitive dust. For all sites with a Dust Control permit that are five acres or larger, except for routine maintenance and repair done under a Dust Control Block permit, the owner and/or operator shall erect and maintain a Project information sign at the main entrance such that members of the public can easily view and read the sign at all times. Such sign shall have a white background, have black block lettering that is at least four inches high, and shall contain at least all of the following information: 310-21 308.1 Project name and permittee's name; 308.2 Current Dust Control permit number; 308.3 Name and local phone number of person(s) responsible for dust control matters; 308.4 For dust complaints call MCAQD at (602) 372-2703 or 1-800-635-4617.

- MCAQD does not issue a permit for general combustion emissions associated with earthmoving equipment and construction vehicles. However, operators of certain types of portable combustion equipment like emergency generators and concrete batch plants may be required to apply for a permit to operate the equipment.

3 Overview

The air quality study area for the Draft EIS is a 31-mile (50-kilometer) radius around the Proposed Action and Action Alternatives. A 31-mile radius was chosen to be consistent with minimum air quality analyses required by the USEPA Prevention of Significant Deterioration regulations. Current air quality conditions in the study area were obtained from the USEPA's AirData website for the nearest monitor locations for each pollutant considered (carbon monoxide, nitrogen dioxide, ozone, PM_{10}, $PM_{2.5}$, and sulfur dioxide). Given the rural, unpopulated nature of the study area, concentrations of most pollutants are well below the National Ambient Air Quality Standards. The exception is ozone, and the eastern portion of the study area near Phoenix is in a nonattainment area. The USEPA estimated that Arizona greenhouse gas emissions were approximately 92.3 million metric tons per year for calendar year 2000. The California Air Resources Board estimated 440.4 million metric tons of carbon dioxide equivalent for the state in 2015.

Per the Draft EIS, the Proposed Action would result in emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases, but operational emissions and impacts would be much lower than construction phase emissions (Draft EIS, Appendix 4, Tables 4.2-1 through 4.2-3). Fugitive dust, engine exhaust, concrete batch plant emissions, and sulfur hexafluoride emissions from gas insulated circuit breakers in the switchyards would be the sources of air quality impacts. The emissions of criteria air pollutants would not exceed the conformity emissions thresholds for the Phoenix nonattainment/maintenance area or the daily and annual MDAQMD significance thresholds for the Riverside corridor.

4 Fugitive Dust

Soil conservation for the Project includes minimizing impacts that will negatively affect soils from the construction and operation of the Project, such as minimizing wind and water erosion, surface disturbance, and construction activities in highly erodible soils. Erosion potential is the result of several factors including slope, vegetation cover, climate, and the physical and chemical characteristics of the soil. Increased soil erosion may occur when vegetation is removed during construction, or in areas where the surface is disturbed by heavy equipment. Wind is also an erosion factor throughout portions of the Project area.

Where disturbance is anticipated in areas of steep terrain with high potential for erosion, vegetation clearing, and grading will be conducted in a manner to minimize these effects. Soil stabilization and reclamation practices will also be implemented to reduce erosion. In areas of soil disturbance or compaction (e.g., temporary work areas) soil treatment and reclamation will be implemented as directed in Appendix G-2 Stormwater Pollution Prevention Plan and Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

Air quality control measures are intended to minimize fugitive dust and air emissions, and to maintain conditions as free from air pollution where practical. All requirements of those entities having jurisdiction over air quality matters will be adhered to, and any permits needed for construction activities will be obtained, as described in Section 2. The Construction Contractor(s) will not proceed with any construction activities without taking appropriate precautions to prevent excessive particulate matter from becoming airborne and creating nuisance conditions.

Where necessary, water may be used as BLM-approved dust control methods during construction, including for the grading of roads or the clearing of vegetation in the ROW, and

will be applied on unpaved roads, material stockpiles, and other surfaces, which can create airborne dust. Water for the Project will be obtained from the following potential sources: 1) drawn from Central Arizona Project canal locations with permits through the Central Arizona Project and water withdrawal agreements; 2) from municipal resources using water use agreements (typically from metered set-up at fire hydrants); or 3) from private wells under water use agreements with landowners. Where application of water is not possible, material stockpiles will be enclosed or covered. In addition, open bodied trucks transporting materials likely to become airborne will be covered. Soil tracks or other materials that may become airborne will promptly be removed from paved roads. Techniques to minimize and control dust during rock blasting operations will be implemented.

4.1 Environmental Protection Measures

4.1.1 Erosion Control Measures

- Vegetation will be cleared, and the construction ROW will be graded only to the extent necessary. Vegetation within the ROW will be trampled or cut at or near the ground level.
- Except for the areas to be excavated, the vegetative root systems and subsurface soils will be left intact to the greatest extent practicable to help stabilize the soils during construction.
- Trees will be trimmed instead of cutting down, where possible, and cut at the base rather than bulldozing them.
- ROW boundaries will be clearly staked or flagged and no disturbance will be allowed beyond these limits.
- Access roads will be designed to fit the terrain by avoiding unstable slopes and highly erodible conditions, to the extent practicable.
- Signs will be placed along access roads to discourage off-road vehicle use in adjacent areas.
- Utilize mulch, tracking, matting or slope length shortening to protect soils and prevent excessive erosion and sedimentation.
- Utilize appropriate drainage control structures to direct surface water runoff away from road surfaces to prevent rilling and rutting and to control sediment discharges.
- Appropriate site-specific seed mixes for revegetation will be used along with salvaged native plants.

APM-GEO-01: Erosion and Sedimentation (Compliance with Conservation Management Actions [CMA]-LUPA-SW-8) – DCRT would implement a Stormwater Pollution Prevention Plan (SWPPP) for the Project. A monitoring program would be established to ensure that the prescribed Best Management Practices (BMPs) are followed throughout transmission line construction. Examples of these BMPs include the following:

- Preparation, training, and maintenance for clear work-site practices, tracking controls, and materials management to minimize the direct work impacts on soil and erosion.
- Installation of temporary silt fences and other containment features (including gravel bags and fiber rolls) surrounding work areas to prevent the loss of soil during rain events and other disturbances.
- Utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains.
- Implementation of soil erosion controls, including preservation of existing vegetation, temporary soil stabilization through hydroseeding, mulching, and other techniques.
- Stockpiling soils at least 100 feet from drainages to the extent possible. If soil stockpiles are within 100 feet from a drainage proper measures would be implemented such as soil tackifiers, straw wattles around the pile, and/or covering the stockpile.

APM-BIO-07: Monofilament Plastic (Compliance with CMA-LUPA-BIO-9) – No monofilament plastic would be used for erosion control (for example, matting, fiber roll, wattles, silt fencing backing). Appropriate materials include burlap, coconut fiber, or other materials as identified in the general and site-specific SWPPP.

APM-BIO-10: Erosion and Dust Control (Compliance with CMA-LUPA-BIO-9) – The BMPs included in the SWPPP would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as described previously (AQ-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access).

BMP-BIO-38: Use of State-of-the-Art and Commercially-Available Technology (Compliance with CMA-LUPA-BIO-9 and CMA-LUPA-BIO-15) – Use state-of-the-art, commercially-available construction and installation techniques, as approved by BLM, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

BMP-BIO-50: Engineering Controls - Appropriate engineering controls would be used to minimize impacts on dry wash, dry wash woodland, and chenopod scrub, including downstream occurrences, resulting from surface water runoff, erosion, sedimentation, altered hydrology, accidental spills, or fugitive dust deposition to these habitats. Appropriate buffers and engineering controls would be determined through agency consultation.

APM-WQ-01: SWPPP Development and Implementation (Compliance with CMA-LUPA-BIO-9) – Following Project approval, DCRT or their contractor would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable

stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR Part 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following:

- Defining ingress and egress within the Project site.
- Implementing a dust control program during construction.
- Properly containing stockpiled soils.

Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the State Water Resources Control Board and ADEQ. The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit:

- Stormwater team qualifications and contact information.
- Identification of operators.
- Nature of construction activities.
- Sequence and estimated dates of construction activities.
- Site description.
- Site map(s).
- Receiving waters.
- Control measures to be used during construction activity.
- Summary of potential pollutant sources.
- Use of treatment chemicals.
- Pollution prevention procedures, including spill prevention and response and waste management procedures.

APM-WQ-02: Worker Environmental Awareness Program Development and Implementation – The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs, Health and Safety Plan, and Hazardous Substance Control and Emergency Response Plan.

California

BMP-SOIL-07 (California only): (Compliance with CMA-LUPA-SW-10) – To the extent possible, avoid disturbance of desert biologically intact soil crusts and soils highly susceptible to wind and water erosion.

4.1.2 Working in Wet Soils

- Construction and operation and maintenance activities will be restricted to properly support construction or maintenance equipment (i.e., when heavy equipment creates ruts greater than four inches deep over a distance of 100 feet or more).
- Construction or maintenance activities will be re-routed around wet areas, ensuring that the new route does not cross into sensitive resource areas.
- Use wide-track or balloon-tire vehicles and equipment, or other weight dispersing systems, use geotextile cushions, prefabricated equipment pads or similar materials to minimize damage to the substrate.

See BMPs, Applicant Proposed Measures (APMs) and mitigation measures (MM) in Section 4.1.1.

4.1.3 Dust Control Measures

- Minimize disturbed land areas to the extent practicable with Project design considerations.
- Use frequent watering to maintain visible moisture and/or form a soil crust, while preventing pooling to the extent possible.
- Use a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes to minimize visible fugitive dust emissions. For projects with exposed sand or fines deposits (and for projects that expose such soils through earthmoving), chemical stabilization or covering with a stabilizing layer of gravel will be required to eliminate visible dust/sand from sand/fines deposits.
- Treat actively disturbed areas with BLM-approved dust palliatives. Only BLM specified non-toxic substances approved by state and federal regulations shall be used for dust control. The use of any chemical dust control measures on or near any area that may wash into or blow onto Metropolitan Water District of Southern California fee property or agricultural lands participating in the Fallowing Program will be conditioned on the approval of Metropolitan or its designated representative.
- Maintain a visible crust and sufficient moisture on any storage piles or cover with tarps.
- All maintenance and access vehicular roads and parking areas shall be stabilized with either chemical or gravel or application of water, sufficient to eliminate visible fugitive dust from vehicular travel and wind erosion. Take actions to prevent Project-related track-out onto paved surfaces, and clean any Project-related track-out within 24 hours. Install track-out control devices such as grizzly bars grates, wheel washers or gravel pads located at all entrances and exits, as required by

dust control regulations. All other earthen surfaces within the Project area shall be stabilized by natural or irrigated vegetation, water, compaction, chemical or other means sufficient to prohibit visible fugitive dust from wind erosion. Utilize street sweepers to remove any visible soil/mud/dirt tracked onto paved access roads.

- Helicopter landing and takeoff areas shall be stabilized with either dust palliatives or water to reduce fugitive dust created by the aircraft.
- Limit vehicle speeds on access roads to less than 15 miles per hour.
- Cover haul truck cargo bed with tarps and maintain six inches of freeboard.
- Halt dust generating activities on high-wind event days, and/or during periods of adverse meteorological conditions which could cause or contribute to violations of air quality standards. In California, adhere to MDAQMD rules.
- All perimeter fencing shall be wind fencing or the equivalent, to a minimum of four feet of height or the top of all perimeter fencing. The owner/operator shall maintain the wind fencing as needed to keep it intact and remove windblown dropout. This wind fencing requirement may be superseded by local ordinance, rule or Project-specific biological mitigation prohibiting wind fencing.
- After work is completed in each project area, revegetate to stabilize soils.
- During post-construction, apply dust suppression measures such as watering, application of approved dust palliatives, or cover vacant lots with gravel.

APM-AQ-01: Fugitive Dust (Compliance with Conservation Management Action [CMA]/ Land Use Plan Amendment [LUPA]-AIR-2, 3, and 5) - The following control measures would be implemented, as applicable, to reduce PM_{10} and $PM_{2.5}$ emissions during construction, in conjunction with an Erosion, Dust Control, and Air Quality Plan and Fugitive Dust Control Plan for the Project.

Basic Control Measures

The following measures would be implemented as applicable at all construction sites:

- Water active construction areas sufficiently to minimize fugitive dust.
- Dust control would include the use of one or more water trucks that would water access roads daily as needed to control dust throughout the construction period.
- Cover trucks hauling soil, sand, and other loose materials and require all trucks to maintain at least six inches of freeboard.
- Pave, apply water, or apply nontoxic soil stabilizers as applicable on for all unpaved access roads, parking areas, and staging areas at construction sites to minimize fugitive dust.

Enhanced Control Measures

In addition to the “basic control measures” listed above, the following control measures may be implemented at all construction sites greater than four acres:

- Water, hydroseed, or apply nontoxic soil stabilizers to inactive construction areas to minimize fugitive dust.

- Enclose, cover, water, or apply nontoxic soil binders to exposed stockpiles.

- Limit traffic speeds on unpaved roads.

- Replant vegetation in disturbed areas as quickly as possible, consistent with seasonal survival considerations.

Optional Control Measures

Depending on the extent of dust generation, implementation of the following optional control measures may occur at larger construction sites, near sensitive receptors (residences or other occupied buildings, parks, or trails within 1,000 feet of earthmoving operations that are substantial; for example, more than excavation for tower foundations), or in situations which for any other reason may warrant additional emissions reductions:

- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the site.

- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour.

Limit the area subject to excavation, grading, and other construction activity at any one time.

APM-AQ-04: Minimize Potential Emissions of Naturally Occurring *Coccidioides immitis* Fungal Spores – In addition to the AQ-01 measures to control general fugitive dust emissions, the following measures would be implemented prior to and during construction to create awareness of the risks and inhalation prevention procedures with respect to *Coccidioides immitis* fungal spores, which are naturally present in soils in the desert southwest, and inhalation of which can cause Valley Fever:

- Prior to construction, and for each phase of construction, implement an Environmental Awareness Program for workers to ensure they are informed of the risks of contracting Valley Fever and the protective measures needed to minimize personal exposure to fugitive dust, as well as to minimize possible dust exposure of nearby residents and the public.

- Inform workers of the possible symptoms of Valley Fever and encourage them to seek medical treatment if these symptoms manifest.

BMP-AQ-01: Dust Palliatives – Dust palliatives would be applied, in lieu of water, to inactive construction areas (disturbed lands or soil stockpiles that are unused for 14 consecutive days). Dust palliatives would be chosen by the Dust Control Site Coordinator and or construction contractor. Dust palliatives would be environmentally safe; comply with federal, state, and local regulations; and would not produce a noxious odor or contaminate surface water or groundwater and, therefore, would not pose runoff concerns during rain events. Application rates for dust palliatives would follow the manufacturer's recommendations. Material Safety Data Sheets for any palliatives would be available on site and provided to the BLM 14 days prior to use.

California

BMP-AQ-05 (California only): Air Quality Regulation and Standard Conformance (Compliance with CMA/LUPA-AIR-02) – All activities would meet the requirements of the Clean Air Act (Sections 110, 118, 160, and 176[c]) and the applicable local Air Quality Management jurisdiction(s). Fugitive dust cannot exceed local standards and requirements.

CMA-LUPA-AIR-1 (California only) – All activities must meet the following requirements:

- Applicable National Ambient Air Quality Standards (Section 109).
- State Implementation Plans (Section110)
- Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.).
- Conformity Analyses and Determinations (Section 176[c]).
- Apply BMPs on a case by case basis.
- Applicable local Air Quality Management Jurisdictions (e.g., 403 South Coast Air Quality Management District [SCAQMD]).

CMA-LUPA-AIR-2 (California only) – Because Project authorizations are a federal undertaking, air quality standards for fugitive dust may not exceed local standards and requirements.

CMA-LUPA-AIR-4 (California only) – Because fugitive dust is the number one source of PM_{10} and $PM_{2.5}$ emissions in the Mojave and Sonoran Deserts, fugitive dust impacts to air quality must be analyzed for all activities/projects requiring an EIS and Environmental Assessment.

The National Environmental Policy Act (NEPA) air quality analysis may include modeling of the sources of PM_{10} and $PM_{2.5}$ that occur prior to construction and/or ground disturbance from the activity/project, and show the timing, duration and transport of emissions off site. When utilized, the modeling will also identify how the generation and movement of PM_{10} and $PM_{2.5}$ will change during and after construction and/or ground disturbance of the activity/project under all activity/project specific NEPA alternatives. The BLM air resource specialist and Authorizing Officer will determine if modeling is required as part of the NEPA analysis based on estimated types and amounts of emissions. The BLM National Operations Center in conjunction with the California BLM determined modeling is not required for this Project (Draft EIS 2018, Appendix 2C-35, Table 2C.1.2 Air Resources).

CMA-LUPA-AIR-5 (California only) – A fugitive Dust Control Plan will be developed for all projects where the NEPA analysis shows an impact on air quality from fugitive dust. (The development of this plan satisfies CMA-LUPA-AIR-5.)

4.1.4 Construction Phase

The Environmental Compliance Manager will regularly inspect or coordinate the inspection of project activities for compliance with dust control and air quality regulations. Environmental inspectors perform daily inspections, identify sensitive resources, act as a

resource to construction personnel and oversee any corrective actions. Daily logs will be completed by inspectors as necessary; issues of noncompliance will be documented and addressed as quickly as possible. The Compliance Inspection Contractor works under the director control and supervision of the BLM and will be responsible for overseeing implementation of the environmental protection measures identified in Section 4.

The construction contractor(s) will be contractually bound to comply with all laws, regulations and permit requirements, including the mitigation measures and other stipulations and methods set forth in the ROW grant, Plan of Development, and Record of Decision throughout all phases of the Project. The contractor(s), serving as an "operator" under ADEQ's Construction General Permit and California Environmental Protection Agency's Construction General Permit, will submit a Notice of Intent.

4.1.4.1 Training

All construction personnel will participate in environmental trainings to build the Project safely and in compliance with erosion prevention, dust control, and air quality protection regulations. The general orientation would include definitions and a discussion of the main areas of focus on construction projects which are fugitive dust and engine emissions. Training would include a discussion of the following applicable Project rules and regulations: The federal Clean Air Act, Maricopa County Rule 310, and Mojave Desert Dust Control. Personnel will attend training as appropriate and required.

Training would include a discussion of BMPs, Valley Fever facts, and Valley Fever prevention as indicated below.

- BMPs for the control of fugitive dust may include, but are not limited to:
    - Preservation of vegetation.
    - Maximum speed of 15 miles per hour unless posted otherwise.
    - Stabilized construction exits.
    - Water application along access roads and work sites.
    - Application of dust suppressants and tackifiers.
    - Topsoil and spoil stock pile management.
- Valley Fever
    - It is caused by spores of the fungus *Coccidioides immitis* or *Coccidioides posadasii*.
    - Valley fever is also referred to as "San Joaquin Valley fever" or "desert rheumatism."
    - Valley fever lives in soil of southwest United States, south central Washington and parts of Mexico and South America.
    - Sickness comes from breathing in airborne fungal spores; usually affects the lungs but can spread in severe cases.

  - Five to ten percent of infections cause lasting lung damage.
  - Symptoms are flu-like and may take one to three weeks to appear and last for weeks or months.

- Valley Fever Prevention
  - Use proper dust prevention/control practices to limit fugitive dust.
  - Limit exposure to outdoor dust in endemic areas.
  - Avoid areas with a lot of dust like construction/excavation sites.
  - Wear an N95 or better respirator.
  - Stay inside during dust storms; close windows.
  - Avoid activities that involve disturbance and contact with dirt or dust, including yard work, gardening, and digging.
  - Use air filtration measures indoors.
  - Clean skin injuries well with soap and water to reduce the chances of developing a skin infection, especially if the wound was exposed to dirt or dust.
  - Take preventive antifungal medication if your healthcare provider says you need it.

Rule 310 of the MCAQD includes the following requirements for basic dust control training:

a. At least once every three years, the persons specified in Section 309.1(b) or Section 309.1(c) of this rule shall successfully complete a Basic Dust Control Training Class conducted or approved by the Control Officer.

b. The following persons present at a site that is subject to a permit issued by the Control Officer requiring control of PM_{10} emissions from dust-generating operations shall complete a Basic Dust Control Training Class as specified in Section 309.1(a) of this rule: 1) water truck drivers; 2) water-pull drivers; and 3) the site superintendent or other designated on-site representative of the permit holder, if present at a site that has more than one acre of disturbed surface area.

c. A Dust Control Block Permit permittee/holder shall have, at a minimum, one individual trained in accordance with the Basic Dust Control Training Class as specified in Section 309.1(a) of this rule, if present at a site that has more than one acre of disturbed surface area.

d. All persons having successfully completed training during the 2018 and 2019 calendar years shall be deemed to have satisfied the requirement to successfully complete the Basic Dust Control Training Class, if the training that was completed was conducted or approved by the Control Officer. Completion of the Comprehensive Dust Control Training Class, as required in Section 309.2 of this rule, shall satisfy the requirement of this section of this rule.

e. The Control Officer may suspend or revoke for cause including, but not limited to, inappropriate ethical activities or conduct associated with the dust control program or repeated failure to follow the training requirements, a certification issued to a person having successfully completed a Basic Dust Control Training Class conducted or approved by the Control Officer. The Control Officer will provide written notification to such person regarding such suspension or revocation.

Rule 310 of the MCAQD includes the following requirements for comprehensive dust control training:

a. At least once every three years, the Dust Control Coordinator, who meets the requirements of Section 310 of this rule, shall successfully complete the Comprehensive Dust Control Training Class conducted or approved by the Control Officer.

b. The Control Officer may suspend or revoke for cause including, but not limited to, inappropriate ethical activities or conduct associated with the dust control program or repeated failure to follow the training requirements, a certification issued to a person having successfully completed a Comprehensive Dust Control Training Class conducted or approved by the Control Officer. The Control Officer will provide written notification to such person regarding such suspension or revocation.

Rule 310 of the MCAQD includes the following requirements for the dust control coordinator:

310.1 The permittee for any site of five acres or more of disturbed surface area subject to a permit issued by the Control Officer requiring control of PM_{10} emissions from dust-generating operations shall have on-site at least one Dust Control Coordinator trained in accordance with Section 309.2 of this rule at all times during primary dust-generating operations related to the purposes for which the Dust Control permit was obtained.

310.2 The Dust Control Coordinator shall have full authority to ensure that dust control measures are implemented on-site, including conducting inspections, deployment of dust suppression resources, and modifications or shut-down of activities as needed to control dust.

310.3 The Dust Control Coordinator shall be responsible for managing dust prevention and dust control on the site.

310.4 At least once every three years, the Dust Control Coordinator shall successfully complete a Comprehensive Dust Control Training Class conducted or approved by the Control Officer.

310.5 The Dust Control Coordinator shall have a valid dust training certification identification card readily accessible on-site while acting as a Dust Control Coordinator.

310.6 The requirement for a Dust Control Coordinator shall lapse when all of the following actions/events/procedures occur: a) the area of disturbed surface area becomes less than five acres; b) the previously disturbed surface areas have been stabilized in accordance with/in compliance with the standards and/or requirements of this rule; and c) the Dust Control permit holder provides notice to the Control Officer of acreage stabilization.

310.7 The Dust Control Block Permit permittee/holder shall have on sites that have more than one acre of disturbed surface area at least one individual, who has been trained in accordance with the requirements of Section 309.1(c) of this rule. One such individual shall be designated by the Dust Control Block Permit permittee/ holder as the Dust Control Coordinator. The Dust Control Coordinator shall be present onsite at all times during primary dust-generating activities that are related to the purposes for which the permit was obtained.

4.2 California Environmental Quality Act

In compliance with the California Environmental Quality Act (CEQA) the following mitigation measure will be adhered to:

MM-AQ-CEQA-1 – Consistent with APM AQ-01, and MDAQMD Rule 403.2, a Fugitive Dust Control Plan shall be prepared for the Project prior to the start of construction and shall be implemented throughout all construction phases of the Project. This Fugitive Dust Control Plan shall be prepared by the Proponent at least 30 days prior to construction which shall be approved by the California Public Utilities Commission (CPUC) and MDAQMD. The Proponent shall ensure that the Fugitive Dust Control Plan is implemented throughout construction activities and shall keep records of compliance on site and submit monthly reports to CPUC and MDAQMD. This Fugitive Dust Control Plan shall comply with the MDAQMD Guidelines and include all of the control measures listed in APM AQ-01. In addition to these control measures, the Fugitive Dust Control Plan shall also include signage related to fugitive dust that will include the following specifications:

- A minimum 48-inch high by 96-inch wide sign containing the following shall be located within 50 feet of each Project site entrance, meeting the specified minimum text height, black text on white background, on one-inch A/C laminated plywood board, with the lower edge between six and seven feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day:
    - [Site Name] {four-inch text}
    - [Project Name/Project Number] {four-inch text}
    - IF YOU SEE DUST COMING FROM {four-inch text}
    - THIS PROJECT CALL: {four-inch text}
    - [Contact Name], PHONE NUMBER XXX-XXXX {six-inch text}
    - If you do not receive a response, Please Call {three-inch text}
    - The MDAQMD at 1-800-635-4617 {three-inch text}

Additionally, the following control measures shall be included in the Fugitive Dust Control Plan:

- Traffic speeds on unpaved roads shall not exceed 15 miles per hour.

- Drop heights from excavators and loaders shall be minimized to distances no more than five feet.

- Appoint a construction relations officer to act as a community liaison concerning on-site construction activity, including resolution of issues related to PM_{10} and $PM_{2.5}$ generation from combustion emissions and fugitive dust generation.

- An on-site supervisor with a current fugitive dust control class certification shall be present who is available within 30 minutes to respond to any fugitive dust control issue at the site during normal business hours.

- The operation shall keep on-site records of specific dust control actions taken.

- All perimeter fencing shall be wind fencing or the equivalent of four feet of height or the top of all perimeter fencing (this wind fencing requirement may be superseded by local ordinance, rule, or Project-specific biological mitigation prohibiting wind fencing).

- A wheel washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the unpaved construction site.

Responsible Party: The Applicant shall be responsible for ensuring the Fugitive Dust Control Plan is prepared and implemented throughout construction activities.

Timing: The Fugitive Dust Control Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any calls received regarding fugitive dust and all compliance actions taken.

Standards for Success: Fugitive dust will be minimized throughout all construction activities and compliance with MDAQMD Rule 403.2 shall be achieved.

5 Construction Emissions

Vehicles emit many pollutants into the air, including carbon monoxide, carbon dioxide, hydrocarbons, nitrogen oxides, sulfur oxides, and volatile organic compounds. These pollutants then combine to form secondary pollutants such as fine particulate matter and ozone.

Given the rural, unpopulated nature of the Project area, concentrations of most pollutants are well below the National Ambient Air Quality Standards. The exception is ozone, and the eastern portion of the study area near Phoenix is in a nonattainment area (Draft EIS 2018).

Construction of the Project would result in emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases, but operational emissions and impacts would be much lower than construction phase emissions. However, any increase in greenhouse gas construction emissions may be offset to the extent the Project allows for the displacement of fossil fuel energy generation with renewable energy sources through the provision of new transmission infrastructure to interconnect future renewable energy resources in both

Arizona and California. As such, there may be a beneficial contribution to anthropogenic climate change (BLM 2019).

Construction emission mitigation measures are intended to minimize air quality impacts, and to maintain conditions as free from air pollution where practical. All requirements of those entities having jurisdiction over air quality matters will be adhered to, and any permits needed for construction activities will be obtained. The Construction Contractor(s) will not proceed with any construction activities without taking reasonable precautions to prevent excessive particulate matter from becoming airborne and creating nuisance conditions.

Excessive exhaust emissions from vehicles and heavy equipment will be prevented by proper maintenance. Idling of equipment will be limited to reduce exhaust emissions. There will be no open burning of construction trash or other open fires.

5.1 Environmental Protection Measures

In addition to applicable design and operational standards, regulations, laws and permit requirements, the following design features and BMPs, APMs, and mitigation measures have been identified to avoid or minimize potential fugitive dust and construction emissions related impacts. Another applicable plan includes the K-2 Traffic and Transportation Management Plan.

5.1.1 Air Quality Measures

To alleviate traffic congestion and decrease the number of vehicles traveling to the Project work areas, the Construction Contractor will encourage personnel to carpool to work each day. Additionally, crews will commute from show up yards to the work sites in company provided crew vehicles after meeting at the show-up yard locations. Additionally, the following general practices will help to reduce construction vehicle emissions.

- Minimize construction related trips of workers and equipment.
- Use existing roads for construction and access whenever possible and minimize areas disturbed outside of the power line ROW.
- Eliminate or minimize idling of motor vehicles and motorized equipment.
- Follow manufacturer recommendations for engine maintenance and operation to optimize emission performance.
- Utilize newer equipment that meets the most stringent federal or state standards as much as practicable.
- Locate diesel engines, motors and equipment as far as practicable from sensitive areas and receptors.

California

APM-AQ-02 (California only): Exhaust Emissions (Compliance with CMA/LUPA-AIR-3) – The following measures would be implemented during construction to further minimize greenhouse gas emissions (carbon dioxide, methane, and nitrous oxide) per California

AB32 and criteria air pollutants from vehicle and machinery and in conjunction with this Construction Emissions Mitigation Plan for the Project:

- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time depends on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Project would apply a “common sense” approach to vehicle use, such that idling is reduced as far as possible below the maximum of five consecutive minutes required under 13 California Code of Regulations § 2485. If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine would be shut off.

- Encourage use of natural gas- or electric-powered vehicles for light-duty trucks where feasible and available.

CMA-LUPA-AIR-1 (California only) – All activities must meet the following requirements:

- Applicable National Ambient Air Quality Standards (Section 109).

- State Implementation Plans (Section110)

- Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.).

- Conformity Analyses and Determinations (Section 176[c]).

- Apply best management practices on a case by case basis.

- Applicable local Air Quality Management Jurisdictions (e.g., 403 SCAQMD).

CMA-LUPA-AIR-3 (California only) – Where impacts to air quality may be significant under NEPA, requiring analysis through an EIS, require documentation for activities to include a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed Project (including cumulative and indirect impacts and greenhouse gas emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and proposed mitigation measures to minimize net PM_{10} and $PM_{2.5}$ emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.

5.2 California Environmental Quality Act

In compliance with CEQA the following mitigation measure will be adhered to in California:

MM-AQ-CEQA-1 – Consistent with APM AQ-02 a Construction Emissions Mitigation Plan shall be developed by the Applicant for the Project at least 30-days prior to the start of

construction activities and shall be implemented by the Applicant throughout all construction activities. The Construction Emissions Control Plan shall be approved by the CPUC and MDAQMD and the Applicant shall keep records of compliance with this Plan on site and submit monthly reports to CPUC and MDAQMD. Successful implementation of with measure will result in minimization of exhaust emissions from worker vehicles, construction equipment, and vehicles. The Construction Emissions Mitigation Plan may include the following measures:

- Use ultra-low sulfur diesel fuel (e.g., <15 parts per million).
- Use clean-burning on- and off-road diesel engines. Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be utilized.
- The Applicant shall develop a program and require construction workers to carpool to construction sites.
- Restrict construction vehicle idling time to less than five minutes.
- Properly maintain mechanical equipment.
- Use particle traps and appropriate controls to reduce diesel particulate matter. Other equipment includes devices such as specialized catalytic converters (oxidation catalysts) control approximately 20 percent of diesel particulate matter, 40 percent of carbon monoxide, and 50 percent of hydrocarbon emissions.
- Provide temporary traffic controls, such as a flag person, during all phases of construction to maintain a smooth traffic flow (see Appendix K-2 Traffic and Transportation Plan, MM-TRANS-CEQA-2 for more details).
- Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site.
- During Project construction, all off-road diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emissions standards, where available. In addition, all construction equipment shall be outfitted with the Best Available Control Technology devices certified by California Air Resources Board. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine as defined by California Air Resources Board regulations (i.e., if Project construction goes beyond the anticipated schedule).
- A copy of each unit's certified tier specification, Best Available Control Technology documentation, and California Air Resources Board or MDAQMD operating permit shall be provided to the CPUC at the time of mobilization for each applicable unit of equipment.

Responsible Party: The Applicant shall be responsible for ensuring the Construction Emissions Control Plan is prepared and implemented throughout construction activities.

Timing: The Construction Emissions Control Plan shall be prepared at least 30 days prior to the start of construction and implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any compliance actions taken.

Standards for Success: Construction emissions will be minimized and would not exceed MDAQMD significance thresholds. Additionally, any State standards regulating construction emissions would be met (i.e., California Air Resources Board Tier 4 emission standards and Title 1. California Code of Regulations Section 2485 standards).

6 Reclamation

Upon completion of the Project construction activities, the construction contractor's environmental inspectors will monitor the implementation of the reclamation treatments as stipulated in Appendix L- Reclamation, Vegetation, and Monitoring Plan of the Plan of Development. Reclamation activities will continue to minimize fugitive dust and construction emissions. On federal lands, the Compliance Inspection Contractor and BLM Authorized Officer must approve proposed site stabilization/reclamation measures before construction activities are considered complete for the Project. DCRT and/or its contractors will also be required to meet the stabilization requirements and post-construction conditions of the Arizona and California Construction General Permit. The same practices for fugitive dust control and construction emissions as described in this Plan will occur during reclamation, except for dust palliatives.

7 Operation and Maintenance Phase

After construction and reclamation, operation and maintenance activities will continue to incorporate BMPs and other mitigations discussed throughout this Plan to minimize fugitive dust and construction vehicle emissions, as needed. Protocol may be adapted based on the applicability to the operation and maintenance task.

8 References

Bureau of Land Management (BLM). 2018. Draft Environmental Impact Statement (EIS) and Draft Resource Management Plan Amendments for the TenWest Link Transmission Line Project. 2018. Bureau of Land Management, Colorado River District Office.

ATTACHMENT A MARICOPA COUNTY AIR QUALITY DEPARTMENT APPLICATION

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ATTACHMENT B MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT APPLICATION

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2B.13 PALEONTOLOGICAL RESOURCES TREATMENT, MONITORING, AND DISCOVERY PLAN

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PALEONTOLOGICAL RESOURCES IMPACT MITIGATION MONITORING PLAN

TEN WEST LINK TRANSMISSION LINE PROJECT

DCR Transmission, LLC

Prepared for: **Bureau of Land Management**
Colorado River District Office
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PSI Report: AZCA18MaricopaLaPazRiversideECS01R

December 13, 2018

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1.0 EXECUTIVE SUMMARY

This Paleontological Resource Impact Mitigation and Monitoring Plan (PRIMMP) was prepared by Paleo Solutions, Inc. (Paleo Solutions) in support of the DCR Transmission, LLC (DCRT) Ten West Link Transmission Line Project (Project). The PRIMMP is designed to mitigate effects to paleontological resources, through implementation of monitoring and a plan for discoveries, in accordance with the National Environmental Policy Act (NEPA), and to reduce impacts on paleontological resources to below the level of significance pursuant to the California Environmental Quality Act (CEQA). This PRIMMP serves as the Paleontological Resource Treatment Plan, Paleontological Monitoring and Discovery Plan, and the Paleontological Resources Monitoring and Mitigation Plan required for this Project, as directed by Mitigation Measure (MM) CUL-CEQA-3. This work was required by the Bureau of Land Management (BLM) Colorado River District Office in order to fulfill their responsibilities as the lead agency under NEPA, as well as the California Public Utilities Commission (CPUC) as the lead agency under CEQA. This report was prepared in accordance with BLM procedures (BLM IM 2016-124 [2016] and BLM Manual and Handbook H-8270-1 [1998]), and the requirements of Applicant Proposed Measure (APM) PALEO-01, Best Management Practice (BMP) PALEO-02, and MM CUL-CEQA-3 (see Appendix E).

DCRT proposes to construct, operate, maintain, and decommission a series-compensated, 500 kilovolt (kV) alternating current (AC) overhead transmission line within a 200-foot right-of-way (ROW), which spans approximately 114 miles from the Arizona Public Services Company (APS) Delaney Substation near the community of Tonopah, Maricopa County, Arizona to the Southern California Edison Company (SCE) Colorado River Substation near the City of Blythe, Riverside County, California. The purpose of the Project is to transmit 3,200 megawatts (MW) between the two substations and to provide connection capability for new energy projects in the region. The 114-mile route proposed by DCRT (i.e., the Proposed Action of the Draft Environmental Impact Statement [EIS]) would parallel an existing transmission line and other linear facilities, such as the Devers to Palo Verde Number 1 Transmission Line, with 97 miles in Arizona and 17 miles in California. The Proposed Action would cross federal lands administered by the BLM, the Bureau of Reclamation (BOR), the U.S. Fish and Wildlife Service (USFWS) (Kofa National Wildlife Refuge), the Department of Defense (DOD) (Yuma Proving Ground), and the Bureau of Indian Affairs (BIA) (Colorado River Reservation). In addition to the 114-mile route, a transmission line series compensation station, which includes a 12 kV electric distribution line, would be situated along the middle of the route and would be constructed parallel to the Devers to Palo Verde Number Transmission Line, south of Vicksburg, Arizona. In addition to the Proposed Action described above, the Draft EIS identified Four Action Alternatives and associated subalternatives, which are composed of individual segments that can be interchanged among the different alternatives. For the purposes of this PRIMMP, the BLM preferred route(s), composed of various individual segments and alternative segments extracted from portions of the Proposed Action and all Four Action Alternatives and associated subalternatives, is discussed herein and referred to as "the Project"; however, note that the Project alignment has not been finalized at the time of drafting this PRIMMP and may change after approval of the Final EIS in 2019. The BLM preferred route (i.e., the Project area) intersects land administered by the State of Arizona, BLM, BOR, and DOD (Yuma Proving Ground), as well as private/undetermined land. The subalternative route CB-03, which is not part of the BLM's preferred route, also intersects land administered by the BIA (Colorado River Reservation) and is included in this report (Table 1; Appendices B and F).

In the baseline technical study of the proposed route (i.e., the Proposed Action) and the alternative segments in support of the Draft EIS, the BLM's Potential Fossil Yield Classification (PFYC) system was used to classify mapped geologic units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. For this PRIMMP, Paleo Solutions has refined the geologic mapping of the Project area to use the highest

resolution geologic maps available and published by Miller (1970), Ort and Skotnicki (1993), Richard et al. (1994), Sherrod et al. (1990), and Stone (1988-1990, and 2006). Additionally, the paleontological potential of the Project area was re-assessed based on the refined geologic mapping and fossil occurrence data.

Geologic units underlying the Project area and within a quarter-mile buffer were mapped by Miller (1970), Ort and Skotnicki (1993), Richard et al. (1994), Sherrod et al. (1990), and Stone (1988-1990 and 2006). In total, 42 geologic units and their PFYC were assessed within a quarter-mile buffer of the Project area, including Proterozoic slaty metavolcanics rocks (Xm); middle Proterozoic granitoid (Yg); Precambrian quartz monzonite (pCqm); Precambrian or Mesozoic metavolcanics rocks (pCv); Paleozoic(?) rocks and Precambrian and Mesozoic rocks, undifferentiated (pCu); Paleozoic(?) quartz-albite-muscovite-chlorite schist with meta-tuffaceous rock, Unit 3 (pC3); Paleozoic(?) vitreous quartzite, medium to massively bedded, Unit 4 (pC4); Paleozoic(?) dolomite, tan, chert, massively bedded, Unit 5 (pC5); Jurassic volcanic rocks (Jv); Jurassic volcanic rocks of Dome Rock sequence (Jv); Jurassic volcanic rocks of Dome Rock sequence, upper bedded unit (Jvbu); Cretaceous or Jurassic McCoy Mountains Formation, lower part, undivided (KJmlu); Miocene and Oligocene(?) volcanic rocks of Bear Hills (Tbh); Miocene and Oligocene(?) fanglomerate, sedimentary breccia, and slide blocks (Tf); Miocene or Oligocene andesite (Ta); Miocene or Oligocene lower basaltic volcanic rocks (Tbl); Miocene middle basalt unit (Tbm); Miocene felsic volcanic rocks (Tf); Miocene basalt of New Water Mountains (Tnw); Miocene fanglomerate (Tf); Tertiary(?) tufa (Tbt); Tertiary older hornblende-biotite andesite (Ta); Quaternary and Tertiary(?) alluvial fan and fluvial deposits (QTa); Quaternary or Tertiary hornblende-biotite andesite (QTa); Quaternary or Tertiary basalt of Black Mesa (QTbu); Quaternary or Tertiary dissected fan deposits (QTdf); Quaternary or Tertiary older alluvium (QToa); Pleistocene and/or Pliocene alluvial deposits of the Ehrenberg area (QTe); Pleistocene or Pliocene alluvial deposits of Mule Mountains (QTmm); Quaternary alluvium and talus (Qat); Quaternary alluvium of modern washes (Qw); Quaternary surficial deposits (Qs); late to early Pleistocene alluvium (Qm/Qo); Pleistocene alluvial deposits of Palo Verde Mesa (Qpv); Holocene and late Pleistocene talus (Qt); Holocene and late Pleistocene alluvium/eolian deposits (Qyc/Qye/Qy); Holocene and Pleistocene alluvium (Qa); Holocene and Pleistocene alluvial-fan and alluvial-valley deposits, Unit 3 (Qa3); Holocene alluvial-fan and alluvial-valley deposits (Qa6); Holocene alluvium of modern Colorado River flood plain (Qr); Holocene eolian sand (Qs); and Holocene alluvium of modern washes (Qw). Note that geologic ages tagged with a "(?)" are estimates and represent poorly constrained geologic ages.

The Project area is underlain by moderate paleontological potential (PFYC 3), unknown potential (PFYC U), low potential (PFYC 2), and very low potential (PFYC 1). In accordance with APM PALEO-01, BMP PALEO-02, and MM CUL-CEQA-3 a paleontological monitor will conduct full-time monitoring during all excavations impacting native sediments with moderate paleontological potential (PFYC 3). Part-time monitoring (i.e., spot-checking) will be conducted daily in areas with unknown paleontological potential (PFYC U). If sediments are deemed to be non-conducive to fossil preservation (e.g., high energy [very coarse grained], heavily oxidized [indicating long sediment exposure at the surface], etc.), then monitoring in those areas may be reduced at the discretion of the Project Paleontologist in consultation with the BLM. Construction activities will be spot-checked when excavation depths exceed 10 feet in areas mapped as low paleontological potential (PFYC 2) geologic units to check for the presence of underlying geologic units of higher paleontological potential. If it is subsequently determined that paleontologically sensitive deposits will not be impacted by Project activities, then monitoring in those areas may be reduced at the discretion of the Project Paleontologist in consultation with the BLM. Paleontological monitoring will not be conducted for excavations impacting very low paleontological potential (PFYC 1) (see Tables 2 and 3; see Appendix C).

Prior to earthmoving activities, a paleontological resource awareness training shall be conducted to inform construction personnel of the possibility for fossil discoveries. In such a case, all activity

within a 50-foot radius of the discovery site will cease until a qualified paleontologist has examined and evaluated the find. If the discovery is determined to be significant, the BLM Colorado River District Office and the appropriate BLM field office shall be consulted, and the discovery will be salvaged and prepared to the point of curation and permanent preservation. All significant paleontological resources will be curated at the Natural History Museum of Los Angeles County (NHMLA), which is the approved repository on Paleo Solutions' BLM paleontological use permits for California and Arizona (Appendix D), or another BLM-approved fossil repository, along with their associated field data. Upon conclusion of ground disturbance, a confidential paleontological monitoring report, including detailed locality data, shall be prepared according to BLM specifications. A non-confidential report shall be submitted to DCRT.

2.0 INTRODUCTION

This PRIMMP was prepared by Paleo Solutions in support of the Ten West Link Transmission Line Project. The PRIMMP is designed to mitigate effects to paleontological resources, through implementation of monitoring and a plan for discoveries, in accordance with NEPA, and to reduce impacts on paleontological resources to below the level of significance pursuant to CEQA. This PRIMMP serves as the Paleontological Resource Treatment Plan, Paleontological Monitoring and Discovery Plan, and the Paleontological Resources Monitoring and Mitigation Plan required for this Project, as directed by MM CUL-CEQA-3. This work was required by the BLM Colorado River District Office in order to fulfill their responsibilities as the lead agency under NEPA, as well as the CPUC as the lead agency under CEQA. This report was prepared in accordance with BLM procedures (BLM IM 2016-124 [2016] and BLM Manual and Handbook H-8270-1 [1998]), and the requirements of APM PALEO-01, BMP-PALEO-02, and MM-CUL-CEQA-3 (see Appendix E).

This PRIMMP was prepared by Paleo Solutions' Qualified Paleontologist Geraldine Aron, M.S., Principal Investigator Courtney Richards, M.S., and Senior Paleontologist Mathew Carson, M.S. GIS mapping was provided by GIS Analyst Barbara Webster, M.S., and Senior Paleontologist Mathew Carson, M.S.

2.1 PROJECT DESCRIPTION AND LOCATION

2.1.1 Project Description

DCRT proposes to construct, operate, maintain, and decommission a series-compensated, 500 kV AC overhead transmission line within a 200-foot ROW, which spans approximately 114 miles from the APS Delaney Substation near the community of Tonopah, Maricopa County, Arizona to the SCE Colorado River Substation near the City of Blythe, Riverside County, California (Figure 1). The purpose of the Project is to transmit 3,200 MW between the two substations and to provide connection capability for new energy projects in the region. The 114-mile route proposed by DCRT (i.e., the Proposed Action of the Draft EIS) would parallel an existing transmission line and other linear facilities, such as the Devers to Palo Verde Number 1 Transmission Line, with 97 miles in Arizona and 17 miles in California. The Proposed Action would cross federal lands administered by the BLM, the BOR, the USFWS (Kofa National Wildlife Refuge), the DOD (Yuma Proving Ground), and the BIA (Colorado River Reservation) (Figure 1). In addition to the 114-mile route, a transmission line series compensation station, which includes a 12 kV electric distribution line, would be situated along the middle of the route and would be constructed parallel to the Devers to Palo Verde Number Transmission Line, south of Vicksburg, Arizona (Figure 1).

Due to the scope of the Project and its intersections with federal lands, the BLM required an EIS to study impacts of the Project and to assess Project alternatives. In addition to the Proposed Action described above, the Draft EIS identified Four Action Alternatives and associated subalternatives, which are composed of individual segments that can be interchanged among the different alternatives. The four alternatives include Alternative 1: Interstate 10 Route, Alternative 2: BLM Utility Corridor, Alternative 3: Avoidance Route, and Alternative 4: Public Lands Emphasis Route; the Draft EIS contains a detailed description and assessment of the Four Action Alternatives, so they will not be discussed in detail here. For the purposes of this PRIMMP, the BLM preferred route(s), composed of various individual segments and alternative segments extracted from portions of the Proposed Action and all Four Action Alternatives and associated subalternatives, is discussed herein and referred to as "the Project" (Figure 1; Appendix B); however, note that the Project alignment has not been finalized at the time of drafting this PRIMMP and may change after approval of the Final EIS in 2019. The BLM preferred route (i.e., the Project area) intersects land administered by the State of Arizona, BLM, BOR, and DOD (Yuma Proving Ground), as well as private/undetermined land

(Table 1). The subalternative route CB-03, which is not part of the BLM's preferred route, also intersects land administered by the BIA (Colorado River Reservation) and is included in this report (Table 1; Appendices B and F).

2.1.2 Project Location

The Project spans from the APS Delaney Substation near the community of Tonopah, Maricopa County, Arizona to the SCE Colorado River Substation near the City of Blythe, Riverside County, California (Figure 1; Appendix B). The Project area and additional subalternatives described in this PRIMMP encompass approximately 4,457 acres and are mapped on the USGS Saddle Mountain (AZ), Burnt Mountain (AZ), Big Horn Peak (AZ), Courthouse Well (AZ), Lone Mountain (AZ), Hope SE (AZ), Hope SW (AZ), New Water Well (AZ), Vicksburg (AZ), Bear Hills (AZ), Plomosa Pass (AZ), Quartzsite (AZ), South of Quartzsite (AZ), Cunningham Mountain (AZ), Dome Rock Mountains SW (AZ), Blythe (AZ and CA), Ripley (CA), and Roosevelt Mine (CA) 7.5-minute topographic quadrangles. The Project area intersects land administered by the State of Arizona, BLM, BOR, and DOD (Yuma Proving Ground), as well as private/undetermined land. Public Land Survey System (PLSS) and land surface management/ownership are provided in Appendix F.

2.2 POTENTIAL FOSSIL YIELD CLASSIFICATION SYSTEM

The PFYC system was developed by the BLM (BLM, 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC system has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential) and U (unknown potential). This system is intended to aid in predicting, assessing, and mitigating paleontological resources. The PFYC ranking system is summarized in Table 2.

In the baseline technical study of the proposed route (i.e., the Proposed Action) and the alternative segments in support of the Draft EIS, the BLM's PFYC system was used to classify mapped geologic units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. The baseline technical study used existing PFYC maps and geologic unit tables published by the BLM, including the BLM's Desert Renewable Energy Conservation Plan EIS and its supporting paleontological resource appendix (BLM, 2014), and the U.S. Department of Energy and BLM Programmatic EIS, Designation of Energy Corridors on Federal land in 11 Western States and its supporting PFYC appendix (U.S. Department of Energy and BLM, 2007) to classify geologic units within the Ten West Link Transmission Line corridor(s) within California and Arizona, respectively. Geologic mapping data was based on digital geologic maps of California and Arizona from the U.S. Geological Survey (2014); however, these geologic maps are at low geographic resolutions, such as 1:750,000 scale for California and 1:1,000,000 scale for Arizona, which do not comply with MM CUL-CEQA-3, which requires all geologic and paleontological potential (PFYC) maps to be assessed at a scale resolution of 1:100,000 or higher. Moreover, the low resolution of geologic mapping used in the baseline study resulted in a broad range of PFYC assignments (PFYC 2/3/U) for one mapped geologic unit, which is unsuitable for defining paleontological mitigation and/or monitoring requirements. Additionally, some of the geologic units were given PFYC assignments based on previous versions of the BLM PFYC system classes and not on the most recent BLM (2016) description of the PFYC system (Table 2). For example, some Holocene-age sedimentary geologic units were assigned Very Low (PFYC 1) paleontological potential; however, these units should be Low (PFYC 2) paleontological potential based on the most recent version of the BLM's PFYC system (BLM, 2016) (Table 2).

For this PRIMMP, Paleo Solutions has refined the geologic mapping of the Project area to use the highest resolution geologic maps available and published by Miller (1970), Ort and Skotnicki (1993),

Richard et al. (1994), Sherrod et al. (1990), and Stone (1988-1990, and 2006), ranging in scale from 1:24,000 and 1:100,000, pursuant to MM CUL-CEQA-3 and following best practices in mitigation paleontology (Murphey et al., 2014). Additionally, the paleontological potential of the Project area was re-assessed based on the refined geologic mapping and fossil occurrence data.

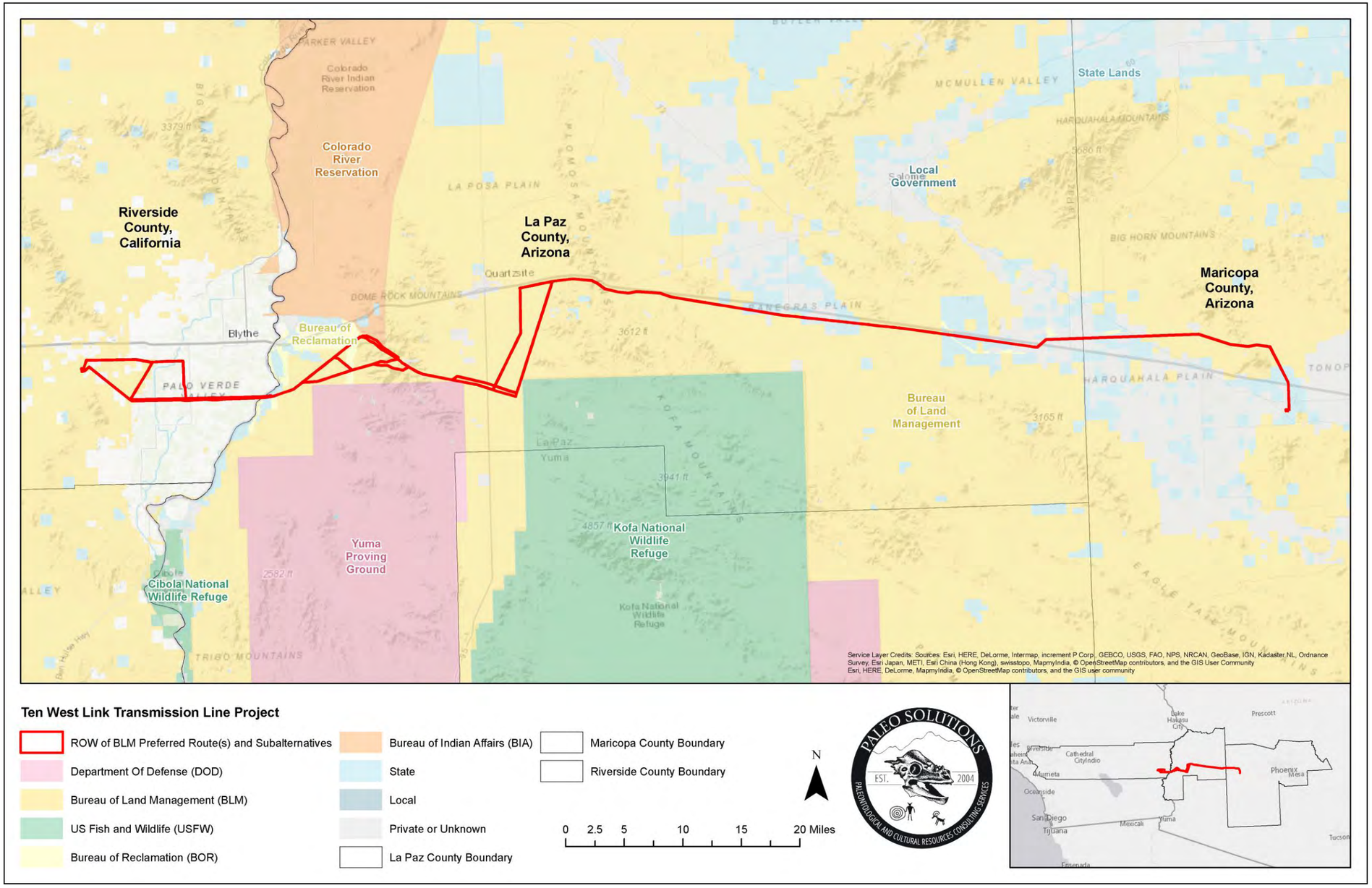

Figure 1. Project location map.

Table 1. Surface Management of the BLM Preferred Route(s) and Subalternatives

Segment	State	Surface Management
CA-06	CA	BLM
CA-07	CA	BLM
CA-09	CA	BLM
CB-01	AZ	BLM
CB-02	AZ	BLM
CB-03	AZ	BLM; BIA Colorado River Reservation
CB-04	AZ	BLM; BOR
CB-05	AZ	BLM; BOR
CB-06	AZ	BLM; BOR
I-01	AZ	BLM; BOR; PVT; ST
I-02	AZ	BLM
I-03	AZ	BLM; PVT; ST
I-04	AZ	BLM
I-05	AZ	BLM
Line Measure	CA	BLM
Proposed P-01	AZ	BLM; PVT; ST
P-07	AZ	BLM
P-08	AZ	BLM
P-08/09 North Alternative	AZ	BLM
P-09	AZ	BLM; DOD Yuma Proving Ground
P-10	AZ	BLM
P-11 Alterative	AZ	BLM; BOR
P-12	AZ	BLM; BOR
P-13	AZ	BLM
P-14	AZ	BLM
P-15E	AZ	BLM; ST
P-15W	AZ; CA	ST
P-16	CA	BLM
P-16S	AZ; CA	BLM; ST
P-17	CA	BLM
P-18	CA	BLM
X-05	AZ	BLM
X-06	AZ	BLM
X-15	CA	BLM
X-16	CA	BLM
X-19	CA	BLM

Table 2. Potential Fossil Yield Classification (BLM, 2016)

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary (PFYC System)
1 = Very Low Potential	Geologic units are not likely to contain recognizable paleontological resources.
	Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
	Units are Precambrian in age.
	Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 = Low	Geologic units are not likely to contain paleontological resources.
	Field surveys have verified that significant paleontological resources are not present or are very rare.
	Units are generally younger than 10,000 years before present.
	Recent eolian deposits
	Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely
	Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.
3 = Moderate Potential	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
	Marine in origin with sporadic known occurrences of paleontological resources.
	Paleontological resources may occur intermittently, but these occurrences are widely scattered
	The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.
	Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
4 = High Potential	Geologic units that are known to contain a high occurrence of paleontological resources.
	Significant paleontological resources have been documented but may vary in occurrence and predictability.
	Surface-disturbing activities may adversely affect paleontological resources.
	Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present.
	Illegal collecting activities may impact some areas.
	Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.
5 = Very High Potential	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
	Significant paleontological resources have been documented and occur consistently
	Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
	Unit is frequently the focus of illegal collecting activities.
	Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary (PFYC System)
U = Unknown	Geologic units that cannot receive an informed PFYC assignment
	Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is unknown.
	Geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail.
	Scientific literature does not exist or does not reveal the nature of paleontological resources.
	Reports of paleontological resources are anecdotal or have not been verified.
	Area or geologic unit is poorly or under-studied.
	BLM staff has not yet been able to assess the nature of the geologic unit.
	Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

3.0 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES

As defined by Murphey and Daitch (2007): "Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are used to:

- Study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- Elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- Reconstruct ancient environments, climate change, and paleoecological relationships;
- Provide a measure of relative geologic dating that forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
- Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- Study patterns and processes of evolution, extinction, and speciation; and
- Identify past and potential future human-caused effects to global environments and climates."

Fossil resources vary widely in their relative abundance and distribution and not all are regarded as significant. According to the BLM IM 2009-011, a "Significant Paleontological Resource" is defined as:

> "Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include those that lack provenience or context, lack physical integrity due to decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities" (BLM, 2008).

Vertebrate fossils, whether preserved remains or track ways, are classified as significant by most state and federal agencies and professional groups (and are specifically protected under the California Public Resources Code). In some cases, fossils of plants or invertebrate animals are also considered significant and can provide important information about ancient local environments.

The full significance of fossil specimens or fossil assemblages cannot be accurately predicted before they are collected, and in many cases, before they are prepared in the laboratory and compared with previously collected fossils. Pre-construction assessment of significance associated with an area or formation must be made based on previous finds, characteristics of the sediments, and other methods that can be used to determine paleoenvironmental and taphonomic conditions.

4.0 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

This section of the report presents the federal, state, and local regulatory requirements pertaining to paleontological resources that will apply to this project.

4.1 FEDERAL REGULATORY SETTING

If any federal funding is used to wholly or partially finance a project, it is sited on federal lands, involves a federal permit, and/or includes a perceived federal impact, federal laws and standards apply, and an evaluation of potential impacts on paleontological resources may be required. The management and preservation of paleontological resources may be required. The management and preservation of paleontological resources on public and federal lands are prescribed under various laws, regulations, and guidelines.

4.1.1 National Environmental Policy Act (16 USC Section 431 et seq.)

The National Environmental Policy Act of 1969, [NEPA] as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258 § 4(b), Sept. 13, 1982) recognizes the continuing responsibility of the Federal Government to "preserve important historic, cultural, and natural aspects of our national heritage . . ." (Sec. 101 [42 USC § 4321]) (#382). With the passage of the Paleontological Resources Preservation Act (PRPA) (2009), paleontological resources are considered to be a significant resource and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact.

4.1.2 Antiquities Act of 1906 (16 USC 431-433)

The Antiquities Act of 1906 states, in part:

> That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the act itself, or in the act's uniform rules and regulations (43 CFR 3), "objects of antiquity" has been interpreted to include fossils by the National Park Service, the BLM, the US Forest Service, and other federal agencies. Permits to collect fossils on lands administered by federal agencies are authorized under this act. However, due to the large gray areas left open to interpretation due to the imprecision of the wording, agencies are hesitant to interpret this act as governing paleontological resources.

4.1.3 Paleontological Resources Preservation, Omnibus Public Lands Act, Public Law 111-011, Title VI, Subtitle D (PRPA, 2009)

This legislation directs the Secretaries (Interior and Agriculture) to manage and protect paleontological resources on federal land using "scientific principles and expertise." PRPA incorporates most of the recommendations of the report of the Secretary of the Interior entitled Assessment of Fossil Management on Federal and Indian Lands (2000) in order to formulate a consistent paleontological resources management framework. In passing the PRPA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The PRPA codifies existing policies of the BLM, National Park Service, U.S. Forest Service, Bureau of Reclamation, and U.S. Fish and Wildlife Service, and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands;
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants);
- Uniform definitions for "paleontological resources" and "casual collecting"; and
- Uniform requirements for curation of federal fossils in approved repositories.

This document does not specifically trigger any paleontological requirements, other than those under NEPA for project impact evaluations if there is a federal nexus.

4.1.4 Federal Land Policy and Management Act (FLPMA) of 1976

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1712[c], 1732[b]); sec. 2, Federal Land Management and Policy Act of 1962 [30 U.S.C. 611]; Subpart 3631.0 et seq.), Federal Register Vol. 47, No. 159, 1982 does not refer specifically to fossils. However, "significant fossils" are understood and recognized in policy as scientific resources. Permits, which authorize the collection of significant fossils for scientific purposes, are issued under the authority of FLPMA. Under FLPMA, federal agencies are charged to:

Manage public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, archaeological, and water resources, and, where appropriate, preserve and protect certain public lands in their natural condition (Section 102 (a)(8) (11));

Periodically inventory public lands so that the data can be used to make informed land-use decisions (Section 102(a)(2)); and

Regulate the use and development of public lands and resources through easements, licenses, and permits (Section 302(b)).

4.1.5 BLM Procedures and Policies for Managing Paleontological Resources

The PFYC system was developed by the BLM (2016) and provides an estimate of the potential that significant paleontological resources will be discovered within a particular mapped geological unit. The system is used to determine potential impacts to paleontological resources for federal actions involving surface disturbance, land use planning, or land tenure adjustment. Implementation of the PFYC system does not require changes to existing land use plans, project plans, or other completed efforts. However, integration into plans presently being developed is recommended. The IM 2016-124 revision is an update to the guidance that was introduced in IM 2008-009 (2007).

The BLM Manual and Handbook H-8270-1 [1998] provides policies and direction for the BLM's Paleontological Resource Management Program as well as detailed procedures and standards for implementing policies. According to Section 6 of the BLM Manual and Handbook H-8270-1 [1998], it shall be BLM's policy to:

1) Actively work with other Federal, State, and Local Government Agencies, professional organizations, private land owners, educational institutions, and other interested parties to enhance and further the BLM's and the public's needs and objectives for paleontological resources.

2) Consider paleontological resource management a distinct BLM program, to be given full and equal consideration in all its land use planning and decision making actions.

3) Maintain a staff of professional paleontologists to provide BLM decision makers with the most current and scientifically sound paleontological resource data and advice.

4) Mitigate adverse impacts to paleontological resources as necessary.

5) Facilitate appropriate public and scientific use of and interest in paleontological resources.

6) Utilize the additional skills and resources of the Bureau's recreation and minerals programs to develop and implement interpretation strategies and products to enhance public understanding, appreciation, and enjoyment of paleontological resources.

7) Vigorously pursue the protection of paleontological resources from theft, destruction, and other illegal or unauthorized uses.

8) Authorize land tenure adjustments, when appropriate, as means to protect paleontological localities.

4.2 STATE REGULATORY SETTING

4.2.1 State of California

California Environmental Quality Act (CEQA)

The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in the Guidelines for Implementation of CEQA (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations) and further amended January 4th, 2013. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (State CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C).

State of California Public Resources Code

The State of California Public Resources Code (Chapter 1.7), Sections 5097 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, and define the excavation, destruction, or removal of paleontological "sites" or "features" from public lands without the express permission of the jurisdictional agency as a misdemeanor. As used in Section 5097, "state lands" refers to lands owned by, or under the jurisdiction of, the state or any state agency. "Public lands" is defined as lands

owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

4.3 LOCAL REGULATORY SETTING

Maricopa County and La Paz County do not contain goals or policies pertaining to paleontological resources within their respective county Comprehensive Plans (County of Maricopa, 2016; County of La Paz; 2005). Additionally, the Tonopah/Arlington Area Plan (County of Maricopa, 2000) and the Town of Quartzsite, Arizona General Plan (2014) do not contain goals or policies pertaining to paleontological resources. Therefore, these jurisdictions are omitted from this report.

4.3.1 Riverside County

The Riverside County General Plan requires consideration of paleontological resources under the Multipurpose Open Space Element of the general plan (County of Riverside, 2015). The Riverside County General Plan recommendations are based on the Society of Vertebrate Paleontology (SVP) Guidelines (SVP, 2010) for the mitigation of paleontological resources. The Multipurpose Open Space Element of the general plan (County of Riverside, 2015) provides the following requirements for paleontological sensitive areas within the county:

- OS 19.6 Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as shown on Figure OS-8, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.

- OS 19.7 Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

- OS 19.8 Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.

- OS 19.9 Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

4.3.2 City of Blythe

The City of Blythe General Plan 2025 requires consideration of paleontological resources under the Open Space and Conservation Elements section of the general plan (City of Blythe, 2007). The general plan requires that a site-specific analysis is conducted for future development projects within the planning area (City of Blythe, 2007). The City of Blythe General Plan 2025 contains one guiding policy, *Policy 25: Protect archaeologic, historic, and paleontologic resources for their aesthetic, scientific, educational, and cultural value* (City of Blythe, 2007). Furthermore, the Open Space and Conservation Elements section contains two implementation policies, which require institutional records searches for areas of high sensitivity, retention of a consulting archaeologist (or paleontologist) to conduct field

reconnaissance surveys, and/or preparation of a mitigation plan outlining mitigation measures that are consistent with state law.

5.0 GEOLOGY AND PALEONTOLOGY

The Project area is located within the Basin and Range Geomorphic Province in Arizona, as well as the eastern portion of the Colorado Desert Geomorphic Province in California. The Basin and Range includes most of the western United States and portions of northwestern Mexico that formed as a result of tectonic compression and subsequent extension approximately 20 to 17 million years ago during the Miocene. The Basin and Range is characterized by northwest-southeast-trending mountain ranges of igneous-metamorphic formations, separated by broad, nearly flat depositional basins filled with relatively younger alluvial or volcanic deposits (Norris and Webb, 1990). The Colorado Desert lies mostly below sea level and is located on the land extension of the Gulf of California. The province is bounded in the north by the southern edge of the Transverse Ranges, in the east by the Colorado River, in the west by the Peninsular Ranges, and in the south by Mexico (Norris and Webb, 1990) and represents a depression block formed as a result of tectonic rifting along the Gulf of California.

Geologic history of the overall region spans the Proterozoic to the present. Within the Basin and Range, the oldest rocks are early to middle Proterozoic granitic basement rocks formed deep below the earth's surface and early to middle Proterozoic high- to low-grade metamorphic rocks, such as gneiss, schist, and phyllite. Portions of the Project area situated north-northwest of the Delaney Substation are near the southern edge of the Big Horn Mountains, which consist of Proterozoic metamorphic rocks with Mesozoic igneous intrusions, which were subsequently overlain by Miocene basalt-rhyolite volcanic rocks and sedimentary rocks. West of Delaney Substation and south of the Project alignment, the northwest- to southeast-trending Eagletail Mountains consist of eroded basaltic cliffs and peaks of Tertiary- to Quaternary-age. The Plomosa and Dome Rock mountain ranges, located adjacent to Quartzsite, Arizona and Blythe, California, consist of sedimentary geologic units formed during the Paleozoic, as well as volcanic and sedimentary rocks of Mesozoic-age. Within the Colorado Desert of California, the Project area transverses the Palo Verde Valley, which consists of Pliocene- through Holocene-age alluvial deposits underlain by Miocene- and Pliocene-age sedimentary deposits and Miocene-age fanglomerate deposits. Situated northwest of the Palo Verde Valley, the McCoy Mountains consist of sandstone, mudstone, and conglomerate of the McCoy Mountains Formation, with extensive igneous rocks, composed of andesite, rhyolite, granite, and basalt rocks, with flows, dikes, and pyroclastic deposits (Norris and Webb, 1990).

Geologic units underlying the Project area and within a quarter-mile buffer were mapped by Miller (1970), Ort and Skotnicki (1993), Richard et al. (1994), Sherrod et al. (1990), and Stone (1988-1990 and 2006) (Appendix B). In total, 42 geologic units were assessed within a quarter-mile buffer of the Project area, including Proterozoic slaty metavolcanics rocks (Xm); middle Proterozoic granitoid (Yg); Precambrian quartz monzonite (pCqm); Precambrian or Mesozoic metavolcanics rocks (pCv); Paleozoic(?) rocks and Precambrian and Mesozoic rocks, undifferentiated (pCu); Paleozoic(?) quartz-albite-muscovite-chlorite schist with meta-tuffaceous rock, Unit 3 (pC3); Paleozoic(?) vitreous quartzite, medium to massively bedded, Unit 4 (pC4); Paleozoic(?) dolomite, tan, chert, massively bedded, Unit 5 (pC5); Jurassic volcanic rocks (Jv); Jurassic volcanic rocks of Dome Rock sequence (Jv); Jurassic volcanic rocks of Dome Rock sequence, upper bedded unit (Jvbu); Cretaceous or Jurassic McCoy Mountains Formation, lower part, undivided (KJmlu); Miocene and Oligocene(?) volcanic rocks of Bear Hills (Tbh); Miocene and Oligocene(?) fanglomerate, sedimentary breccia, and slide blocks (Tf); Miocene or Oligocene andesite (Ta); Miocene or Oligocene lower basaltic volcanic rocks (Tbl); Miocene middle basalt unit (Tbm); Miocene felsic volcanic rocks (Tf); Miocene basalt of New Water Mountains (Tnw); Miocene fanglomerate (Tf); Tertiary(?) tufa (Tbt); Tertiary older hornblende-biotite andesite (Ta); Quaternary and Tertiary(?) alluvial fan and fluvial deposits (QTa);

Quaternary or Tertiary hornblende-biotite andesite (QTa); Quaternary or Tertiary basalt of Black Mesa (QTbu); Quaternary or Tertiary dissected fan deposits (QTdf); Quaternary or Tertiary older alluvium (QToa); Pleistocene and/or Pliocene alluvial deposits of the Ehrenberg area (QTe); Pleistocene or Pliocene alluvial deposits of Mule Mountains (QTmm); Quaternary alluvium and talus (Qat); Quaternary alluvium of modern washes (Qw); Quaternary surficial deposits (Qs); late to early Pleistocene alluvium (Qm/Qo); Pleistocene alluvial deposits of Palo Verde Mesa (Qpv); Holocene and late Pleistocene talus (Qt); Holocene and late Pleistocene alluvium/eolian deposits (Qyc/Qye/Qy); Holocene and Pleistocene alluvium (Qa); Holocene and Pleistocene alluvial-fan and alluvial-valley deposits, Unit 3 (Qa3); Holocene alluvial-fan and alluvial-valley deposits (Qa6); Holocene alluvium of modern Colorado River flood plain (Qr); Holocene eolian sand (Qs); and Holocene alluvium of modern washes (Qw). Note that geologic ages tagged with a "(?)" are estimates and represent poorly constrained geologic ages. These geologic units are described below, and their paleontological potential classifications as interpreted by Paleo Solutions are summarized in Table 3 (maps are presented in Appendix B).

5.1 PROTEROZOIC TO QUATERNARY INTRUSIVE AND EXTRUSIVE IGNEOUS ROCKS

The Project area is underlain by two Proterozoic intrusive igneous rocks and 14 Proterozoic to Quaternary extrusive igneous rocks, all of which have a very low (PFYC 1) potential to produce scientifically important paleontological resources (Appendix B; Table 3).

Igneous rocks are crystalline or non-crystalline rocks that form through the cooling and subsequent solidification of lava or magma. Intrusive (plutonic) igneous rocks form below the earth's surface, and extrusive (volcanic) rocks form on the earth's surface. Lava and magma are formed by the melting of pre-existing plutonic rocks in the earth's crust or mantle due to increases in temperature, changes in pressure, or changes in geochemical composition. Extreme temperatures in the environments in which intrusive igneous rocks form prevent the preservation of fossils. The formation of extrusive igneous rocks as a result of volcanic processes is associated with extremely high temperatures that also generally prevents the preservation of fossils.

The following Proterozoic to Quaternary intrusive and extrusive igneous rocks are present within the Project area or its quarter-mile buffer (Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990; 2006):

- Granitoid (Yg), Middle Proterozoic: Undivided granitoid unit ranging from porphyritic biotite monzogranite to granodiorite; lacks pre-Mesozoic tectonic fabric (Richard et al.., 1994).

- Slaty metavolcanics rocks (Xm), Proterozoic: Green-colored, fine-grained metavolcanics rocks; slaty fabric, likely originating from andesite; unit contains lenses of banded iron formation and quartz veins (Orts and Skotnicki, 1991).

- Quartz monzonite (pCqm), Precambrian: An intrusive igneous rock composed of even-grained biotite quartz monzonite, spanning an area of approximately four square miles (Miller, 1970).

- Metavolcanic rocks (pCv), Precambrian or Mesozoic: Partially metamorphosed rhyolitic to dacitic intrusive, flow, and tuffaceous rocks derived from volcanic activity; dark green to light gray in color; sheared from tectonic activity in some areas and locally schistose (Miller, 1970).

- Volcanic rocks (Jv), Jurassic: Mainly light gray to light greenish-gray, rhyodacitic volcanic and metavolcanics rocks composed of microcrystalline, felsic groundmass and phenocrysts of felsic minerals; generally unbedded, but commonly foliated and metamorphosed; deposited in an ash-flow tuff, flows, and hypabyssal porphyry (Richard et al., 1994; Stone, 2006).

- Volcanic rocks of Dome Rock sequence (Jv), Jurassic: Rhyolitic to dacitic, massive volcanic quarts porphyry, composed of microcrystalline, felsic groundmass and phenocrysts of quartz, feldspar, and biotite; foliated and metamorphosed, with local sandstone and conglomerate of reworked volcanics (Stone, 1988-1990).

- Volcanic rocks of Dome Rock sequence, upper bedded unit (Jvbu), Jurassic: Felsic tuff and tuffaceous sedimentary rock, thinly to thickly bedded; overlain by the McCoy Mountains Formation (Stone, 1988-1990).

- Volcanic rocks of Bear Hills (Tbh), Miocene and Oligocene?: Primarily basalt lava flows, with breccia, scoria, felsic tuff, andesite and rhyolite lava flows, and rhyolite plugs; includes minor sandstone, siltstone, and evaporite deposits; overlain by the New Water Mountains (Tnw) basalt (Sherrod et al., 1990).

- Andesite (Ta), Miocene or Oligocene: Andesitic lavas and hypabyssal intrusive rocks, with associated breccia and tuff; dark reddish-brown to gray; large flow deposits in which bedding and/or flow foliation is highly variable; present within the southern Little Harquahala Mounatins, northwestern Eagletrail Mountains, northwestern Bear Hills, and within the Bouse Hills (Richard et al., 1994).

- Lower basaltic volcanic rocks (Tbl), Miocene or Oligocene: Mafic volcanic rocks located throughout the Bouse Hills, Big Horn Mountains, Eagletail Mountains, and the Harquahala Mountains; ranges in lithology from vascular to amygdaloidal andesitic to basaltic lava flows; widely altered, including local replacement by brown to tan calcite; contains interbedded units of brown to reddish-brown sandstone, felsic tuff, conglomerate, monolithologic breccia, gray limestone, and orange iron-stained siliceous rock beds (Richard et al., 1994).

- Middle basalt unit (Tbm), Miocene: Includes Burnt Mountain volcanic rocks in Big Horn Mountains; rock types include aphyric to crystal-poor, slightly vesicular basalt lava, gray and brown variably porphyritic and vesicular andesite lava flows, and associated tuffs, lahars, and breccias (Richard et al., 1994).

- Felsic volcanic rocks (Tf), Miocene: Dacitic to rhyolitic lavas and pyroclastic rocks, forming dome complexes with associated breccia rinds and block and ash deposits; light colored with distal portions grading into light gray to white, massive to flow-banded felsic minerals, laterally grading into breccia and tuff (Richard et al., 1994).

- Basalt of New Water Mountains (Tnw), Miocene: Porphyritic to aphyric olivine basalt lava flows, with vesicles filled with calcite and silica, and interbedded with silicic volcanic rocks, including invasive and subjacent tuff and tuffaceous sandstone; overlain by fanglomerate deposits (Sherrod et al., 1990).

- Older hornblende-biotite andesite (Ta), Tertiary: Andesite breccia deposit, possibly several thousand feet thick, and composed of pink, gray, and reddish-brown hornblende-biotite andesite flow deposits, interbedded locally with tuffaceous sediments (Miller, 1970).

- Hornblende-biotite andesite (QTa), Quaternary and Tertiary: Dark gray to black; 200 to 400 feet thick, with individual flow approximately 50 feet thick; uncomfortably overlies andesite

breccia and older hornblende andesite (Ta); composed of small phenocrysts of hornblende, biotite, and plagioclase, with groundmass of plagioclase, glass, and opaque minerals; formed as lava flows, which abut against older volcanic rocks (Miller, 1970).

- Basalt of Black Mesa (QTbu), Quaternary and Tertiary: Volcanic deposits containing mineral olivine; subdivided into two parts: lower interbedded tuffaceous rocks, approximately 400 to 500 feet thick, with beds 10 to 50 feet thick; and upper basalt flows, approximately 700 feet thick, with individual flows 20 to 50 feet thick (Miller, 1970).

5.2 PALEOZOIC(?) METAMORPHIC ROCKS

The Project area is underlain by two Paleozoic(?) metamorphic rock units, both of which have a very low (PFYC 1) potential to produce scientifically important paleontological resources (Appendix B; Table 3).

Metamorphic rocks result from the transformation of other rocks due to high temperature and high pressure. The parent rock can be igneous, sedimentary, or a pre-existing metamorphic rock. Metamorphic rocks comprise a large portion of the earth's crust and are classified on the basis of their chemistry and mineralogy. Most do not preserve fossils due to the conditions under which they were formed. However, metasedimentary rocks are formed from common sedimentary rock types such as limestone, shale, mudstone, siltstone, sandstone, and conglomerate. These types of metamorphic rocks do sometimes preserve fossils, but rarely fossils of scientific importance. Examples of fossils in metasedimentary rock include mollusks preserved in marble and echinoderms and graptolites preserved in slate.

The following Paleozoic metamorphic rocks are present within the Project area or its quarter-mile buffer (Miller, 1970):

- Quartz-albite-muscovite-chlorite schist, metatuffaceous rock, Unit 3 (pC3), Paleozoic(?): Approximately 450 feet thick, predominately quartz-albite-muscovite-chlorite schist, interbeds composed of buff- to pink-colored, carbonate, calcareous quartzite and approximately 10 feet thick; likely originated from fine-grained sedimentary clastic rock with interbeds of extrusive volcanic flows or intrusive hypabyssal sills (Miller, 1970).

- Vitreous quartzite, medium to massively bedded, Unit 4 (pC4), Paleozoic(?): Approximately 400 feet thick, overlying quartz-albite-muscovite-chlorite schist, metatuffaceous rock, Unit 3 (pC3) with a gradational contact; quartzite is massively bedded, vitreous, light tan to white, well sorted (Miller, 1970). According to Miller (1970), this unit may be correlative or equivalent to the Coconino Sandstone of the areas north and west of Black Mesa.

5.3 PALEOZOIC SEDIMENTARY ROCKS

According to Miller (1970), Paleozoic(?) rocks and Precambrian or Mesozoic rocks, undifferentiated (pCu) are present within a quarter-mile buffer of the Project area and may belong to the Precambrian or Mesozoic metavolcanic rocks described in section 5.1. These rocks consist of deformed dolomite and sheared metavolcanic rocks (Miller, 1970); however, they remain poorly studied and may be correlative to other Paleozoic sediments or volcanic deposits in the immediate vicinity (Appendix B; Table 3).

Overlying the Paleozoic(?) metamorphic vitreous quartzite, medium to massively bedded, Unit 4 (pC4) is the Paleozoic(?) dolomite, tan, chert, massively bedded, Unit 5 (pC5) (Appendix B; Table 3). Unit 5 consists of tan, massively bedded carbonate rock, with irregularly distributed chert masses, and is approximately 400 feet thick; though, the true thickness is difficult to ascertain due to its poor bedding (Miller, 1970). The lower contact between the underlying Unit 4 and Unit 5 consists of a

bedding-fault, and the upper contact of Unit 5 is also faulted, abutting Unit 5 against the underlying Unit 3.

The Paleozoic(?) dolomite, tan, chert, massively bedded, Unit 5 (pC5), as well as the underlying metamorphic Units 4 and 3 (see previous section), have undergone extreme plastic deformation, in stark contrast to the brittle deformation of the rocks in the Quartzsite region (Miller, 1970). Unit 5 may be correlative or equivalent to the Mississippian-age Escabrosa Limestone, which consists of 415 feet of dolomite, limestone, cherty limestone of southeastern Arizona, which has yielded invertebrate fossils of *Syringopora surcularia* (tabulate coral) and *Vesiculophyllum* cf. *V. incrassatum* (rugose coral); however, Miller (1970) cautions that this correlation may not be positive.

The Paleobiology Database (PBDB) and the University of California Museum of Paleontology (UCMP) collections database contain no records of Paleozoic fossils within the alignment of the Project area or its vicinity (PBDB, 2018; UCMP, 2018). However, Paleozoic sedimentary rocks from northern, eastern, and southern Arizona in general have yielded numerous invertebrate fossil taxa, including corals, brachiopods, bryozoans, bivalves, gastropods, and echinoderms, as well as vertebrate fossils of shark (Chrondrichthyes) (PBDB, 2018; UCMP, 2018). Although dolomitized limestone typically does not yield well preserved fossils due to chemical alterations of the original calcium carbonate sediments and shelly fossils, Paleozoic(?) rocks and Precambrian or Mesozoic rocks, undifferentiated (pCu), and Paleozoic(?) dolomite, tan, chert, massively bedded, Unit 5 (pC5) may contain fossils, especially if correlative or equivalent to fossiliferous limestone units elsewhere in Arizona, as suggested by Miller (1970). Therefore, until these geologic units can be further assessed in the field, Paleozoic(?) rocks and Precambrian or Mesozoic rocks, undifferentiated (pCu), and Paleozoic(?) dolomite, tan, chert, massively bedded, Unit 5 (pC5) both have an unknown (PFYC U) paleontological potential.

5.4 CRETACEOUS AND JURASSIC SEDIMENTARY ROCKS

One Cretaceous and Jurassic sedimentary rock unit is mapped by Stone (1988-1990; 2006), consisting of the McCoy Mountains Formation, lower part, undivided (KJmlu) (Appendix B; Table 3). This geologic unit is present within the McCoy Mountains, Dome Rock Mountains, Plomosa Mountains, and Livingston Hills and is composed of tan quartzose sandstone and maroon mudstone and siltstone, correlative to the Member A, consisting of tan, fine- to medium-grained quartzite and minor chert- and quartzite-clast conglomerate interbedded with maroon mudstone and siltstone that yields calcareous nodules and lenses (Stone, 1988-1990). Conglomerate clasts of the McCoy Formation, lower part, undivided are also composed of volcanic rocks (Stone, 1988-1990). Stone (2006) further elaborates that the McCoy Mountains Formation is primarily sandstone and conglomerate, with minor shale, mudstone, and siltstone, and is largely or entirely of fluvial origin. Geologic mapping by Stone (1988-1990) divides the McCoy Mountains Formation, lower part, into five informal members (Members A through E), with the upper part contain seven additional informal members (Members F through L) (Stone, 2006). The maximum thickness of the lower part is approximately 7,710 feet (Stone 1988-1990).

According to the PBDB (2018) and the UCMP (2018) online database, no paleontological resources have been recovered from the McCoy Mountains Formation, lower part, undivided (KJmlu). However, sandstone, shale, mudstone, and siltstone layers of fluvial origin may contain scientifically significant paleontological resources. Therefore, the McCoy Mountains Formation, lower part, undivided (KJmlu) has a moderate (PFYC 3) paleontological potential.

5.5 MIOCENE AND OLIGOCENE SEDIMENTARY ROCKS

According to geologic mapping by Stone (2006), Miocene and Oligocene(?) fanglomerate, sedimentary breccia, and slide blocks, undivided (Tf), are exposed along Riverside Mountains and

consist of distinctly to indistinctly bedded, poorly to well sorted conglomerate and sandstone, consisting of angular to rounded clasts transported downslope. The total thickness of these deposits can be more than 1 kilometer thick (Stone, 2006). Additionally, another Miocene-age fanglomerate (Tf) unit is mapped by Sherrod et al. (1990) in the Vicksburg quadrangle and consists of poorly to moderately sorted, moderately to well-consolidated sand and gravel exposed the Basalt of Black Mesa (Tbm). Megabreccia and sedimentary breccia are also present near the base of the Tertiary stratigraphic section in the Eagletail Mountains and near the top of the stratigraphic section in the Big Horn Mountains (Richard et al., 1994) (Appendix B; Table 3).

Because these geologic units are not given formal formation names, they are not searchable within the PBDB and the UCMP online database. Fanglomerates and breccias form under high-energy conditions that would destroy any possible fossil material during transport and deposition. However, interbedded finer-grained deposits within the fanglomerate and breccias may contain scientifically significant paleontological resources. Therefore, until these geologic units can be further assessed in the field, Miocene and Oligocene(?) fanglomerate, sedimentary breccia, and slide block, undivided (Tf) and Miocene-age fanglomerate (Tf) have an unknown (PFYC U) paleontological potential.

According to geologic mapping by Stone (1988-1990), Tertiary(?) tufa (Tbt) deposits are present in the Blythe 30' x 60' quadrangle, and consist of thin, locally extensive sheets of white to light-gray limestone, derived from carbonate mineral precipitate from ambient temperature water. These tufa deposits have been noted to coat Miocene and older bedrock units and locally includes minor conglomerate deposits (Stone, 1988-1990). Tertiary(?) tufa (Tbt) deposits have a very low (PFYC 1) paleontological potential.

5.6 UNNAMED TERTIARY AND OLDER QUATERNARY SEDIMENTARY DEPOSITS

The Project area and its quarter-mile buffer are underlain by 14 unnamed Tertiary and older Quaternary (Pleistocene to Holocene) sedimentary deposits (Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990; 2006), which have a moderate (PFYC 3) to low (PFYC 2) paleontological potential (Appendix B; Table 3).

Geologic units with a moderate (PFYC 3) paleontological potential are: Quaternary and Tertiary(?) alluvial fan and fluvial deposits (QTa), Quaternary and Tertiary dissected fan deposits (QTdf), Quaternary and Tertiary older alluvium (QToa), Pleistocene and/or Pliocene alluvial deposits of the Ehrenberg area (QTe), Pleistocene and Pliocene alluvial deposits of Mule Mountains (QTmm), late to early Pleistocene alluvium (Qm/Qo), and Pleistocene alluvial deposits of Palo Verde Mesa (Qpv), which are described below.

- Alluvial fan and fluvial deposits (QTa), Quaternary and Tertiary(?): Unconsolidated to weakly consolidated gravel and sand forming alluvial fans and terraces of the Colorado River; alluvial fans consist of angular, poorly sorted gravel and sand derived from nearby areas of high topographic relief; fluvial deposits consist of rounded, moderately to well sorted gravel and sand transported by the ancestral Colorado River, with crossbedded structures (Stone 1988-1990).

- Dissected fan deposits (QTdf), Quaternary and Tertiary: Consists of weakly consolidated fanglomerate gravel and sand, deeply dissected, forming longitudinal hills near mountain slopes (Stone, 1988-1990).

- Older alluvium (QToa), Quaternary and Tertiary: Within the Quartzsite quadrangle, consists of unconsolidated to poorly consolidated older alluvium, poorly sorted; distinguished from younger alluvium only by its topographic expression and degree of dissection (Miller, 1970).

- Alluvial deposits of the Ehrenberg area (QTe), Pleistocene and/or Pliocene: Heterogeneous deposits of sand and gravel, dissected; well-exposed on cliff faces and edge of the Colorado River flood plain and its tributary washes; consists of weakly to moderately consolidated, light gray to brownish-gray, fine- to coarse-grained sandstone, planar laminated to cross stratified; calcareous cementation of sand grains; sandstone unit contains pebbles and conglomeratic lenses, the latter of which can be several feet thick, of locally derived rounded and angular gravel (Stone, 2006).

- Alluvial deposits of Mule Mountains (QTmm), Pleistocene or Pliocene: Characterized by weakly to moderately consolidated sand and pebbly sand deposits, interbedded with locally derived gravel deposits; light gray, tan, and light reddish-brown, fine- to coarse-grained, well to moderately sorted, thin bedded, and locally cross-bedded; sand clasts contain rounded river pebbles of quartzite and chert; unit is deeply dissected (Stone, 2006).

- Alluvium (Qm/Qo), late to early Pleistocene: Middle to older alluvial deposits consisting undivided younger and older middle alluvium (Qm) and older alluvial deposits of coarse gravel and cobbles to boulders, with minor amounts of fine-grained sediments (Qo). Older alluvium commonly forms a 1-5 meters thick veneer unconformably overlying older basin fill or bedrock; both deposits are deeply dissected (Richard et al., 1994).

- Alluvial deposits of Palo Verde Mesa (Qpv), Pleistocene: Consists of unconsolidated to weakly consolidated deposits of sand, pebbly sand, silt, and clay exposed along the scarp of the Paleo Verde Mesa near the flood plain of the Colorado River; scarp consists of 20 to 30 meters thick exposures, with an upper, slope-forming unit of tan to light gray, sandy and pebbly alluvium and a lower, cliff-forming unit of light reddish-brown, interbedded fine-grained sand, silt, and clay (Stone, 2006).

Geologic units with a low (PFYC 2) paleontological potential are Quaternary alluvium and talus (Qat), Quaternary alluvium of modern washes (Qw), Quaternary surficial deposits (Qs), Holocene and late Pleistocene talus (Qt), Holocene and late Pleistocene alluvium/eolian deposits (Qyc/Qye/Qy), Holocene and Pleistocene alluvium (Qa), and Holocene and Pleistocene alluvial-fan and alluvial-valley deposits, Unit 3 (Qa3), which are described below.

- Alluvium and talus (Qat), Quaternary: Undifferentiated in the Quartzsite quadrangle; consists of heterogenous mixture of angular, unsorted boulders, cobbles, sand, and fine-grained sediments (Miller, 1970).

- Alluvium of modern washes (Qw), Quaternary: Unconsolidated, locally derived gravel and sand (Stone, 1988-1990).

- Surficial deposits (Qs), Quaternary: Consists of unconsolidated alluvium, colluvium, talus, sand, and gravel in modern washes; surficial sediments consist of unconsolidated to poorly consolidated gravel, sandy gravel, and sand, with silt and boulders; boulders and disaggregated rock rubble are also present around steep slopes (Ort and Skotnicki, 1993).

- Talus (Qt), Holocene and late Pleistocene: Consisting of unconsolidated, poorly sorted, angular gravel to boulder-sized sediments along the sides of steep slopes (Richard et al., 1994).

- Alluvium/eolian deposits (Qyc/Qye/Qy), Holocene and late Pleistocene: Active alluvial deposits consist of primarily sand and silt confined to active and recently active (Holocene-age) deposits of major drainages; eolian deposits consist of young (Holocene-age) fine-grained, non-indurated sand; and young alluvium (Holocene- to late Pleistocene-age) consists

of surfaces primarily underlain by well-sorted sand and stilt, with occurrences of fine gravel, slightly to highly dissected by active drainages (Richard et al., 1994).

- Alluvium (Qa), Holocene and Pleistocene: Poorly to moderately sorted, unconsolidated to weakly consolidated sand and gravel; alluvial fans that are deeply dissected, especially in intermontane areas, streams, and terraces along active washes of the New Water Mountains (Sherrod et al., 1990).

- Alluvial-fan and alluvial-valley deposits, Unit 3 (Qa3), Holocene and Pleistocene: Consists of alluvial-fan deposits of gravel and sand, slightly to heavily dissected, with desert pavement, consisting of moderately to highly compacted, angular to subangular rock fragments; dark brown to black desert varnish on some clasts, with relatively abundant granitic gravel with no varnish; pavement surfaces contain networks of sandy channels, varying in depth (Stone, 2006).

According to the UCMP online database (2018) numerous fossils have been recovered from unnamed Tertiary and Quaternary deposits throughout Arizona and California. From Maricopa County, Arizona, fossil tortoise (*Gopherus huecoensis*) and unspecified invertebrates have been recorded from unnamed Tertiary-age (Pliocene) deposits. From La Paz County, Arizona near Quartzsite, fossil gastropod (*Epiphragmophora hutsoni*) has been recorded from Quaternary to Recent deposits. Elsewhere in Arizona, Yavapai County has yielded Miocene-age horse (Hipparionini), oreodont (*Merychyus minimus*), and indeterminant mammal (Mammalia). From Mohave County, numerous fossil vertebrates have been recorded, including bird (Aves), fox (*Vulpes*), carnivoran mammals (Fissipeda), horse (*Pliohippus*, Hipparionini), and eutherian mammal (Eutheria), as well as fossil plants of Miocene-age. Within Coconino County, extinct hyena (*Chasmaporthetes ossifragus*), giant marmot (*Paenemarmota barbouri*), and tortoise (*Gopherus huecoensis*) have been recorded from Pliocene-age deposits. Navajo County has yielded Pleistocene-age fossil localities, including bighorn sheep (*Ovis canadensis*) and unspecified vertebrate and invertebrate fossils. From an unspecified county within Arizona, a fossil locality yielded Pleistocene-age horse (*Equus major*). The UCMP (2018) also contains records of fossil vertebrates and invertebrates of Plio-Pleistocene-age recorded within Riverside County, California, with one locality yielded unspecified vertebrate fossils from near Blythe.

Based on the widely spread, but scientifically significant, vertebrate, invertebrate, and plant fossils of Tertiary- to Quaternary-age, excluding late Pleistocene-age to Holocene-age deposits, from southwestern Arizona and southeastern California, these geologic units have a moderate (PFYC 3) paleontological potential. Late Pleistocene- to Holocene-age Quaternary sediments are likely too young to contain paleontological resources near the surface; thus, these geologic units have a low (PFYC 2) paleontological potential.

5.7 UNNAMED HOLOCENE SEDIMENTARY DEPOSITS

The Project area is underlain by four unnamed Holocene-age sedimentary deposits, all of which have a low (PFYC 2) potential to produce scientifically important paleontological resources (Appendix B; Table 3).

Holocene-age (less than 11,000 years old) sediments are typically too young to contain fossilized material (Society of Vertebrate Paleontology [SVP], 2010), but they may overlie sensitive older (e.g., Pliocene- and Pleistocene-age) deposits at variable depth. Holocene-age deposits are assigned a low (PFYC 2) paleontological potential at the surface using BLM (2016) guidelines; however, they have an unknown paleontological potential in the subsurface since there is potential for these deposits to be conformably underlain by older, paleontologically sensitive geologic units.

The following Holocene-age sedimentary deposits are present within the Project area (Stone, 2006):

- Alluvial-fan and alluvial-valley deposits (Qa6), Holocene: Characterized by a lack of desert varnish, fine-grained in size, consisting of sand, pebbly sand, and sandy pebble-gravel, with thin accumulations of eolian sand not mapped are present within this unit; proximal to mountain ranges, deposits consist of coarse-grained, unvarnished gravel deposits that grade downslope to fine-grained deposits; also includes minor washes and channels comparable to Holocene-age alluvium of modern washes (Qw) (Stone, 2006).

- Alluvium of modern Colorado River flood plain (Qr), Holocene: Consists of unconsolidated clay, silt, and sand; presently covered by agricultural land or thick vegetation (Stone, 2006).

- Eolian sand (Qs), Holocene: Consists of unconsolidated sand dunes and sheets, partially stabilized by vegetation (Stone, 2006).

- Alluvium of modern washes (Qw), Holocene: Characterized as unconsolidated, angular to subangular gravel and sand transported from local mountain ranges, with boulder- to cobble-sized clasts in wash deposits near mountain ranges, grading downstream to pebble and sand deposits; wash sediments grade laterally and downstream into alluvial sand and gravel (Stone, 2006).

Table 3. Paleontological Potential (PFYC) by Geologic Unit

Geologic Unit	Map Abbreviation	Age	Paleontological Potential (PFYC)
Slaty metavolcanic rocks	Xm	Proterozoic	Class 1 – Very Low
Granitoid	Yg	Middle Proterozoic	Class 1 – Very Low
Quartz monzonite	pCqm	Precambrian	Class 1 – Very Low
Metavolcanic rocks	pCv	Precambrian or Mesozoic	Class 1 – Very Low
Paleozoic(?) rocks and Precambrian and Mesozoic rocks, undifferentiated	pCu	Paleozoic?	Class U – Unknown
Quartz-albite-muscovite-chlorite schist; meta-tuffaceous rock, Unit 3	pC3	Paleozoic?	Class 1 – Very Low
Vitreous quartzite, medium to massively bedded, Unit 4	pC4	Paleozoic?	Class 1 – Very Low
Dolomite; tan, chert, massively bedded, Unit 5	pC5	Paleozoic?	Class U – Unknown
Volcanic rocks	Jv	Jurassic	Class 1 – Very Low
Volcanic rocks of the Dome Rock sequence	Jv	Jurassic	Class 1 – Very Low
Volcanic rocks of the Dome Rock sequence, upper bedded unit	Jvbu	Jurassic	Class 1 – Very Low
McCoy Mountains Formation, lower part, undivided	KJmlu	Cretaceous or Jurassic	Class 3 - Moderate
Volcanic rocks of Bear Hills	Tbh	Miocene and Oligocene?	Class 1 – Very Low
Fanglomerate, sedimentary breccia, and slide blocks	Tf	Miocene and Oligocene?	Class U – Unknown
Andesite	Ta	Miocene or Oligocene	Class 1 – Very Low
Lower basaltic volcanic rocks	Tbl	Miocene or Oligocene	Class 1 – Very Low
Middle basalt unit	Tbm	Miocene	Class 1 – Very Low
Felsic volcanic rocks	Tf	Miocene	Class 1 – Very Low
Basalt of New Water Mountains	Tnw	Miocene	Class 1 – Very Low

Geologic Unit	Map Abbreviation	Age	Paleontological Potential (PFYC)
Fanglomerate	Tf	Miocene	Class U – Unknown
Tufa	Tbt	Tertiary?	Class 1 – Very Low
Older hornblende-biotite andesite	Ta	Tertiary	Class 1 – Very Low
Alluvial fan and fluvial deposits	QTa	Quaternary and Tertiary?	Class 3 - Moderate
Hornblende-biotite andesite	QTa	Quaternary or Tertiary	Class 1 – Very Low
Basalt of Black Mesa	QTbu	Quaternary or Tertiary	Class 1 – Very Low
Dissected fan deposits	QTdf	Quaternary or Tertiary	Class 3 - Moderate
Older alluvium	QToa	Quaternary or Tertiary	Class 3 - Moderate
Alluvial deposits of the Ehrenberg area	QTe	Pleistocene and/or Pliocene	Class 3 - Moderate
Alluvial deposits of the Mule Mountains	QTmm	Pleistocene or Pliocene	Class 3 - Moderate
Alluvium and talus	Qat	Quaternary	Class 2 - Low
Alluvium of modern washes	Qw	Quaternary	Class 2 - Low
Surficial deposits	Qs	Quaternary	Class 2 - Low
Alluvium	Qm/Qo	Late to early Pleistocene	Class 3 - Moderate
Alluvial deposits of Palo Verde Mesa	Qpv	Pleistocene	Class 3 - Moderate
Talus	Qt	Holocene and late Pleistocene	Class 2 - Low
Alluvium/Eolian deposits	Qyc/Qye/Qy	Holocene and late Pleistocene	Class 2 - Low
Alluvium	Qa	Holocene and Pleistocene	Class 2 - Low
Alluvial-fan and alluvial-valley deposits, Unit 3	Qa3	Holocene and Pleistocene	Class 2 - Low
Alluvial-fan and alluvial-valley deposits, Unit 6	Qa6	Holocene	Class 2 - Low
Alluvium of modern Colorado River flood plain	Qr	Holocene	Class 2 - Low
Eolian sand	Qs	Holocene	Class 2 - Low
Alluvium of modern washes	Qw	Holocene	Class 2 - Low
Water	H2O	N/A	Class W - Water

6.0 RESEARCH GOALS

The sediments in the Project area have the potential to contain scientifically important fossil remains that could be unearthed during construction in areas where native sediments of moderate or unknown paleontological potential are disturbed, either at the surface or in the subsurface. The fossils found in southwestern Basin and Range and eastern Colorado Desert geomorphic provinces provide critically important paleoecological and paleoenvironmental data. They provide direct

evidence of the composition and phylogenetic diversity of the paleobiota, paleobiologic features of individual taxa, and evolutionary relationships of the fauna and flora through time. In combination, the fossil assemblages at individual localities, together with the sediments in which they are preserved, also provide indirect evidence of the nature of paleoclimates and paleoenvironments, and importantly, the geographic distributions of different paleoenvironment types, such as the fluctuating ocean shorelines, locations of inland lakes and swamps, upland habitats, and lowland habitats, such as basin floors. It is important to bear in mind that the type and scope of research that can be accomplished by the receiving institution or others, is entirely dependent upon the types and numbers of fossils that are discovered and their stratigraphic and sedimentological context. If no fossils are discovered, then no paleontological research will be possible.

The recovery of fossils from Project excavations as the result of implementation of the mitigation measures outlined below and in Appendix E, would add to existing paleontological data and help better document the prehistory of southwestern Arizona, where fossil locality data is scant, and of southeastern California. The recovered fossils will provide information that may be useful in more accurately and precisely determining the ages of the sedimentary units in which they were preserved depending upon the biostratigraphic utility of the fossil specimens and potential for radiometric dating. Depending upon the types of fossils that are recovered from Project excavations and the quality of their preservation, the existing fossil record of Arizona and California will be enhanced by the addition of new specimens of known taxa, the discovery of taxa that have not been previously reported from the general area, and possibly the discovery of previously unknown taxa. In combination, the fossil assemblage from the Project area would have the potential to add new paleoecologic and paleoenvironmental information to our existing knowledge of the Paleozoic to Holocene of southwestern Arizona and southeastern California.

7.0 MITIGATION AND FOSSIL RECOVERY PLAN

The mitigation and fossil recovery plan is designed to mitigate effects to paleontological resources in accordance with NEPA, and to reduce impacts on paleontological resources to below the level of significance pursuant to CEQA. The proposed mitigation plan consists of the following ten components that will be more fully described below:

1) Construction Monitoring
2) Fossil Recovery
3) Screenwashing of Bulk Matrix Sampling
4) Laboratory Preparation, Analysis, and Museum Pre-Curation
5) Reporting
6) Significance Criteria
7) Staffing and Schedule
8) Unanticipated Discoveries
9) Curation
10) Permits

7.1 CONSTRUCTION MONITORING

A BLM approved Project Paleontologist will attend the Project's pre-construction meeting to discuss mitigation concerns, field procedures for paleontology, safety protocols, and establish communications. Following the meeting, a site specific health and safety plan (HASP) with emergency contact information should be prepared. All monitoring personnel will be required to review the HASP prior to entry to the site and shall have a copy in their vehicle at all times. Prior to any project excavation, a Worker Environmental Awareness Program (WEAP) training for all earth moving personnel and their supervisors will be presented to inform them of the possibility for fossil

discoveries, as required by MM CUL-CEQA-3. The program will inform personnel of the types of fossils that may be encountered, the types of lithologies in which fossils could be preserved, the monitor's authority to temporarily halt or redirect work to evaluate discoveries, procedures to be followed if potential fossils are unearthed at the project site, and the penalties for disturbing paleontological resources.

In accordance with APM PALEO-01, BMP PALEO-02, and MM CUL-CEQA-3 a paleontological monitor will conduct full-time monitoring during all excavations impacting native sediments with moderate paleontological potential (PFYC 3), including Cretaceous or Jurassic McCoy Mountains Formation, lower part, undivided (KJmlu); Quaternary and Tertiary(?) alluvial fan and fluvial deposits (QTa); Quaternary and Tertiary dissected fan deposits (QTdf); Quaternary and Tertiary older alluvium (QToa); Pleistocene and/or Pliocene alluvial deposits of the Ehrenberg area (QTe); Pleistocene and/or Pliocene alluvial deposits of the Mule Mountains (QTmm); late to early Pleistocene alluvium (Qm/Qo); and Pleistocene alluvial deposits of Palo Verde Mesa (Qpv) (see Tables 2 and 3; see Appendix C).

Spot checking will be conducted daily in areas with unknown paleontological potential (PFYC U), including Paleozoic(?) rocks and Precambrian and Mesozoic rocks, undifferentiated (pCu); Paleozoic(?) dolomite; tan, chert, massively bedded, Unit 5 (pC5); Miocene and Oligocene(?) fanglomerate, sedimentary breccia, and slide blocks (Tf); and Miocene fanglomerate (Tf) (see Tables 2 and 3; see Appendix C). If sediments are deemed to be non-conducive to fossil preservation (e.g., high energy [very coarse grained], heavily oxidized [indicating long sediment exposure at the surface], etc.), then monitoring in those areas may be reduced at the discretion of the Project Paleontologist in consultation with the BLM.

Construction activities will be spot-checked when excavation depths exceed 10 feet in areas mapped as low paleontological potential (PFYC 2) geologic units to check for the presence of underlying geologic units of higher paleontological potential, including Quaternary alluvium and talus (Qat); Quaternary alluvium of modern washes (Qw); Quaternary surficial deposits (Qs); Holocene and late Pleistocene talus (Qt); Holocene and late Pleistocene alluvium/eolian deposits (Qyc/Qye/Qy); Holocene and Pleistocene alluvium (Qa); Holocene and Pleistocene alluvial-fan and alluvial-valley deposits, Unit 3 (Qa3); Holocene alluvial-fan and alluvial-valley deposits, Unit 6 (Qa6); Holocene alluvium of modern Colorado River flood plain (Qr); Holocene eolian sand (Qs); and Holocene alluvium of modern washes (Qw) (see Tables 2 and 3; see Appendix C). If it is subsequently determined that paleontologically sensitive deposits will not be impacted by Project activities, then monitoring in those areas may be reduced at the discretion of the Project Paleontologist in consultation with the BLM.

Paleontological monitoring will not be conducted for excavations impacting very low paleontological potential (PFYC 1) Proterozoic slaty metavolcanic rocks (Xm); middle Proterozoic granitoid (Yg); Precambrian quartz monzonite (pCqm); Precambrian and Mesozoic Metavolcanic rocks (pCv); Paleozoic(?) quartz-albite-muscovite-chlorite schist; metatuffaceous rock, Unit 3 (pC3); Paleozoic(?) vitreous quartzite, medium to massively bedded, Unit 4 (pC4); Jurassic volcanic rocks (Jv); Jurassic volcanic rocks of the Dome Rock sequence (Jv); Jurassic volcanic rocks of the dome rock sequence, upper bedded unit (Jvbu); Miocene and Oligocene(?) volcanic rocks of Bear Hills (Tbh); Miocene or Oligocene andesite (Ta); Miocene and Oligocene lower basaltic volcanic rocks (Tbl); Miocene middle basalt unit (Tbm); Miocene felsic volcanic rocks (Tf); Miocene basalt of New Water Mountains (Tnw); Tertiary(?) tufa (Tbt); Tertiary older hornblende-biotite andesite (Ta); Quaternary or Tertiary hornblende-biotite andesite (QTa); and Quaternary or Tertiary basalt of Black Mesa (QTbu) (see Tables 2 and 3; see Appendix C).

Paleontological resource monitoring of construction excavations involves field inspections of cut slopes, trenches, spoils piles, and all graded surfaces in accordance with project safety requirements for occurrences of freshly exposed fossil remains. The primary responsibility of paleontological

monitors should always be to adhere to all project safety requirements, and to only inspect and evaluate fossil discoveries when conditions are safe to do so. If a fossil is discovered by a monitor in a construction excavation, the monitor must immediately notify the equipment operator and/or site project manager to stop work, and then mark the area surrounding the site with flagging until the discovery can be fully explored and evaluated. The paleontological monitor shall notify the Project Paleontologist, who shall notify DCRT and the BLM via a phone call followed up by written documentation, photographs, and significance determination. If the fossil is collected, a letter to this effect will be submitted to the BLM along with a locality form. If it is a non-significant fossil discovery, the Project Paleontologist will notify the resident engineer and work may resume. Construction activities in the immediate vicinity of the site shall stop until authorization for work to continue is provided by the Project Paleontologist. If a concentration of fossils is found, the area will be flagged and the site project manager and Project Paleontologist will be notified to determine necessary action. Any action will be communicated to BLM.

All paleontological monitors will be trained in commercially reasonable construction site safety protocols prior to entering any construction site. Additional safety training may be provided to paleontological monitors by the contractor and required prior to entry to the project site. Paleontological monitors should always wear all required project specific personal protective equipment (PPE), review and retain a copy of a site-specific health and safety plan, and attend any required safety meetings. Monitors should be equipped with flagging, survey stakes, and tools for fossil exploration and recovery including x-acto knives, awls, brushes, picks, chisels and shovels. Other essential tools for monitors include chemical preservatives such as vinac or butvar, cyanoacrylate glue, specimen containers such as vials and plastic bags, a GPS receiver, a field notebook, data recording forms, a digital camera, and a plaster kit. All paleontological monitoring will be conducted by qualified monitors approved by the BLM under the direction of a Project Paleontologist who meets the criteria outlined in BMP PALEO-02 and MM CUL-CEQA-3.

Monitors will prepare daily monitoring logs that will be submitted to the Project Paleontologist.

7.2 FOSSIL RECOVERY

When scientifically significant fossil discoveries are made by construction monitors, they will be quickly and professionally explored and evaluated in order to minimize construction delays. Additional paleontologists should be brought to assist with the recovery as needed. Recoveries may consist of the relatively rapid removal of small isolated fossils from an active cut, to hand-quarrying of larger fossils over several hours, to excavations of large fossils or large numbers of smaller fossils from a bone bed over several days. The duration of each excavation is determined by the size, preservation, and number of fossils at each locality, and all excavations must be carried out in consultation with the site project manager.

Paleontological resources will be mapped, photographed, recorded, and collected for later documentation that will be included in the final technical report. At each paleontological locality, data recorded will minimally include the field number, date of discovery and date of collection, geographic coordinates, elevation, formation, stratigraphic provenance, lithologic description of sediment that produced the fossil(s), type(s) of fossils and type(s) of element(s), taphonomic and paleoenvironmental interpretations, associations with other fossils, photograph(s), and collector(s). All fossils must be properly labeled prior to removal from the locality where they were discovered. All scientifically important fossils should be recovered and fully documented within a detailed stratigraphic framework as construction conditions and safety considerations permit. Significance criteria and recovery procedures are discussed below.

7.3 SCREENWASHING OF BULK MATRIX SAMPLES

Scientifically significant fossils of small or even microscopic size consisting of vertebrates, invertebrates, plants, or trace fossils, may be discovered during the monitoring program. At the discretion of the Project Paleontologist in consultation with the BLM and DCRT, bulk matrix samples should be collected from such localities if it is determined that the fossils could yield scientifically important information. Such samples would be transported to the paleontological laboratory for soaking, re-drying, washing, and picking/sorting in order to fully document the microfaunal and microfloral diversity. The Society of Vertebrate Paleontology (SVP) guidelines (2010) recommend a minimum sample size of 2,000 pounds. However, in practice, the amount of matrix sampled should depend on the abundance or lack thereof of fossils preserved within the matrix (Murphey et al., 2014), which is typically ascertained by wet-screening of 20-pound test samples in the field. Sampling should be done in such a way as to prevent or minimize interference with construction. For example, construction equipment can often expedite the sampling process by assisting with the removal of matrix from the excavation and establishment of a stockpile in an area removed from construction equipment in order to permit the paleontological monitor to transfer the matrix from the stockpile to buckets and remove them from the site.

7.4 LABORATORY PREPARATION, ANALYSIS, AND MUSEUM PRE-CURATION

Following preparation, all fossils should be inventoried as part of the pre-curation process and then identified to taxon and element by a technical specialist, as necessary. Pre-curation involves the assignment of locality numbers and preparation of fossil locality forms, the assignment of unique catalogue numbers to each specimen, the application of specimen numbers to each fossil specimen, entry of specimen data into a computerized database, and the placement of each fossil into archival vials, trays or cradles, depending upon its size. The inventoried collection should be transferred to a paleontological repository along with all associated data. Fossil identification should be to the lowest taxonomic possible level (ideally Family or lower). All fossils should be labeled with their field locality number, which is traceable to the metadata including collector, date of collection, UTM coordinates (NAD83 datum), elevation, lithologic description, taxon, and element description at a minimum. The properly inventoried fossil collection should then be analyzed taxonomically, taphonomically, and/or biostratigraphically. The types of analyses that can be performed will be dependent upon the nature of the fossil collection. All data, including the results of the analysis, should be compiled along with the fossil specimen inventory and detailed paleontological locality forms, maps and photos for inclusion in the paleontological monitoring report. All scientifically significant fossils collected during the monitoring program will be transferred to the NHMLA, the current repository listed on Paleo Solutions' California and Arizona BLM Paleontological Use Permits, or another BLM-approved repository, where those fossils deemed to be appropriate for curation by the museum will be accessioned and permanently housed so that they will be available for scientific research, education, and display. Upon receipt of the fossil collection, a signed repository receipt form will be issued, and a copy will be appended in the final mitigation report.

7.5 REPORT

A confidential paleontological mitigation report will be prepared within 90 days of the completion of field work. The report shall include dates of field work, results of monitoring, fossil analysis, significance evaluation, conclusions, locality forms, and an itemized list of specimens. A signed confidential copy of the paleontological monitoring report shall be submitted to BLM, and approval will be requested to release the confidential report to CPUC. A signed non-confidential copy of the report shall be submitted to DCRT. Additionally, if construction monitoring results in the discovery

and recovery of paleontological resources, a copy of the report will be submitted along with the recovered fossils to the NHMLA (or another appropriate fossil repository). The report will be prepared according to BLM specifications, which includes two (2) confidential hardcopies sent to the BLM. Copies of the report in electronic (PDF) format will be sent to other agencies and DCRT. BLM approval of this report will signify the completion of the paleontological mitigation program.

7.6 SIGNIFICANCE CRITERIA

For the purpose of this project, scientifically significant fossils are generally defined as those that are identifiable to taxon and/or element, and thus are potentially useful for scientific research purposes. However, unidentifiable fossils may also be collected if they are potentially useful to the overall analysis (see Section 3). For example, an unidentifiable bone fragment of late Pleistocene age may be suitable for radiocarbon dating depending upon the preservation state of the bone. Rock or sediment samples may also be collected if they provide information necessary for depositional and paleoenvironmental interpretations.

Paleontological monitors should always use caution when making decisions about significance in the field, and collect fossils if they are unsure of their significance. For example, when monitoring construction sites, it is often difficult to see the full extent of a fossil being recovered because it is collected partially encased in sedimentary matrix and as a result it may not be possible to determine the significance of a fossil specimen until it has been partially prepared. Generally, bone fragments with no articular surfaces that are not associated with other fragments to which they might be re-assembled in the laboratory should not be collected, or should be discarded if they are found to be non-significant once they have been partially prepared in the laboratory.

7.7 UNANTICIPATED DISCOVERIES

Prior to earthmoving activities, the paleontological monitor shall inform construction personnel of the possibility for fossil discoveries, and will instruct personnel to immediately inform their supervisor if any bones or other potential fossils are unearthed at the Project site and a paleontological monitor is not present. In such a case, workers should immediately cease all activity within a 50-foot radius of the discovery site until a paleontologist can be mobilized to the Project site to examine and evaluate the find. Work may not resume in the discovery area until it has been authorized by the Project Paleontologist.

7.8 STAFFING AND SCHEDULE

A construction schedule has not been determined at this time, but the project is expected to start in 2019. The construction manager will notify the paleontological contractor at least 24 hours in advance (and up to 48 hours in advance when possible), when a monitor is needed on the construction site. It is not possible to predict the number and type(s) of fossils that may be discovered and recovered during construction.

All paleontological monitoring will be conducted by qualified monitors approved by the BLM under the direction of a Project Paleontologist who meets the criteria outlined in BMP PALEO-02.

7.9 CURATION

If significant paleontological resources are recovered, they will be curated at the NHMLA, the current repository listed on Paleo Solutions' California and Arizona BLM Paleontological Use Permits, or another BLM-approved repository. Storage fees will be paid for by the project owner, not the BLM, CPUC, or paleontological consultant. A curation agreement for NHMLA is attached as Appendix D.

7.10 PERMITS

All paleontological work will be conducted under California BLM Paleontological Use Permit CA-16-03P (Expiration March 16, 2019) and Arizona BLM Paleontological Use Permit AZ-000669 (Expiration August 13, 2021) (Appendix A). Fieldwork Authorizations will be obtained from the BLM Palm Springs-South Coast and Yuma Field Offices. Qualified Paleontologist, Geraldine Aron, M.S., will oversee all work as the permit holder and administer for the Project in collaboration with Paleo Solutions' Principal Investigator Courtney Richards, M.S., with oversight by Vertebrate Paleontologist Paul Murphey, Ph.D.

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APPENDIX A: BLM PALEONTOLOGICAL USE PERMITS

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Arizona State Office
One North Central Avenue, Suite 800
Phoenix, Arizona 85004-4427
www.blm.gov/az/

AUG 28 2018

8270 (9300)
Permit No. AZ-000669

Paleo Solutions
Attention: Geraldine Aron
911 S. Primrose Avenue, Unit N
Monrovia, CA 91016

Dear Ms. Aron:

Enclosed is a permit to conduct paleontological investigations on land administered by the Bureau of Land Management (BLM). Your permit number is AZ-000669. Please include it in any permit-related correspondence. Your permit is for survey/reconnaissance and limited surface collection of paleontological materials for 3 years, beginning August 13, 2018.

The Special Conditions attached to your permit contain permitting requirements. We would like to call your attention to the following three requirements, in particular:

1. Prior to beginning each season's field work, you must contact the Field Manager(s) who administers the area in which you will be working and obtain their signature on a copy of your permit. Maps and the addresses of BLM Arizona Field Offices are included with this letter.

2. A completed Paleontological Locality Form (8270-3) must be submitted for each location where fossils are collected or recorded.

3. Annual and final reports must be submitted as described in the Special Conditions.

If your work plans or any other stipulations of your permit change, please notify this office immediately to obtain appropriate modifications to your permit. If you have questions about our permitting requirements, please contact Matt Basham, Deputy Preservation Officer, at 602-417-9216, or by email at mbasham@blm.gov.

Sincerely,

Jody L. Weil
Deputy State Director
Resources and Planning

Enclosures

Form 8270-2
June 1999

Permit Number: AZ-000669

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PALEONTOLOGICAL RESOURCES USE PERMIT

Sec. 302(b) of P.L. 94-579, October 21, 1976, 43 U.S.C. 1732

1a. Permittee: Geraldine Aron, Courtney Richards, Paul Murphey	1b. Affiliation: Paleo Solutions, Inc.
2. Mailing address: 911 S. Primrose Ave., Unit N Monrovia, CA 91016	3. Telephone number: 562-7713 Fax: 626-359-0712 Field party: Fax:
4. Nature of authorized paleontological fieldwork: _X_ Survey and limited surface collection ___ Excavation	
5. Location of authorized paleontological fieldwork on public lands: Public lands administered by the BLM Arizona.	
6. Authorized start date: 08/13/2018	7. Expiration date: 08/13/2021
8. Name(s) of individual(s) responsible for planning, supervising, and carrying out fieldwork: Geraldine Aron, Courtney Richards, Paul Murphey, Betsy Kruk, Joey Raum, Kate Zubin-Stathopolous, Madeline Weigner, Matthew Carson,	
9. Repository name and address: Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007	
SPECIAL CONDITIONS ATTACHED TO THIS PERMIT ARE MADE A PART HEREOF.	
Jody L. Weil Approved by Jody L. Weil, Deputy State Director, Resources, Planning and Fire	8/28/18 Date:

Note: This permit is not valid unless signed by the appropriate Field Manager(s) at the beginning of each field season. The permittee is responsible for obtaining the Field Manager's signature, below:

_____
Field Manager, Field Office Date

_____
Field Manager, Field Office Date

_____
Field Manager, Field Office Date

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

California State Office
2800 Cottage Way, Suite W1623
Sacramento, CA 95825
www.blm.gov/ca

March 16, 2016

In Reply Refer To:
CA930 8151(P)

Geraldine Aron
Paleo Solutions, Inc.
911 S. Primrose Ave, Unit N
Monrovia, CA 91016

Dear Ms. Aron:

The Bureau of Land Management (BLM) is pleased to issue a 3-year Scientific Paleontological Permit (*CA-16-03P*) to Paleo Solutions, Inc. for use on Public Lands managed by California BLM as specified in your permit. This permit is issued under the authority of the Federal Land Policy and Management Act (FLPMA) and the Antiquities Act of 1906. Keep a copy with you at all times in the field.

This permit authorizes the permit holder to conduct and collect paleontological resources pertaining to both scientific research and commercial projects. BLM would like to emphasize a few points. First, this permit assigns to your firm the responsibility to submit reports and other documents in a timely fashion and such submittal will be a major point of review of your firm's performance under this permit. Second, you are required to contact the appropriate Field Office to obtain a Field Use Authorization before you begin any fieldwork. Please allow the Field Office sufficient lead-time to process your application for a Field Use Authorization. The Field Office may impose additional conditions and stipulations at that time. Third, please be mindful that it is your firm's responsibility to ensure assignment of supervisory field personnel (crew chiefs) to projects that have at least four months' local experience and who otherwise meet the standards of the Bureau.

Our office is enclosing a map of California BLM Field Offices with phone numbers of cultural heritage staff and a copy of your permit with attached National special permit conditions. BLM draws your attention to these stipulations and encourages you to read and understand them. Please sign page 5, as indicated, and **return a copy of this signature page to the California BLM State Office within 30 days of your receipt of the permit**. Your permit will be valid after your signature is received.

Should you have any questions contact James Barnes at email jjbarnes@blm.gov or by phone 916-978-4676.

Sincerely,

Tom Pogacnik
Deputy State Director
Natural Resources Division

Enclosures as stated

DI Form 1991 (Rev Sept 2004)
OMB No. 1024-0037
Exp. Date (01/31/2008)

United States Department of the Interior

PERMIT FOR PALEONTOLOGICAL INVESTIGATIONS

To conduct archeological work on Department of the Interior lands and Indian lands under the authority of:

- ☐ The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) and its regulations (43 CFR 7).
- ☒ The Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225, 16 U.S.C. 431-433) and its regulations (43 CFR 3).
- ☐ Supplemental regulations (25 CFR 262) pertaining to Indian lands.
- ☒ Bureau-specific statutory and/or regulatory authority: Federal Land Policy and Management Act of 1976 (Public Law 94-570), and Section 302 of Public Law 94-4579

Please use this number when referring to this permit
No.: CA-16-03P

1. Permit issued to Paleo Solutions, Inc.	2. Under application dated January 21, 2016
3. Address 911 S. Primrose Ave., Unit N, Monrovia, CA 91016	4. Telephone number(s) (562) 818-7713
	5. E-mail address(es) geraldine@paleosolutions.com
6. Name of Permit Administrator Geraldine Aron Telephone number(s): (562) 818-7713 Email address(es): geraldine@paleosolutions.com	7. Name of Principal Investigator(s) Geraldine Aron, Paul Murphy, Jennifer Kelly, Courtney Richards Telephone number(s): GA: (562) 818-7713, PM: (303) 514-1095, JK: (714) 206-5433, CR: (626) 716-2000 Email address(es): geraldine@paleosolutions.com, pmurphy@paleosolutions.com, jkelly@paleosolutions.com, crichards@paleosolutions.com
8. Name of Field Director(s) authorized to carry out field projects	Telephone number(s): Email address(es):
9. Activity authorized Survey and limited surface collection	
10. On lands described as follows All lands managed by the Bureau of Land Management-California	
11. During the duration of the project From March 16, 2016 To March 16, 2019	
12. Name and address of the curatorial facility in which collections, records, data, photographs, and other documents resulting from work under this permit shall be deposited for permanent preservation on behalf of the United States Government. Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007	
13. Permittee is required to observe the listed standard permit conditions and the special permit conditions attached to this permit.	
14. Signature and title of approving official Tom Pogacnik, Deputy State Director, Natural Resources Division	15. Date 03/17/2016

15. Standard Permit Conditions

a. This permit is subject to all applicable provisions of 43 CFR Part 3, 43 CFR 7, and 25 CFR 262, and applicable departmental and bureau policies and procedures, which are made a part hereof.

b. The permittee and this permit are subject to all other Federal, State, and local laws and regulations applicable to the public lands and resources.

c. This permit shall not be exclusive in character, and shall not affect the ability of the land managing bureau to use, lease or permit the use of lands subject to this permit for any purpose.

d. This permit may not be assigned.

e. This permit may be suspended or terminated for breach of any condition or for management purposes at the discretion of the approving official, upon written notice.

f. This permit is issued for the term specified in 11 above.

g. Permits issued for a duration of more than one year must be reviewed annually by the agency official and the permittee.

h. The permittee shall obtain all other required permit(s) to conduct the specified project.

i. Archeological project design, literature review, development of the regional historic context framework, site evaluation, and recommendations for subsequent investigations must be developed with direct involvement of an archeologist who meets the Secretary of the Interior's Standards for Archeology and Historic Preservation; fieldwork must be generally overseen by an individual who meets the Secretary of the Interior's Standards for Archeology and Historic Preservation.

j. Permittee shall immediately request that the approving official (14. above) make a modification to accommodate any change in an essential condition of the permit, including individuals named and the nature, location, purpose, and time of authorized work, and shall without delay notify the approving official of any other changes affecting the permit or regarding information submitted as part of the application for the permit. Failure to do so may result in permit suspension or revocation.

k. Permittee may request permit extension, in writing, at any time prior to expiration of the term of the permit, specifying a limited, definite amount of time required to complete permitted work.

l. Any correspondence about this permit or work conducted under its authority must cite the permit number. Any publication of results of work conducted under the authority of this permit must cite the approving bureau and the permit number.

m. Permittee shall submit a copy of any published journal article and any published or unpublished report, paper, and manuscript resulting from the permitted work (apart from those required in items q. and s., below), to the approving official and the appropriate official of the approved curatorial facility (item 12 above).

n. Prior to beginning any fieldwork under the authority of this permit, the permittee, following the affected bureau's policies and procedures, shall contact the field office manager responsible for administering the lands involved to obtain further instructions.

o. Permittee may request a review, in writing to the official concerned, of any disputed decision regarding inclusion of specific terms and conditions or the modification, suspension, or revocation of this permit, setting out reasons for believing that the decision should be reconsidered.

p. Permittee shall not be released from requirements of this permit until all outstanding obligations have been satisfied, whether or not the term of the permit has expired. Permittee may be subject to civil penalties for violation of any term or condition of this permit.

15. Standard Permit Conditions (continued)

q. Permittee shall submit a preliminary report to the approving official within a timeframe established by the approving official, which shall be no later than 6 weeks after the completion of any episode of fieldwork, setting out what was done, how it was done, by whom, specifically where, and with what results, including maps, GPS data, an approved site form for each newly recorded archeological site, and the permittee's professional recommendations, as results require. If other than 6 weeks, the timeframe shall be specified in Special Permit Condition p. Depending on the scope, duration, and nature of the work, the approving official may require progress reports, during or after the fieldwork period or both, and as specified in Special Permit Condition r.

r. Permittee shall submit a clean, edited draft final report to the agency official for review to insure conformance with standards, guidelines, regulations, and all stipulations of the permit. The schedule for submitting the draft shall be determined by the agency official.

s. Permittee shall submit a final report to the approving official not later than 180 days after completion of fieldwork. Where a fieldwork episode involved only minor work and/or minor findings, a final report may be submitted in place of the preliminary report. If the size or nature of fieldwork merits, the approving official may authorize a longer timeframe for the submission of the final report as specified in Special Permit Condition q.

t. Two copies of the final report, a completed NTIS Report Documentation Page (SF-298), available at http://www.ntis.gov/pdf/rdpform.pdf, and a completed NADB-Reports Citation Form, available at http://www.cr.nps.gov/aad/tools/nadbform_update.doc, will be submitted to the office issuing the permit.

u. The permittee agrees to keep the specific location of sensitive resources confidential. Sensitive resources include threatened species, endangered species, and rare species, archeological sites, caves, fossil sites, minerals, commercially valuable resources, and sacred ceremonial sites.

v. Permittee shall deposit all artifacts, samples and collections, as applicable, and original or clear copies of all records, data, photographs, and other documents, resulting from work conducted under this permit, with the curatorial facility named in item 12, above, not later than 90 days after the date the final report is submitted to the approving official. Not later than 180 days after the final report is submitted, permittee shall provide the approving official with a catalog and evaluation of all materials deposited with the curatorial facility, including the facility's accession and/or catalog numbers.

w. Permittee shall provide the approving official with a confirmation that museum collections described in v. above were deposited with the approved curatorial facility, signed by an authorized curatorial facility official, stating the date materials were deposited, and the type, number and condition of the collected museum objects deposited at the facility.

x. Permittee shall not publish, without the approving official's prior permission, any locational or other identifying archeological site information that could compromise the Government's protection and management of archeological sites.

y. For excavations, permittee shall consult the OSHA excavation standards which are contained in 29 CFR §1926.650, §1926.651 and §1926.652. For questions regarding these standards contact the local area OSHA office, OSHA at 1-800-321-OSHA, or the OSHA website at http://www.osha.gov.

z. Special permit conditions attached to this permit are made a part hereof.

16. Special Permit Conditions

☒ a. Permittee shall allow the approving official and bureau field officials, or their representatives, full access to the work area specified in this permit at any time the permittee is in the field, for purposes of examining the work area and any recovered materials and related records.

☒ b. Permittee shall cease work upon discovering any human remains and shall immediately notify the approving official or bureau field official. Work in the vicinity of the discovery may not resume until the authorized official has given permission.

☒ c. Permittee shall backfill all subsurface test exposures and excavation units as soon as possible after recording the results, and shall restore them as closely as reasonable to the original contour.

☒ d. Permittee shall not use mechanized equipment in designated, proposed, or potential wilderness areas unless authorized by the agency official or a designee in additional specific conditions associated with this permit.

☒ e. Permittee shall take precautions to protect livestock, wildlife, the public, or other users of the public lands from accidental injury in any excavation unit.

☒ f. Permittee shall not conduct any flint knapping or lithic replication experiments at any archeological site, aboriginal quarry source, or non-site location that might be mistaken for an archeological site as a result of such experiments.

☒ g. Permittee shall perform the fieldwork authorized in this permit in a way that does not impede or interfere with other legitimate uses of the public lands, except when the authorized officer specifically provides otherwise.

☒ h. Permittee shall restrict vehicular activity to existing roads and trails unless the authorized officer provides otherwise.

☒ i. Permittee shall keep disturbance to the minimum area consistent with the nature and purpose of the fieldwork.

☒ j. Permittee shall not cut or otherwise damage living trees unless the authorized officer gives permission.

☒ k. Permittee shall take precautions at all times to prevent wildfire. Permittee shall be held responsible for suppression costs for any fires on public lands caused by the permittee's negligence. Permittee may not burn debris without the authorized officer's specific permission.

☒ l. Permittee shall conduct all operations in such a manner as to prevent or minimize scarring and erosion of the land, pollution of the water resources, and damage to the watershed.

☒ m. Permittee shall not disturb resource management facilities within the permit area, such as fences, reservoirs, and other improvements, without the authorized officer's approval. Where disturbance is necessary, permittee shall return the facility to its prior condition, as determined by the authorized officer.

☒ n. Permittee shall remove temporary stakes and/or flagging, which the permittee has installed, upon completion of fieldwork.

☒ o. Permittee shall clean all camp and work areas before leaving the permit area. Permittee shall take precautions to prevent littering or pollution on public lands, waterways, and adjoining properties. Refuse shall be carried out and deposited in approved disposal areas.

☐ p. Permittee shall submit the preliminary report within _____ days/weeks of completion of any episode of fieldwork..

☐ q. Permittee shall submit the final report within _____ days/weeks/months after completion of fieldwork..

☐ r. Permittee shall submit progress reports every _____ months over the duration of the project.

☒ s. California special permit conditions are attached.

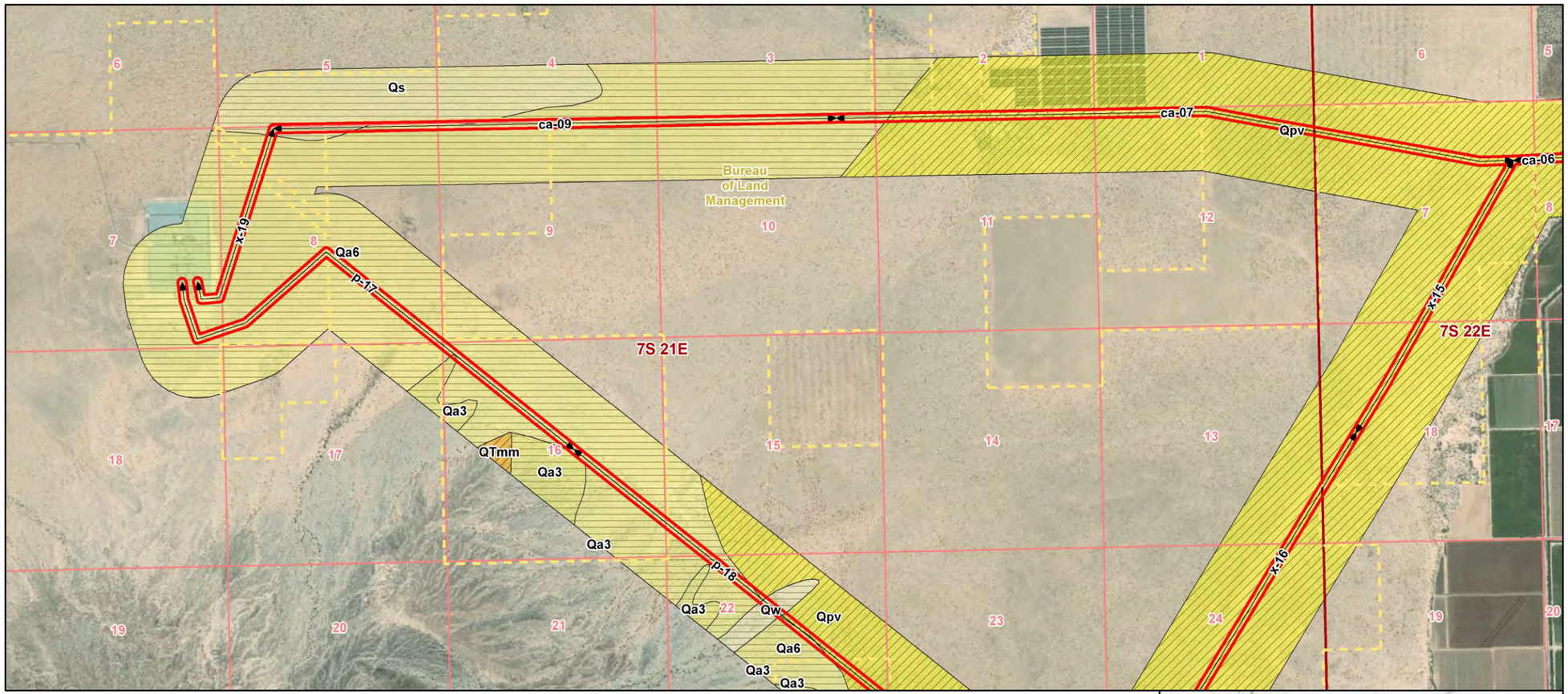
Special Permit Conditions Continuation Sheet: California Conditions

- a. Work under this permit is limited to specific service approved for each permit. This may consist of non-collection survey, limited testing to determine site content and limits or extensive testing emergency excavation and/or salvage projects. Testing/ excavation projects may be conducted under the authority of this permit only upon completion of ARPA consultation with Native American Groups and written approval from the Bureau for such work. (CARIDAPs for the purpose of the identification of archaeological resources are authorized under a FLPMA/ARPA Permit).
- b. Permittees shall verbally and subsequently in writing contact the appropriate BLM Field Manager prior to the beginning of each of his field operations (with follow-up written notification) to inform the BLM of specific work to be conducted. At this time, the BLM Field Manager may impose additional stipulation as deemed necessary to provide for the protection and management of resource values in the general site or project area.
- c. All cultural artifacts and other related materials such as notes, photographs, etc., acquired under the provisions of this permit **remain the property of the United States Government and may be recalled at any time for the use of the Department of the interior or other agencies of the Federal Government.** Cultural materials collected under the provisions of this permit must be curated at a repository approved by the BLM. Curation shall be at a local qualified repository, if feasible, and an approved curation facility shall be designated prior to all field projects. An itemized list of all materials with accession numbers, curated at the repository will be submitted to the State Office and to the appropriate Field Office within 180 days of the completion of individual field projects. A copy of a receipt from the curation facility must be submitted with the list or catalogue.
- d. Permittees shall acquire a primary number from the appropriate Information Center for each cultural resource documented while undertaking work authorized by this permit.
- e. The BLM Field Manager or authorized representative may require a monthly letter progress report outlining what was accomplished. This report, if required, is due by the fifth day of the following month, unless different arrangements are approved.
- f. The individual(s) in direct charge must be academically qualified and possess adequate field experience. At least two weeks prior to initiation field work, the permittees must provide the BLM Field Manager with the vitae of individuals proposed to be in direct charge if not approved at the time of permit issuance. A list of field crew members should be submitted at the same time. Only the individual(s) listed in Item No. 8 of the permit is/are authorized to be in direct charge of field work conducted under this permit.
- g. The person(s) in direct charge of field work, shall be on site at all times when work is in progress. Failure to comply with permit stipulations will result in removal of subject's name(s) from the approved list of person-in-direct-charge.
- h. Care should be exercised to avoid directly or indirectly increasing access or potential vandalism to sensitive sites.
- i. All National Permit Stipulations are binding. The authority for issuing permits in the Bureau of Land Management rests solely with the State Director as Delegated by the Secretary of the Interior and all further delegation is prohibited by Secretarial Order. No Modification of National Permit Conditions 8 or 9 or of the California Special Permit Conditions may occur except by written decision of the State Director.
- j. The Bureau of Land Management shall be cited in any report of work done under this permit, including publications such as books, news articles and scientific publications, as well as oral reports, films, television programs, and presentations in other media.

By signing below, I, the Principal Investigator, acknowledge that I have read and understand the Permit for Archeological Investigations and agree to its terms and conditions as evidenced by my signature below and initiation of work or other activities under the authority of this permit.

Signature and title:	Date:
	03/17/2016

APPENDIX B: GEOLOGIC AND PALEONTOLOGICAL POTENTIAL MAPS



Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

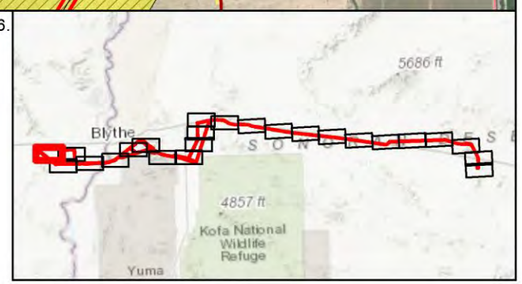
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- PLSS Township
- PLSS Section

Geology Description

- Qw: Alluvium of modern washes (Holocene)
- Qs: Eolian sand (Holocene)
- Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)
- Qa3: Alluvial-fan and alluvial-valley deposits, Unit 3 (Holocene and Pleistocene)
- Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)
- QTmm: Alluvial deposits of the Mule Mountains (Pleistocene or Pliocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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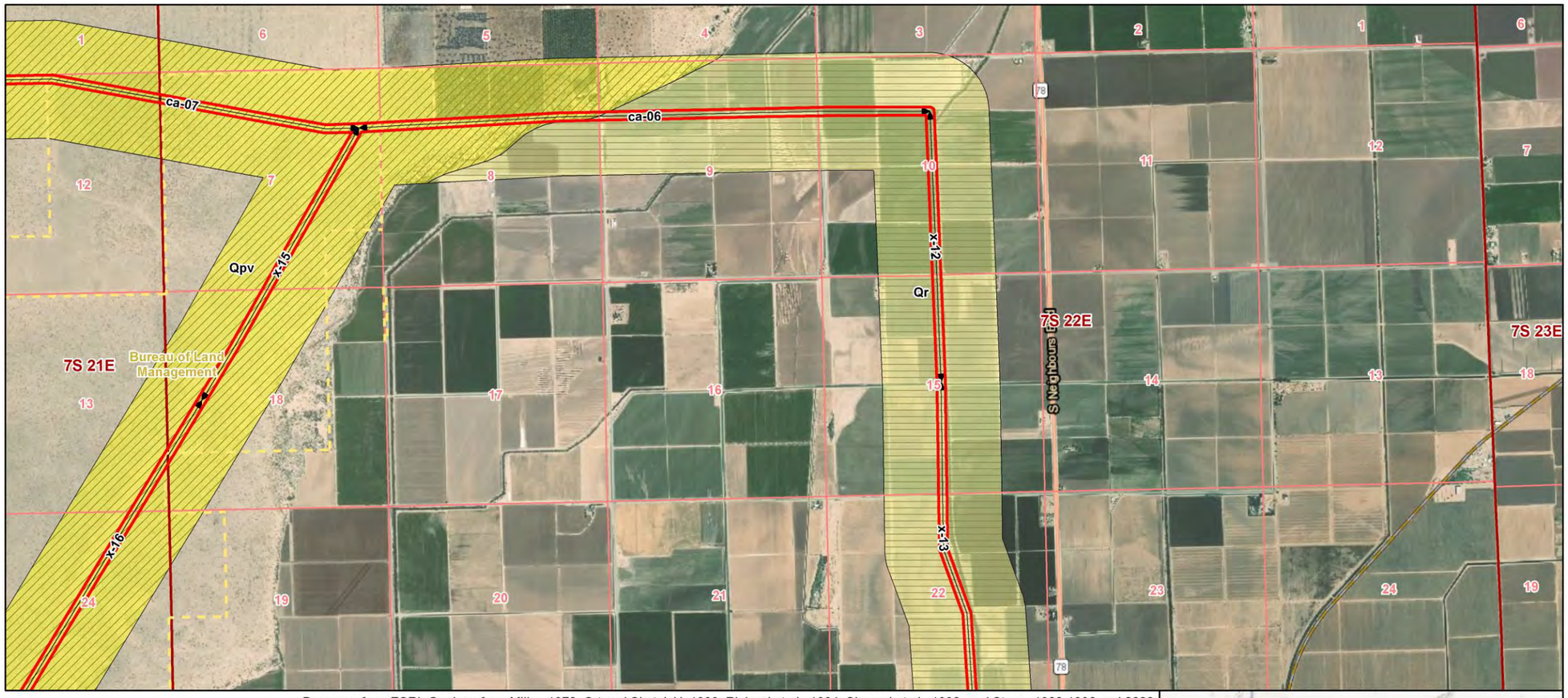


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

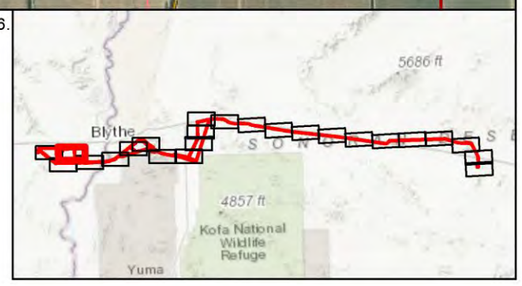
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- PLSS Township
- PLSS Section

Geology Description

- Qr: Alluvium of the modern Colorado River flood plain (Holocene)
- Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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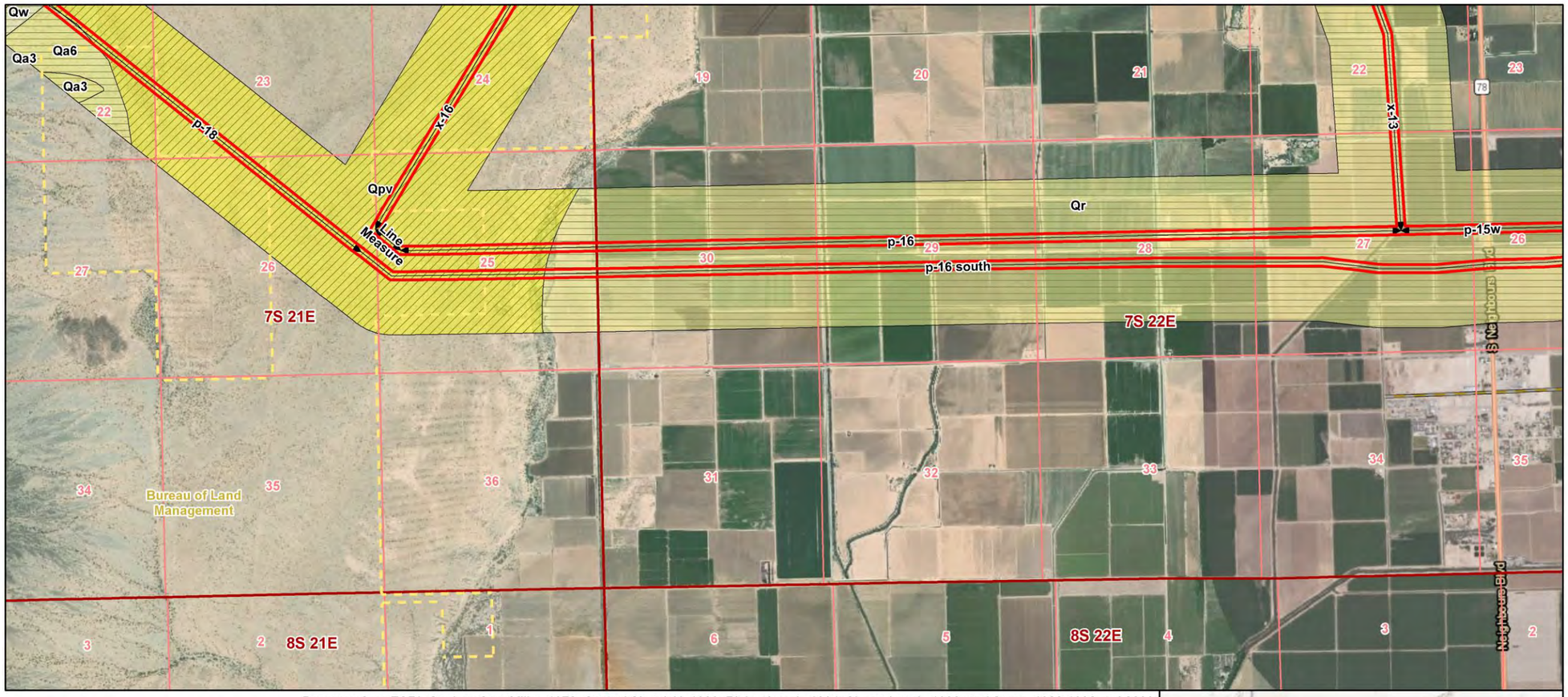


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

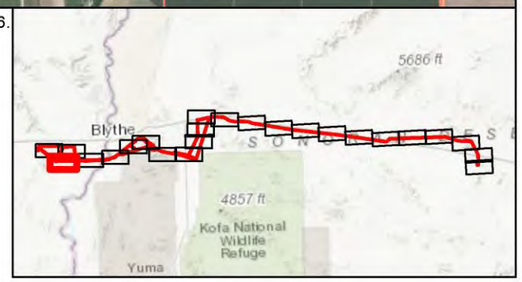
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- PLSS Township
- PLSS Section

Geology Description

- Qw: Alluvium of modern washes (Holocene)
- Qr: Alluvium of the modern Colorado River flood plain (Holocene)
- Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)
- Qa3: Alluvial-fan and alluvial-valley deposits, Unit 3 (Holocene and Pleistocene)
- Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



Page 3 of 24

N

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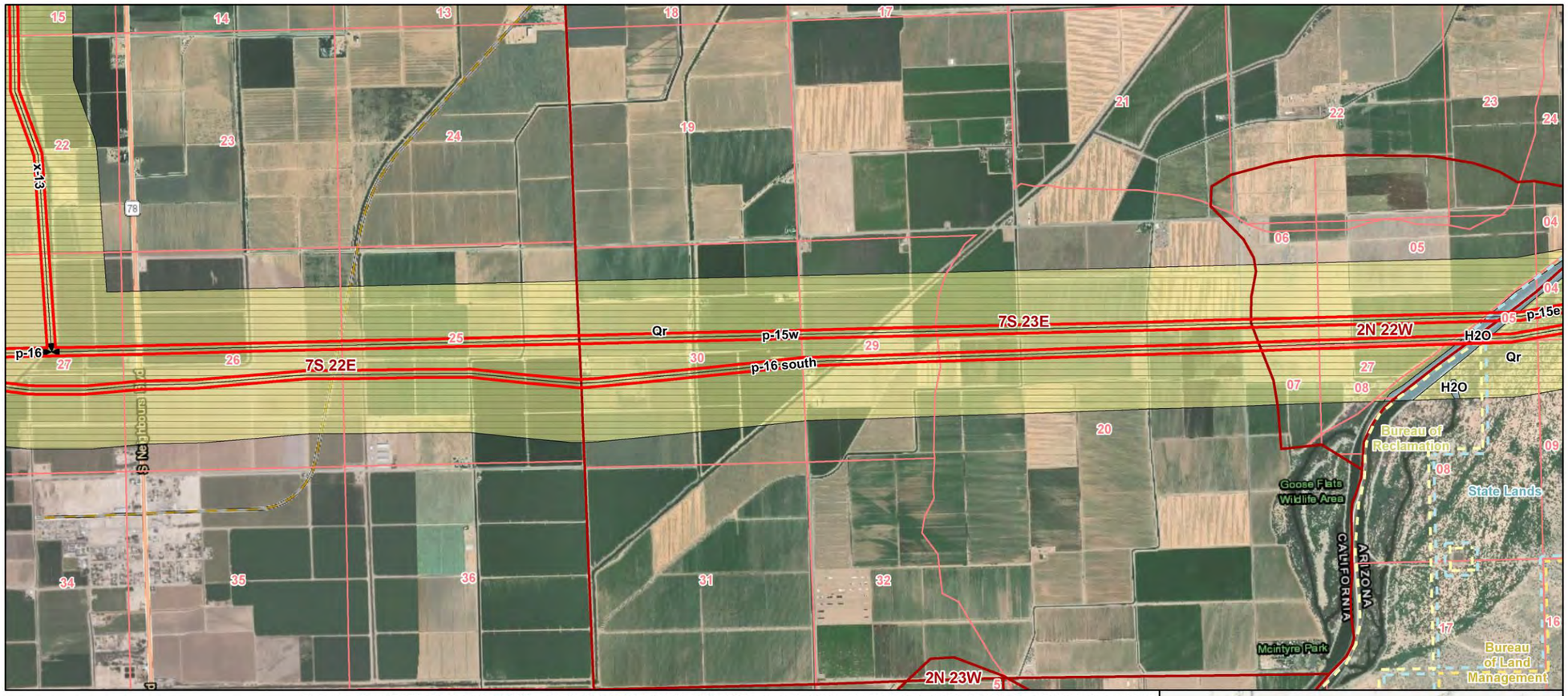


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

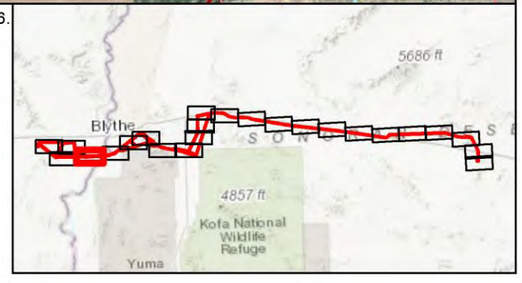
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- State
- PLSS Township
- PLSS Section

Geology Description

- H2O: water
- Qr: Alluvium of the modern Colorado River flood plain (Holocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class W - Water



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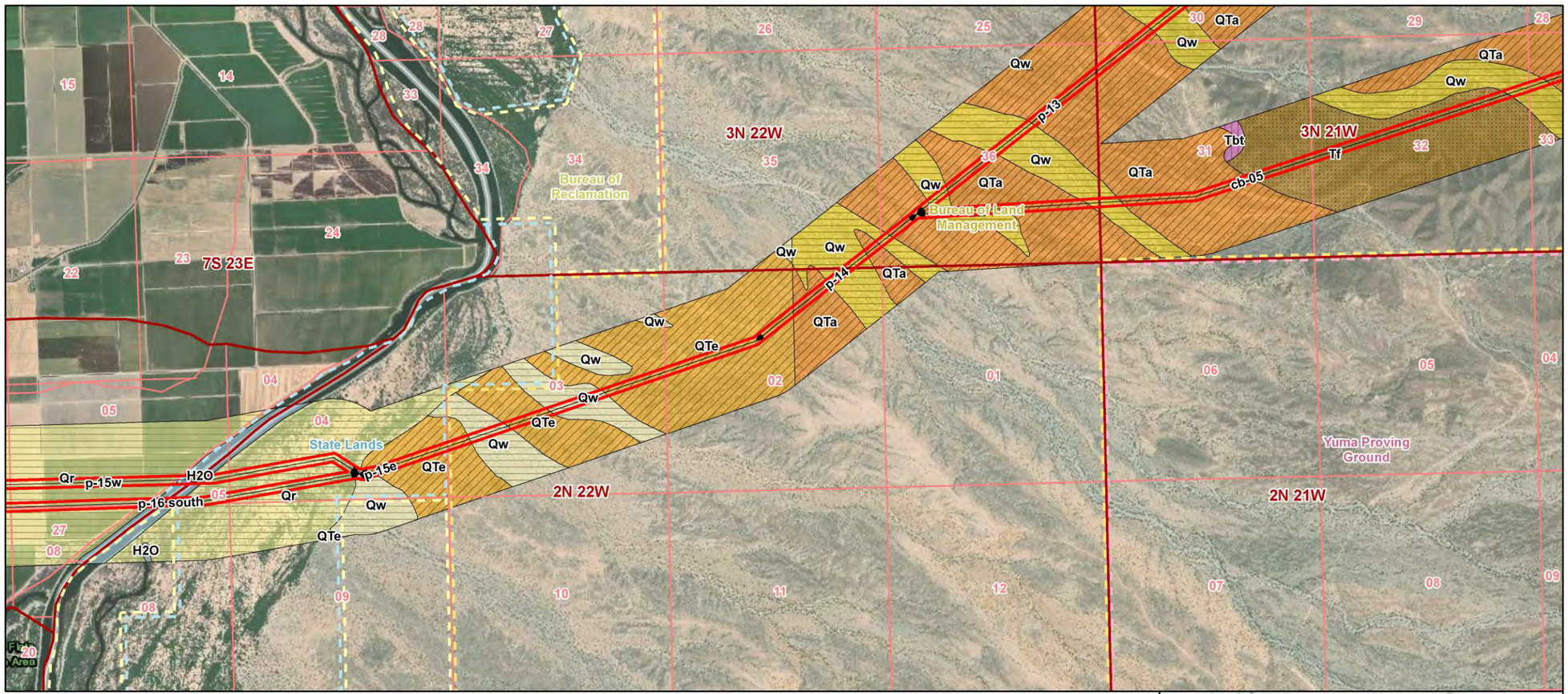


Ten West Link Transmission Line Project

Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

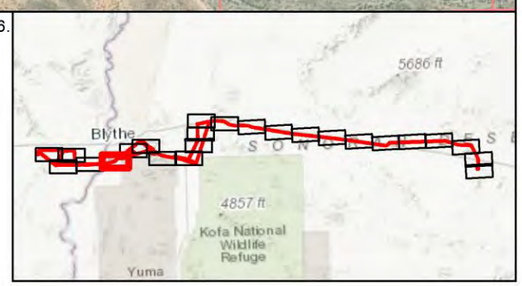
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Department Of Defense (DOD)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- State
- PLSS Township
- PLSS Section

Geology Description

- H2O: water
- Qw: Alluvium of modern washes (Holocene)
- Qr: Alluvium of the modern Colorado River flood plain (Holocene)
- Qw: Alluvium of modern washes (Quaternary)
- QTe: Alluvial deposits of the Ehrenberg area (Pleistocene and/or Pliocene)
- QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)
- Tbt: Tufa (Tertiary?)
- Tf: Fanglomerate, sedimentary breccia, and slide blocks (Miocene and Oligocene?)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate
- Class U - Unknown Potential
- Class W - Water



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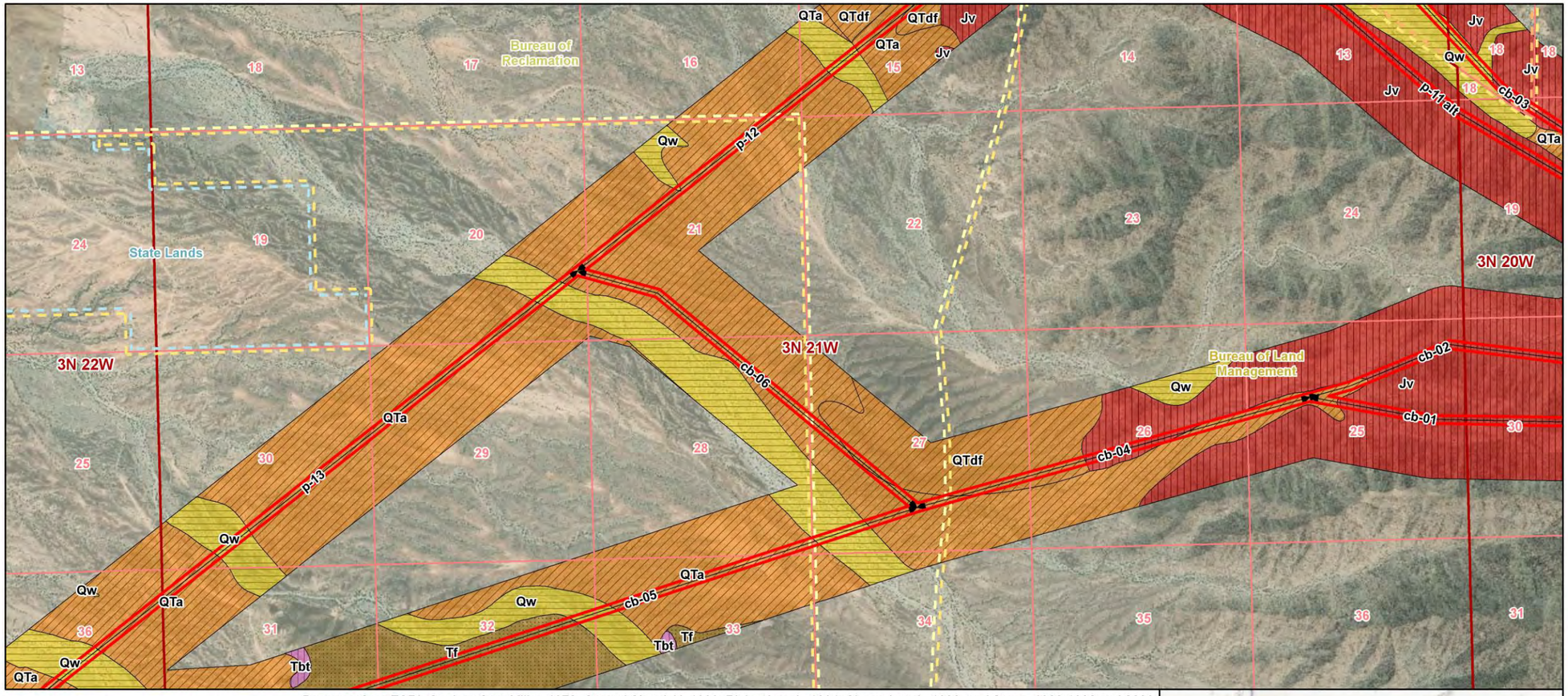

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Ten West Link Transmission Line Project

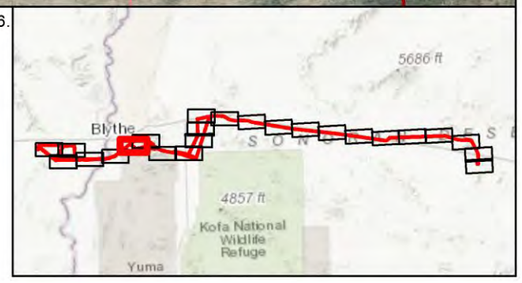
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- Bureau of Indian Affairs (BIA)
- State
- PLSS Township
- PLSS Section

Geology Description

- Qw: Alluvium of modern washes (Quaternary)
- QTdf: Dissected fan deposits (Quaternary or Tertiary)
- QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)
- Tbt: Tufa (Tertiary?)
- Tf: Fanglomerate, sedimentary breccia, and slide blocks (Miocene and Oligocene?)
- Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate
- Class U - Unknown Potential



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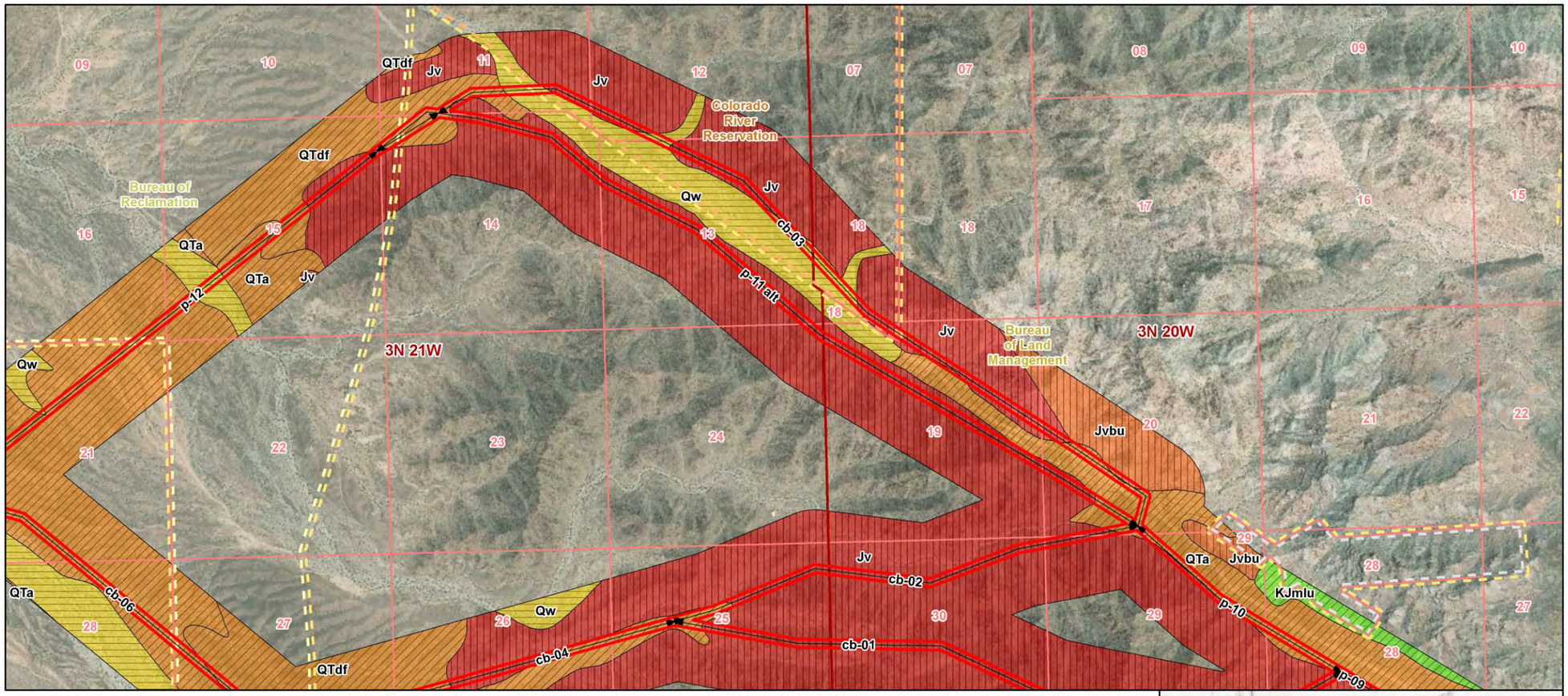


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

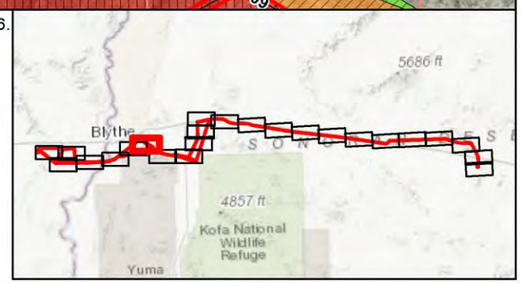
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- Bureau of Indian Affairs (BIA)
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qw: Alluvium of modern washes (Quaternary)
- QTdf: Dissected fan deposits (Quaternary or Tertiary)
- QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)
- KJmlu: McCoy Mountains Formations, lower part, undivided (Cretaceous or Jurassic)
- Jvbu: Volcanic rocks of the Dome Rock sequence, upper bedded unit (Jurassic)
- Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate



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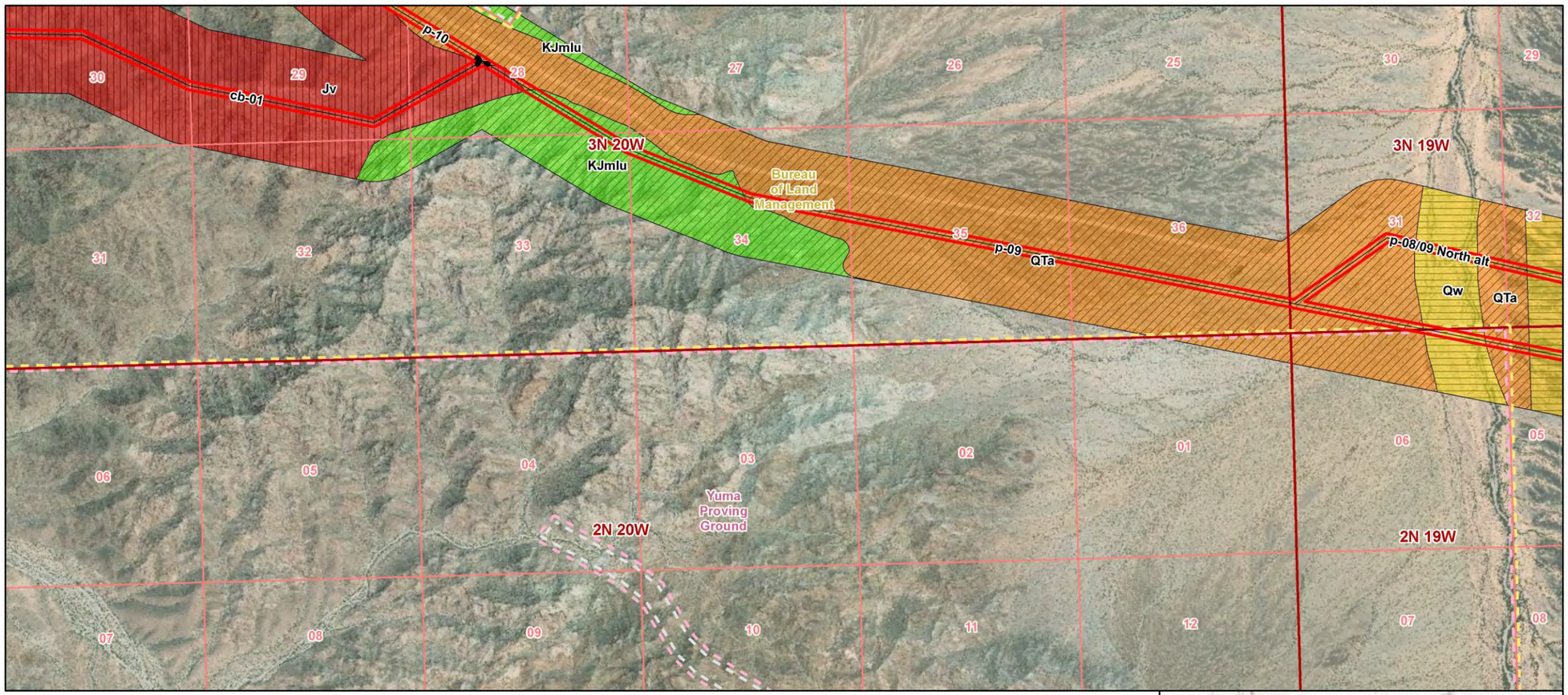


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

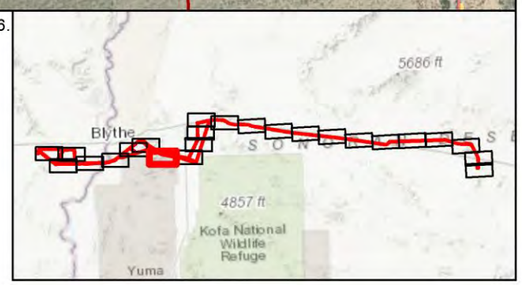
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Department Of Defense (DOD)
- Bureau of Land Management (BLM)
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qw: Alluvium of modern washes (Quaternary)
- Qat: Alluvium and talus (Quaternary)
- QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)
- KJmlu: McCoy Mountains Formations, lower part, undivided (Cretaceous or Jurassic)
- Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate



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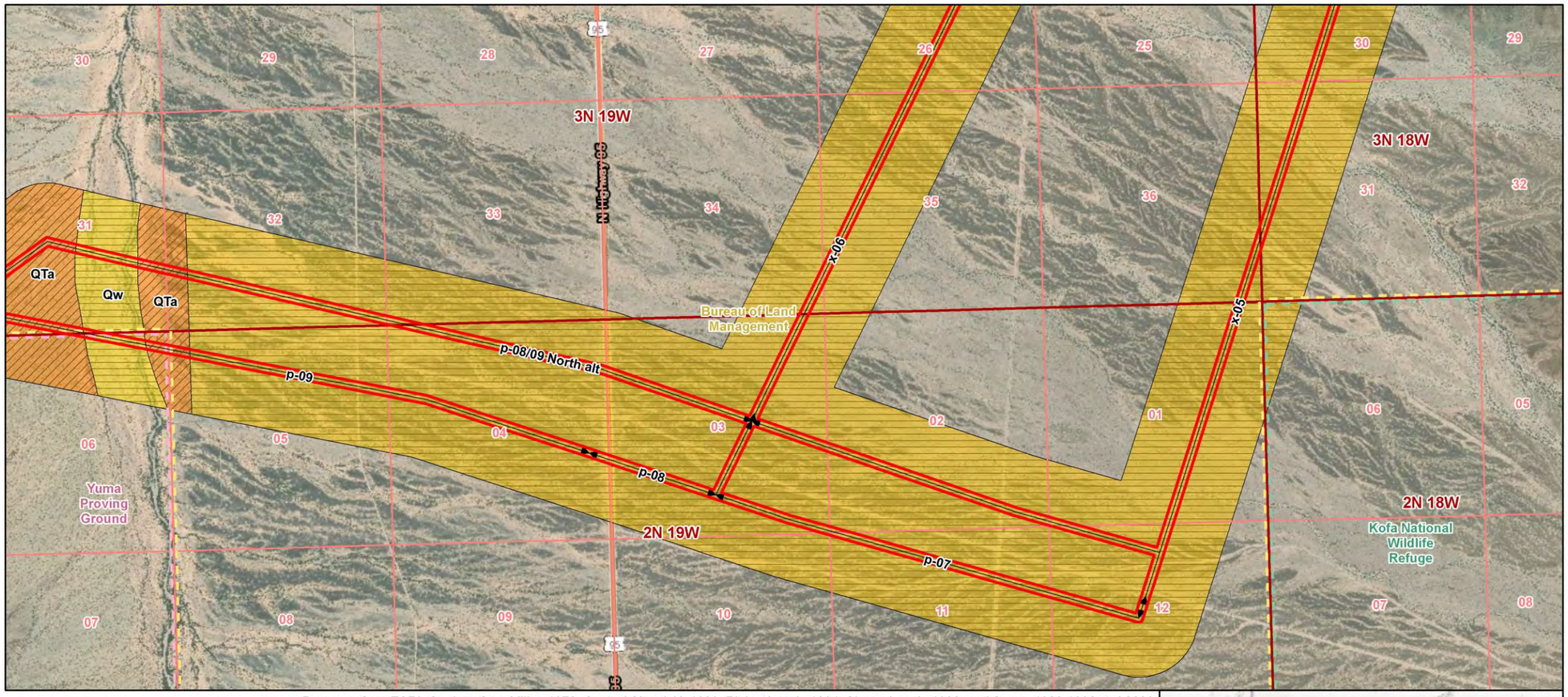


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

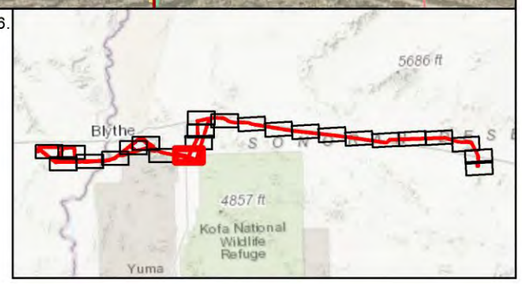
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Department Of Defense (DOD)
- Bureau of Land Management (BLM)
- US Fish and Wildlife (USFW)
- PLSS Township
- PLSS Section

Geology Description

- Qw: Alluvium of modern washes (Quaternary)
- Qat: Alluvium and talus (Quaternary)
- QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

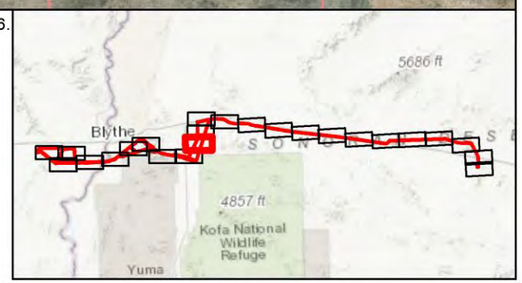
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- PLSS Township
- PLSS Section

Geology Description

- Qat: Alluvium and talus (Quaternary)
- pCv: Metavolcanic rocks (Precambrian or Mesozoic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low



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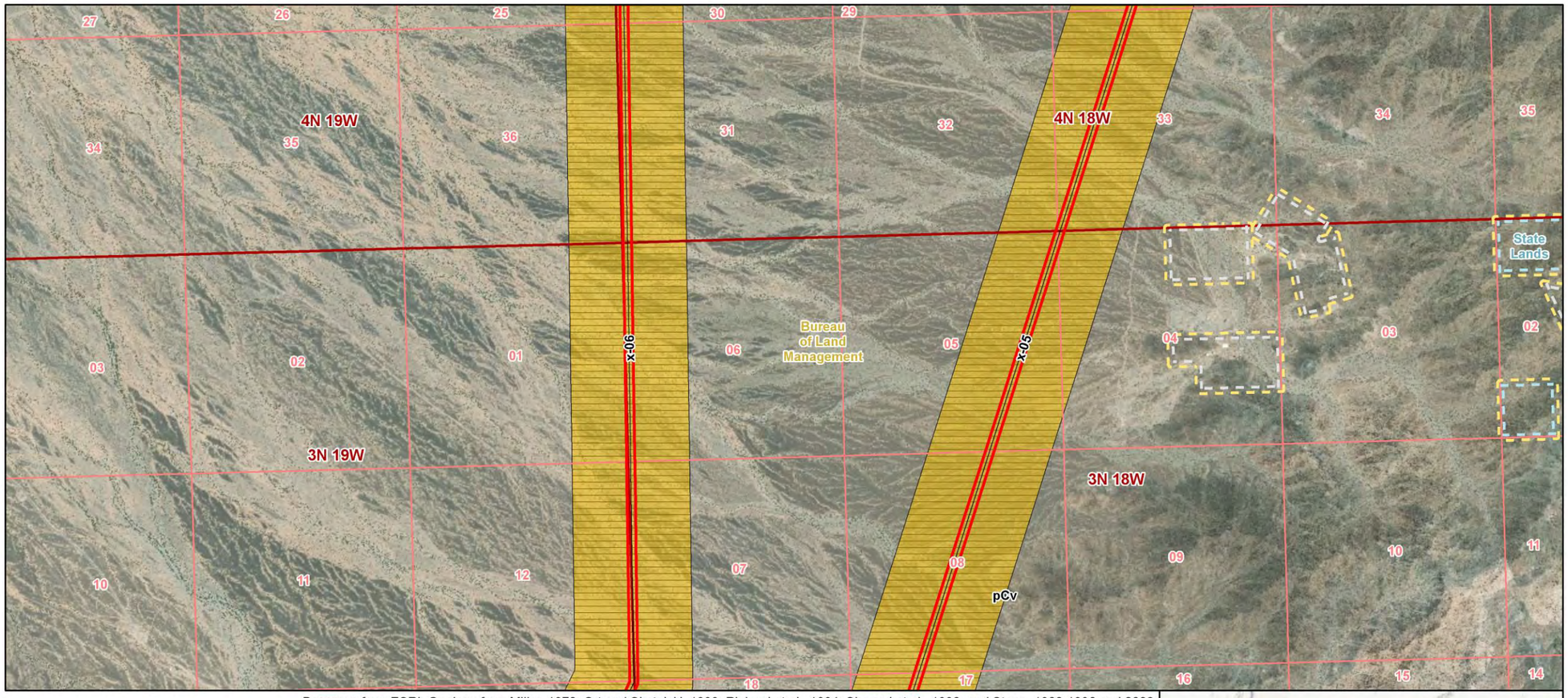


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

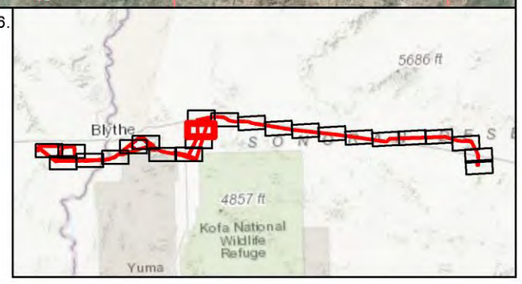
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qat: Alluvium and talus (Quaternary)
- pCv: Metavolcanic rocks (Precambrian or Mesozoic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low



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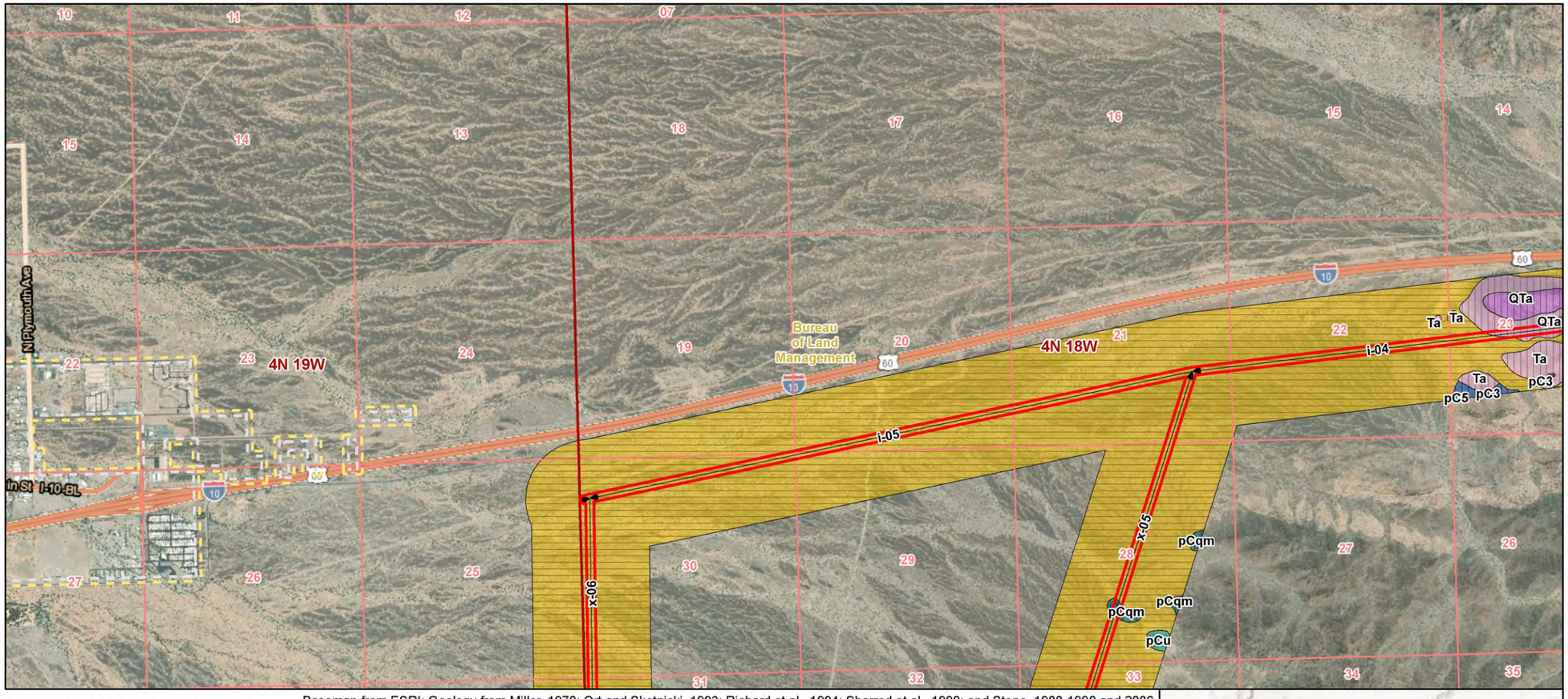


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

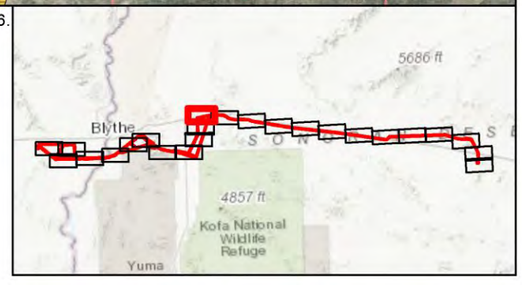
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qat: Alluvium and talus (Quaternary)
- QTa: Hornblende-biotite andesite (Quaternary or Tertiary)
- Ta: Older hornblende-biotite andesite (Tertiary)
- pC5: Dolomite; tan, chert, massively bedded, Unit 5 (Paleozoic(?))
- pC3: Quartz-albite-muscovite-chlorite schist; meta-tuffaceous rock, Unit 3 (Paleozoic(?))
- pCu: Paleozoic(?) rocks and Precambrian or Mesozoic rocks, undifferentiated (Paleozoic(?))
- pCqm: Quartz monzonite (Precambrian)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class U - Unknown Potential



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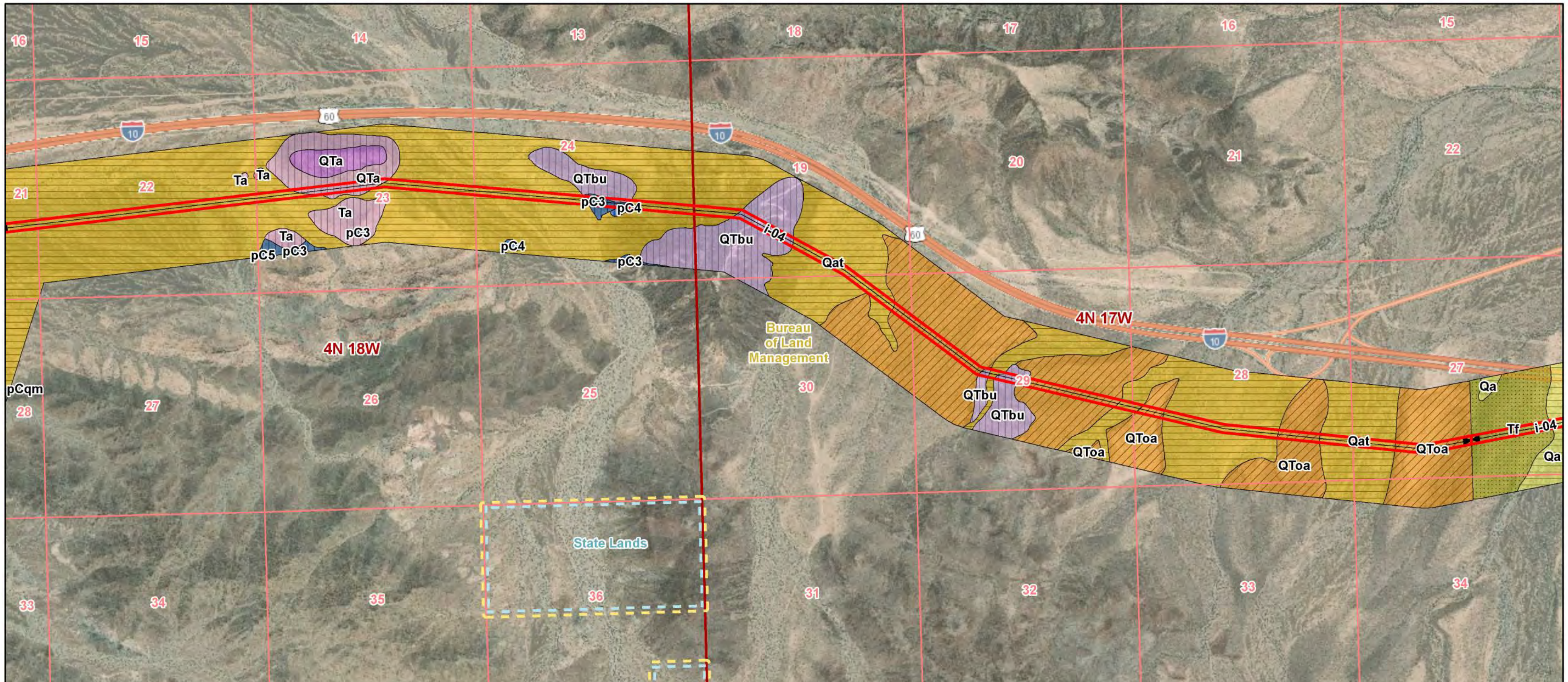


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

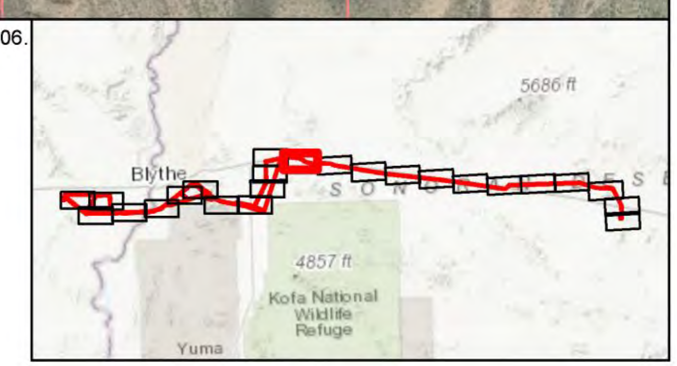
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- PLSS Township
- PLSS Section

Geology Description

- Qa: Alluvium (Holocene and Pleistocene)
- Qat: Alluvium and talus (Quaternary)
- QToa: Older Alluvium (Quaternary or Tertiary)
- QTbu: Basalt of Black Mesa (Quaternary or Tertiary)
- QTa: Hornblende-biotite andesite (Quaternary or Tertiary)
- Ta: Older hornblende-biotite andesite (Tertiary)
- Tf: Fanglomerate (Miocene)
- pC5: Dolomite; tan, chert, massively bedded, Unit 5 (Paleozoic(?))
- pC4: Vitreous quartzite, medium to massively bedded, Unit 4 (Paleozoic(?))
- pC3: Quartz-albite-muscovite-chlorite schist; meta-tuffaceous rock, Unit 3 (Paleozoic(?))
- pCqm: Quartz monzonite (Precambrian)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate
- Class U - Unknown Potential



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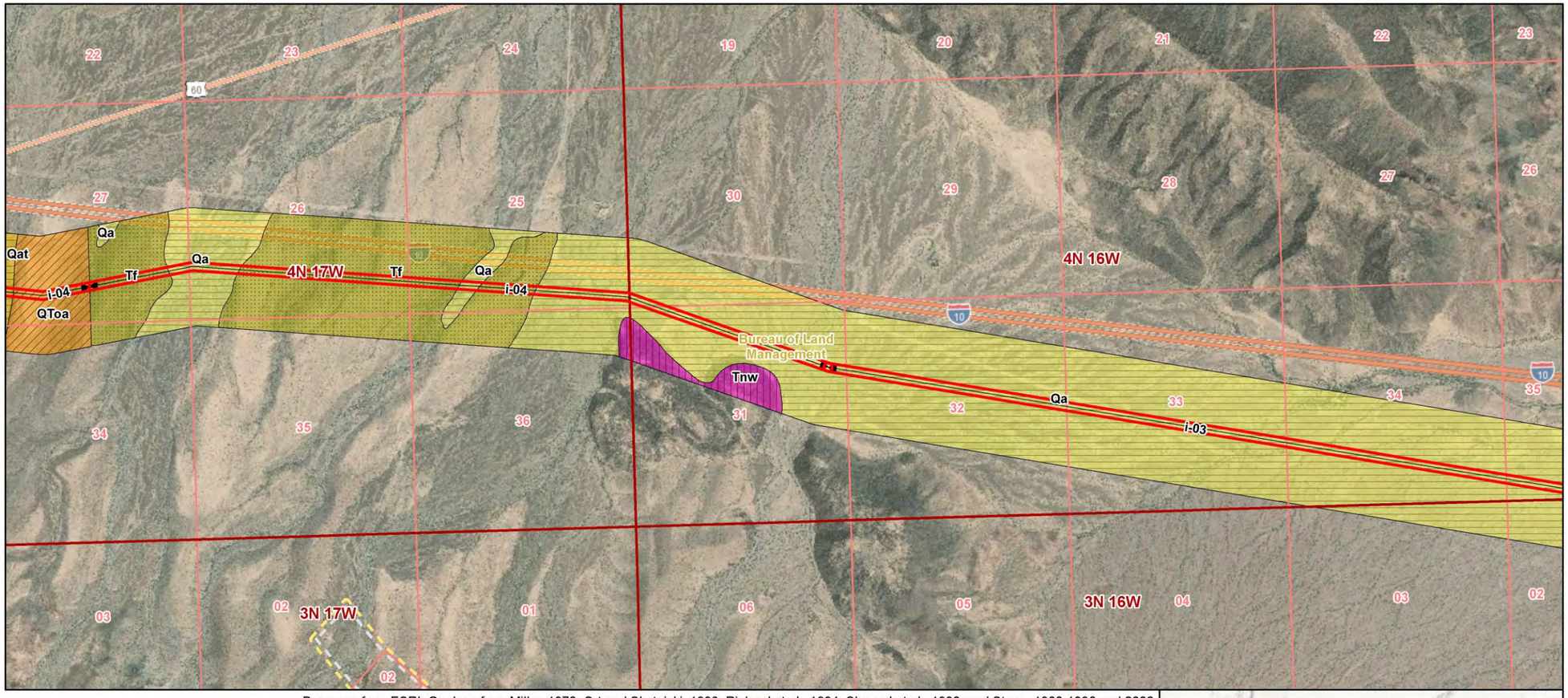


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

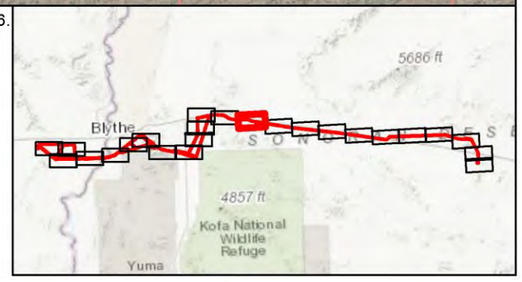
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qa: Alluvium (Holocene and Pleistocene)
- Qat: Alluvium and talus (Quaternary)
- QToa: Older Alluvium (Quaternary or Tertiary)
- Tf: Fanglomerate (Miocene)
- Tnw: Basalt of New Water Mountains (Miocene)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate
- Class U - Unknown Potential



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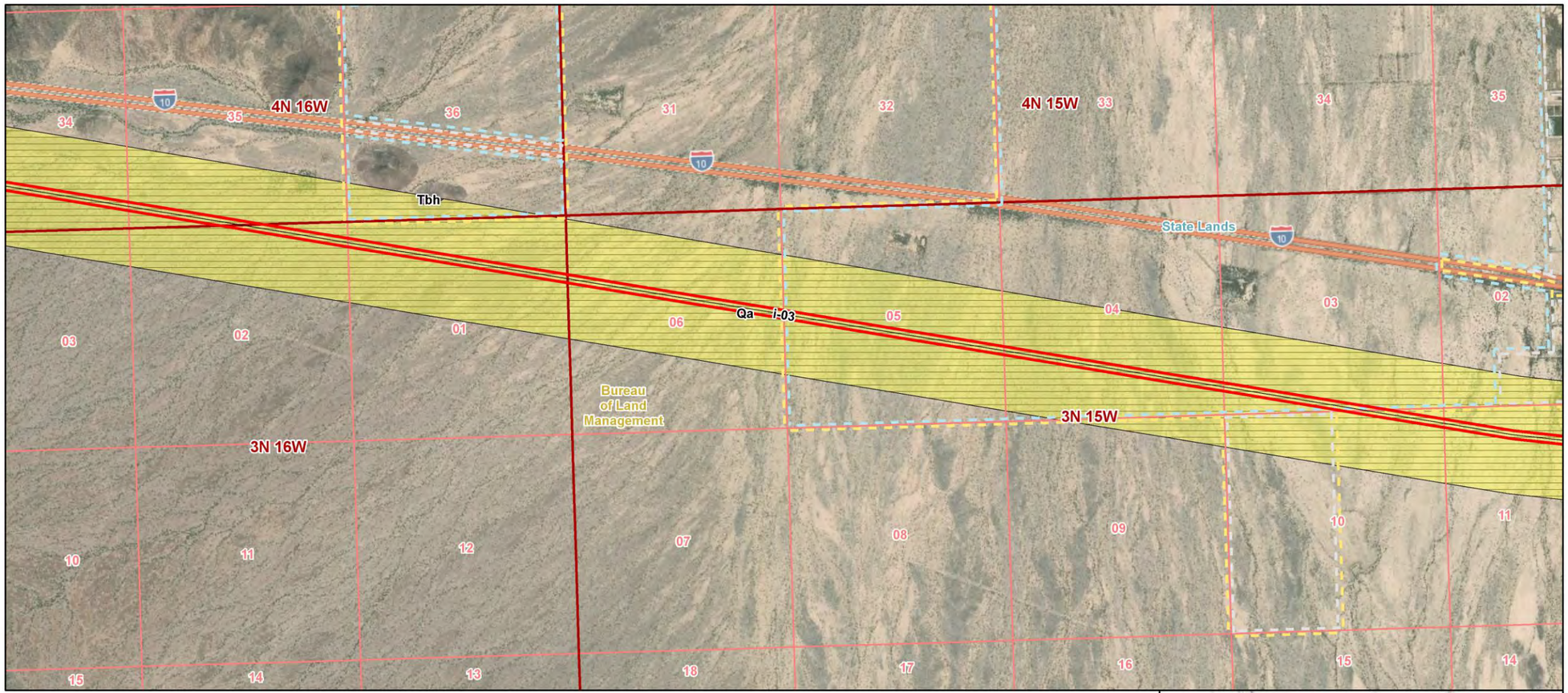


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

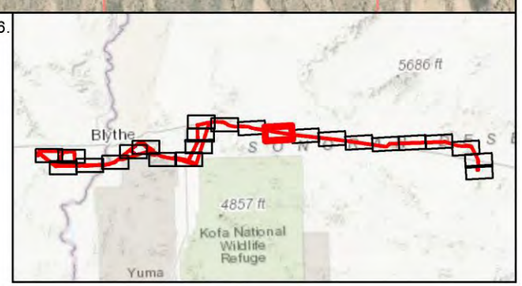
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qa: Alluvium (Holocene and Pleistocene)
- Tbh: Volcanic rocks of Bear Hills (Miocene and Oligocene?)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low



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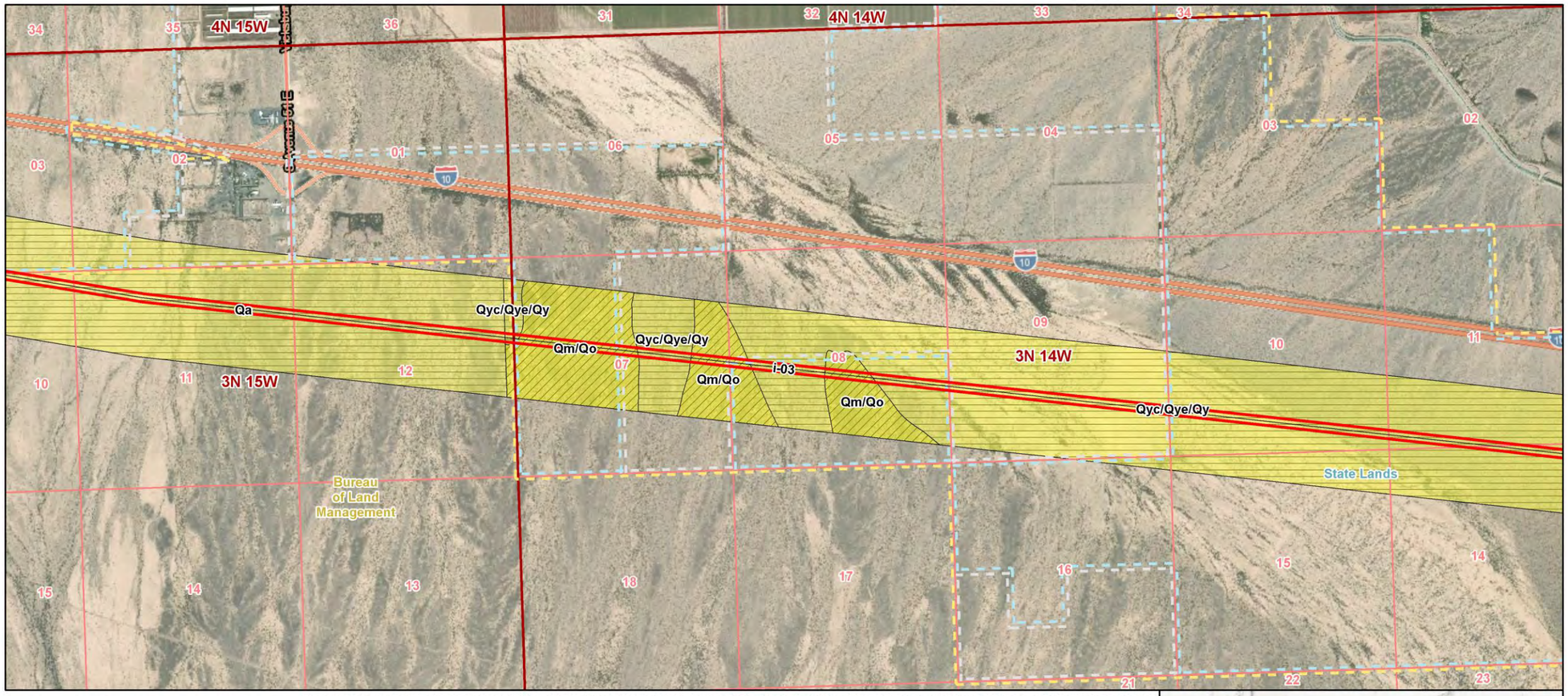


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

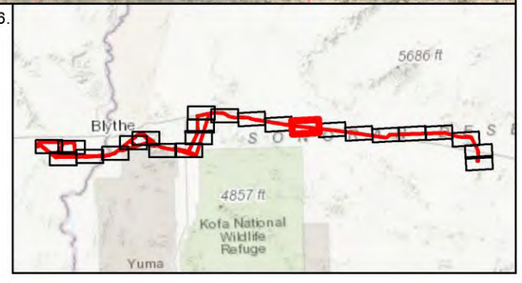
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qa: Alluvium (Holocene and Pleistocene)
- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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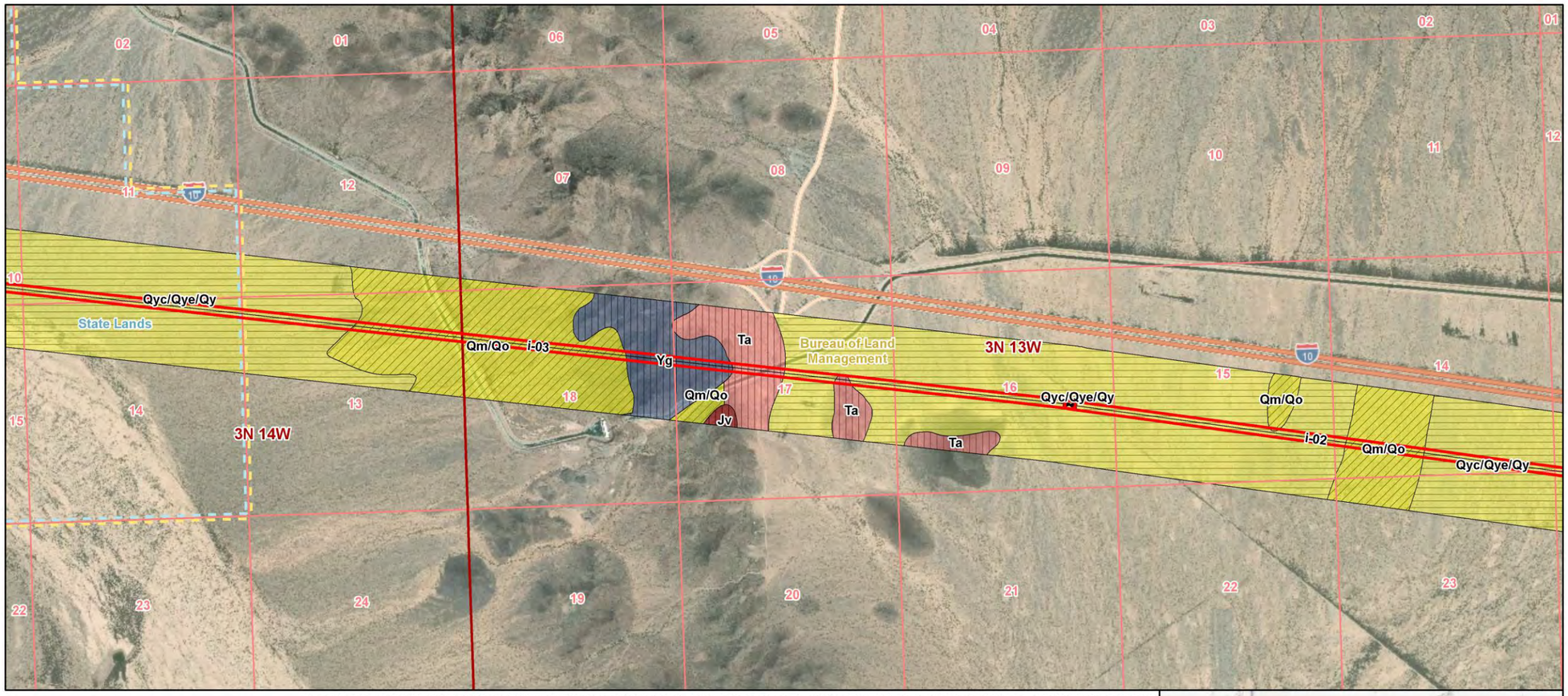


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

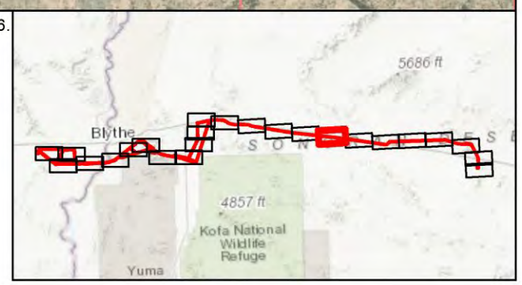
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- PLSS Township
- PLSS Section

Geology Description

- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)
- Ta: Andesite (Miocene or Oligocene)
- Jv: Volcanic Rocks (Jurassic)
- Yg: Granitoid (middle Proterozoic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate



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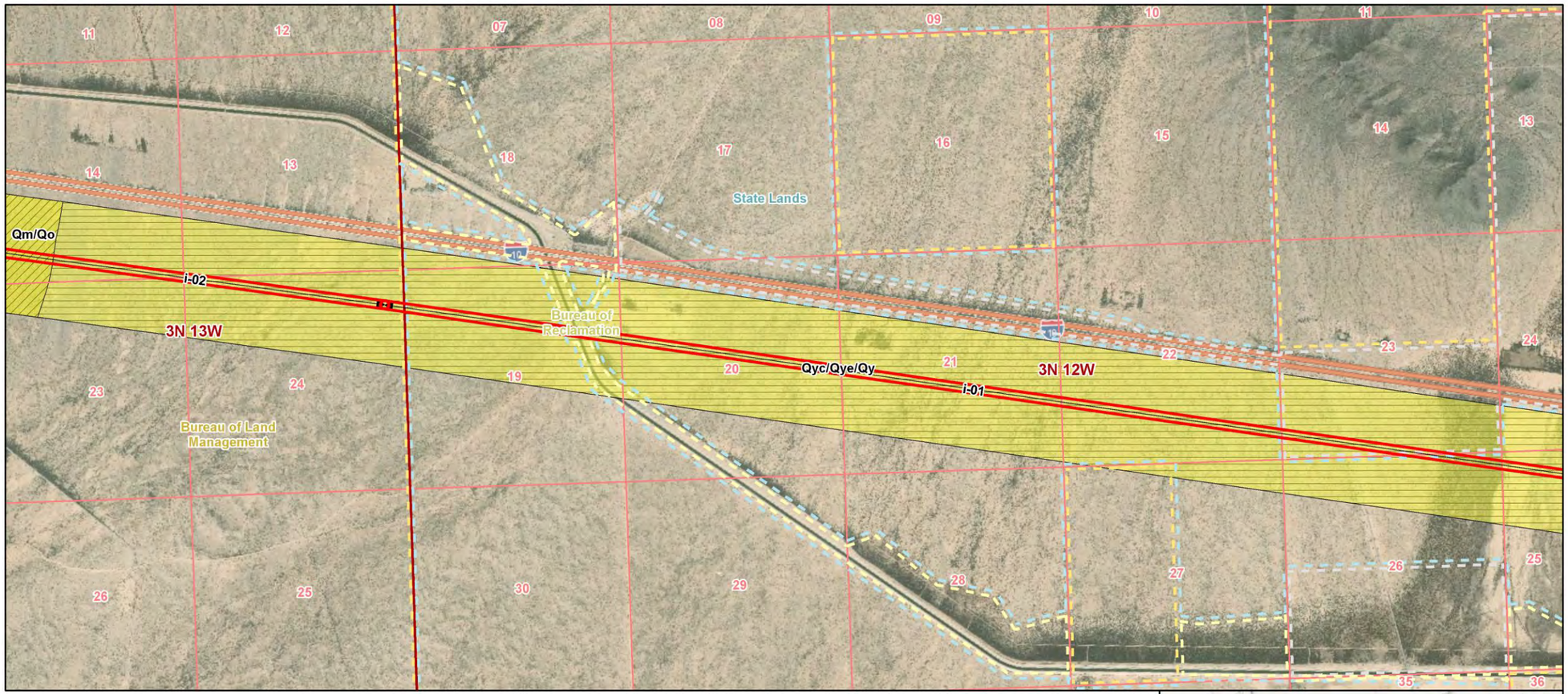


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

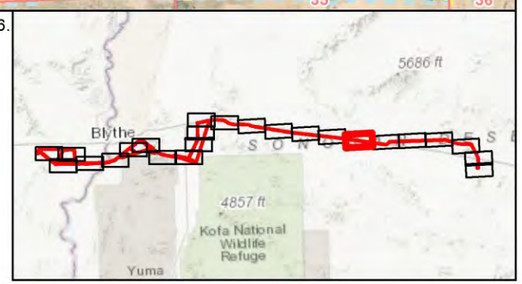
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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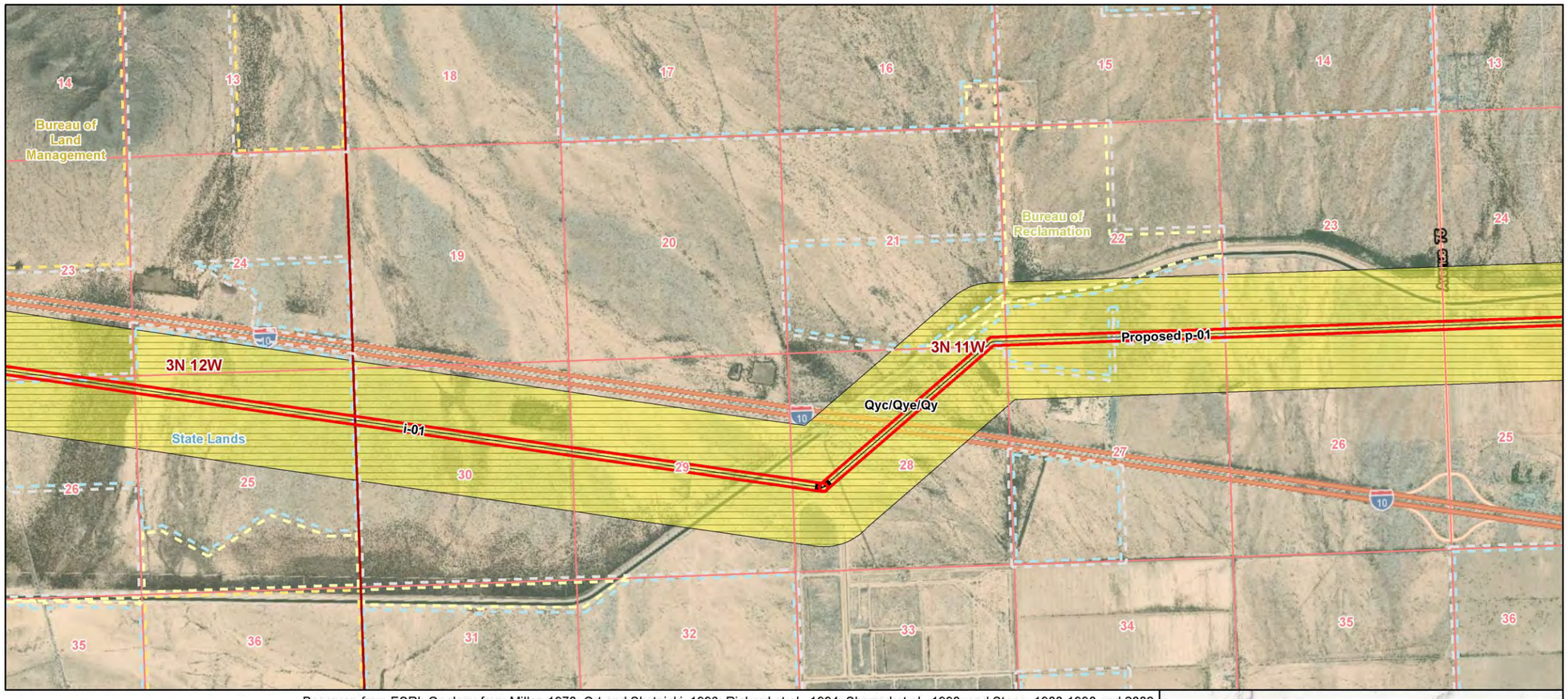


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

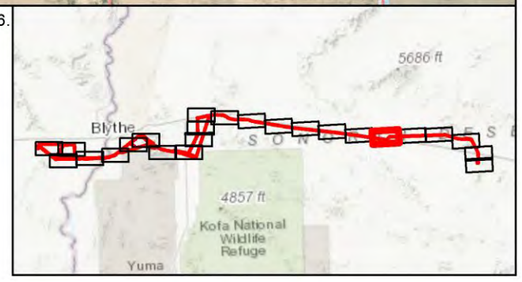
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low



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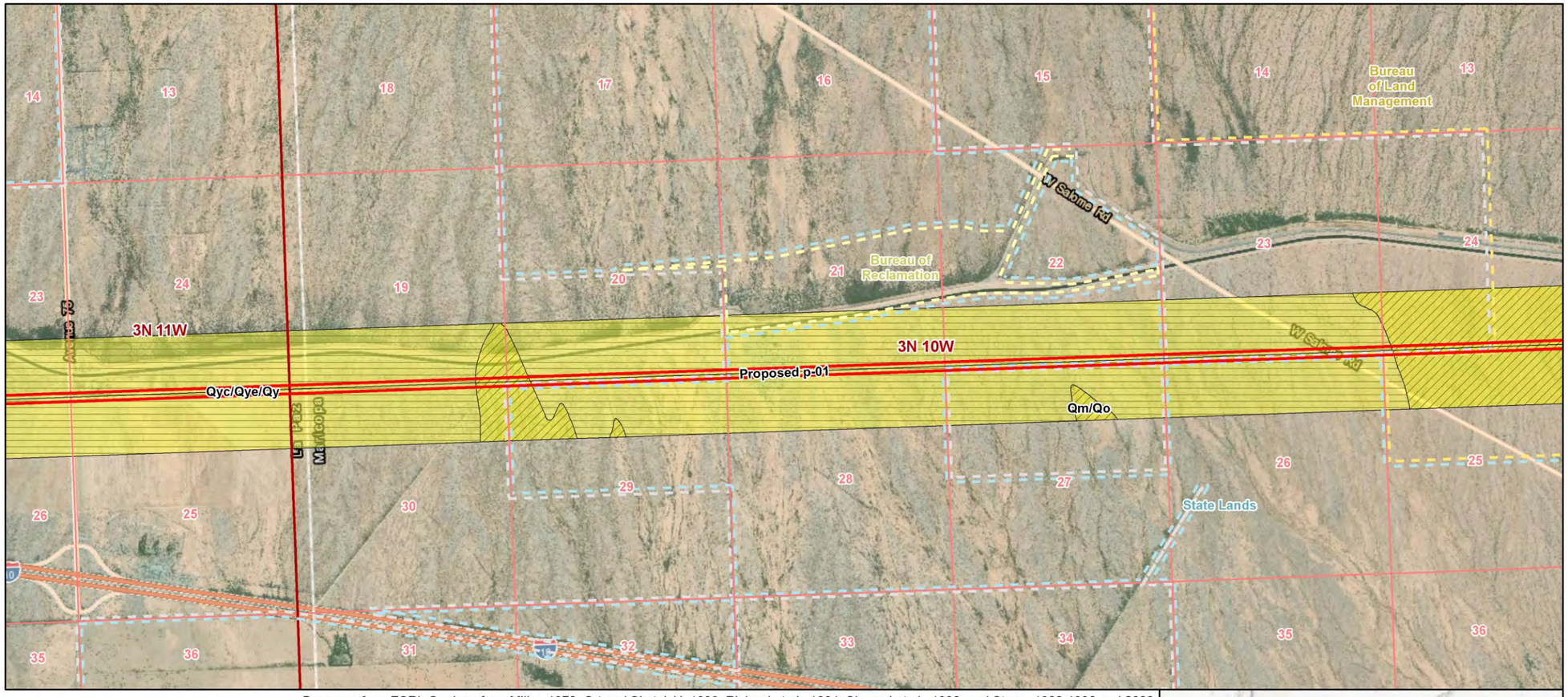


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

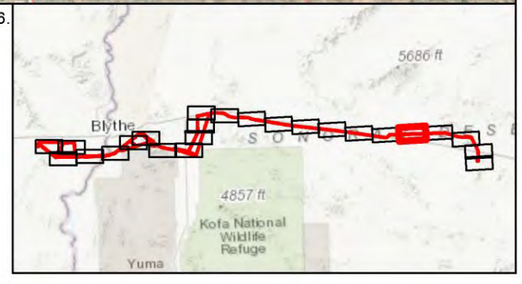
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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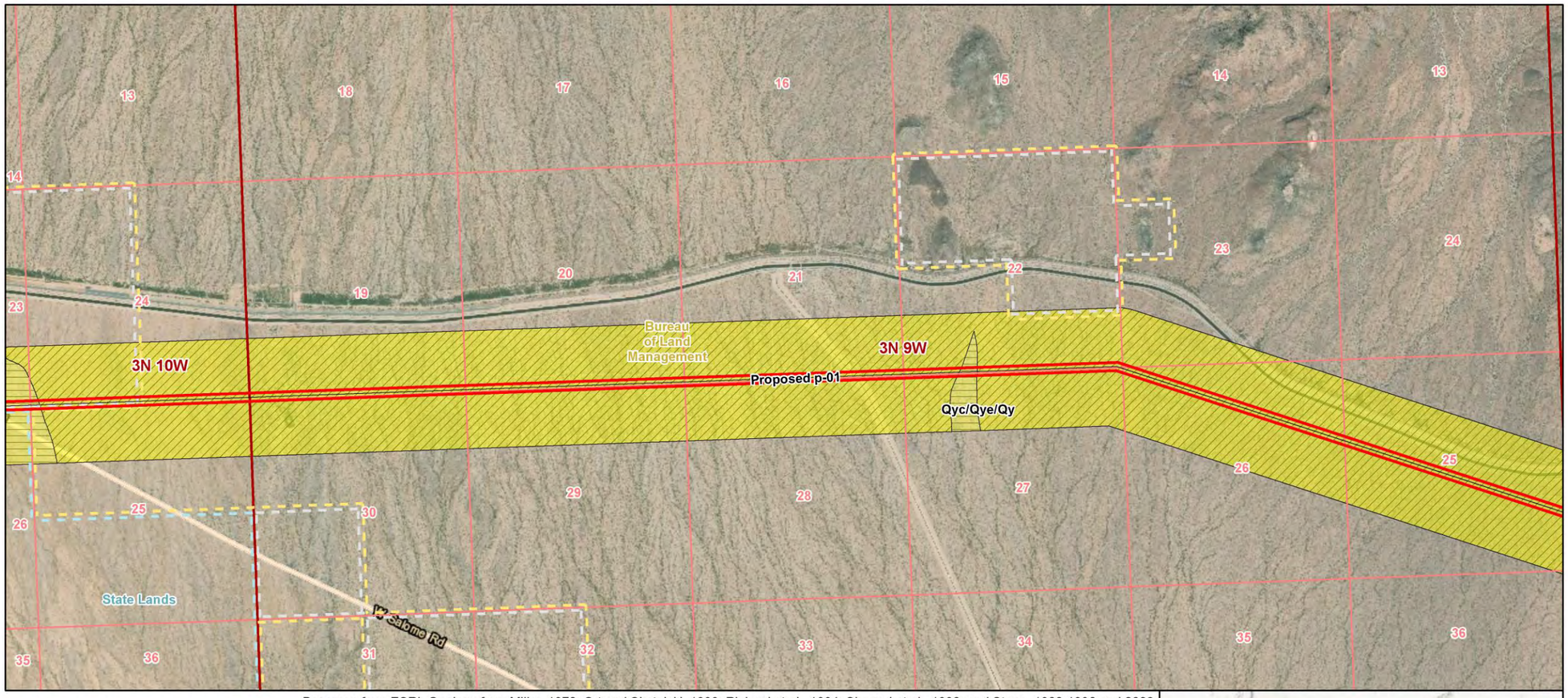


Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

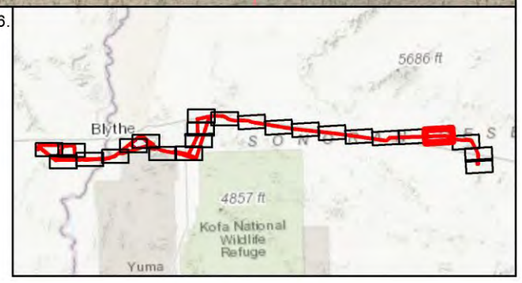
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)

Paleontological Potential (PFYC)

- Class 2 - Low
- Class 3 - Moderate



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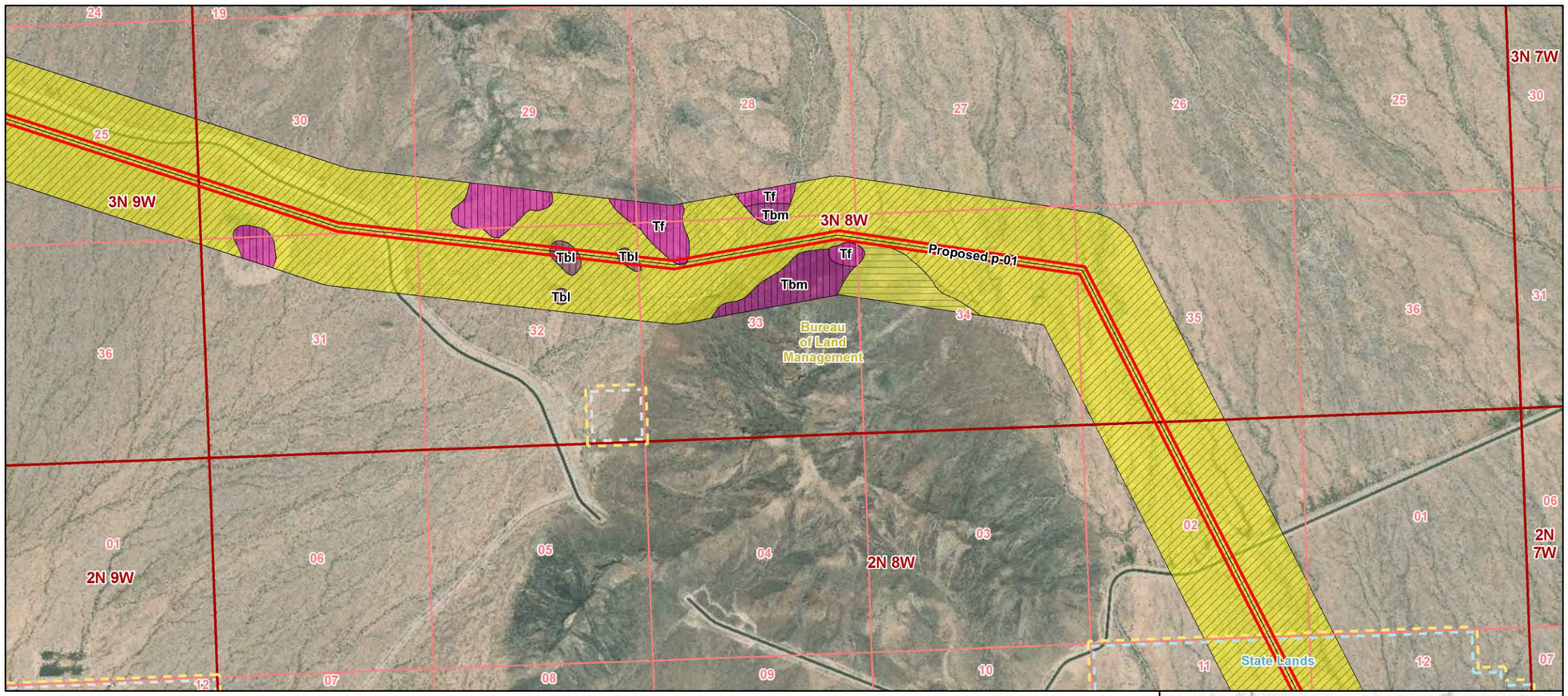

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Ten West Link Transmission Line Project

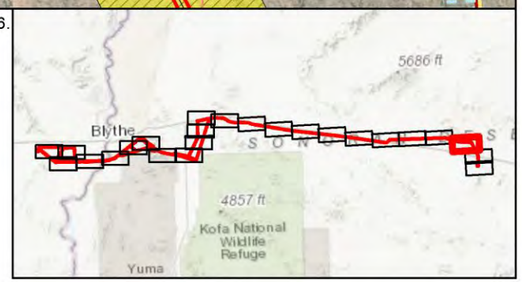
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qt: Talus (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)
- Tf: Felsic volcanic rocks (Miocene)
- Tbm: Middle basalt unit (Miocene)
- Tbl: Lower basaltic volcanic rocks (Miocene or Oligocene)

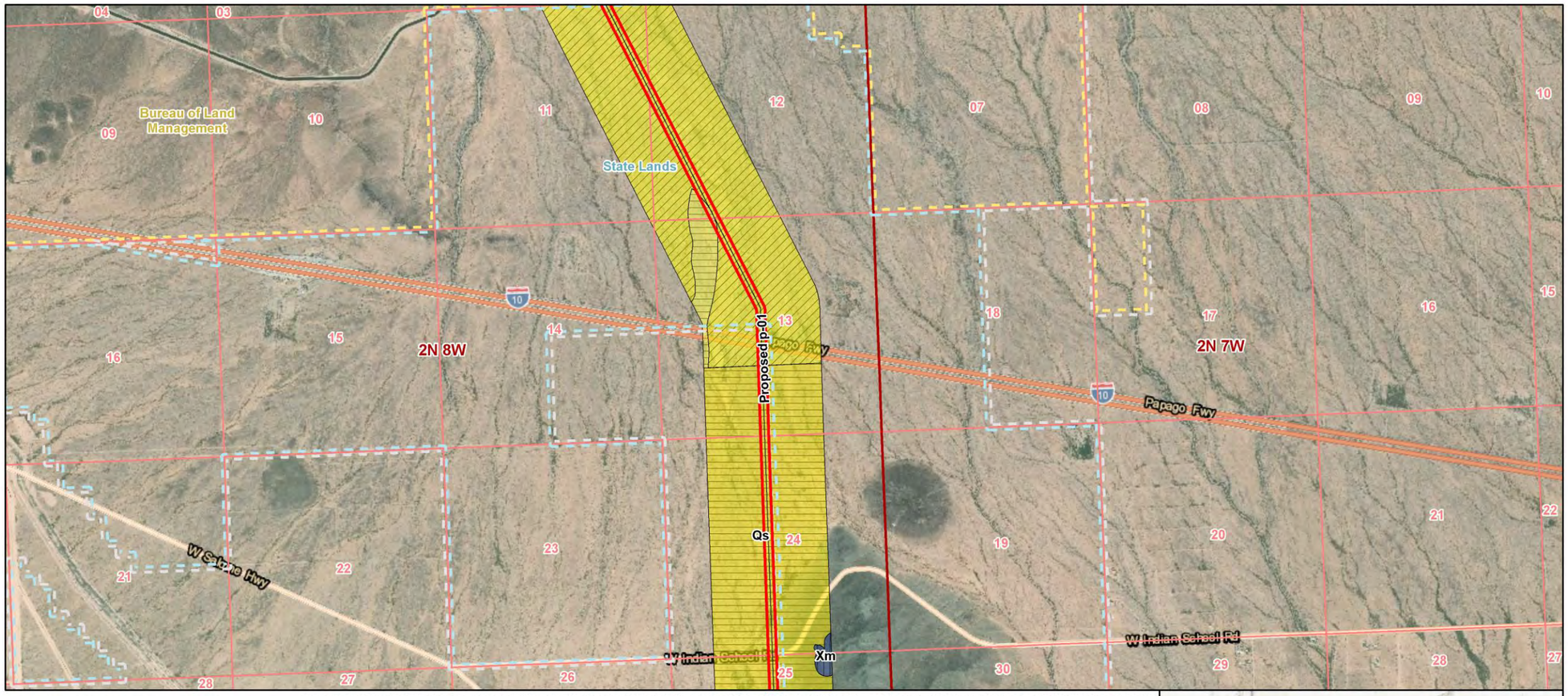
Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate



N

0 0.5 1 Miles



Ten West Link Transmission Line Project

- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

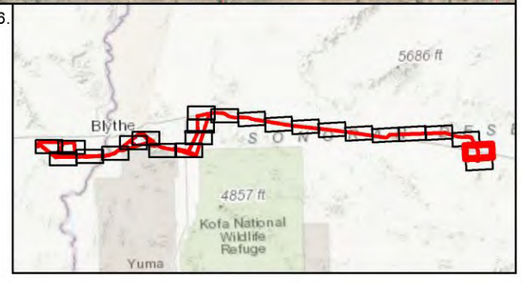
Geology Description

- Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)
- Qm/Qo: Alluvium (Late to early Pleistocene)
- Qs: Surficial Deposits (Quaternary)
- Xm: Slaty metavolcanic rocks (Proterozoic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low
- Class 3 - Moderate

Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.



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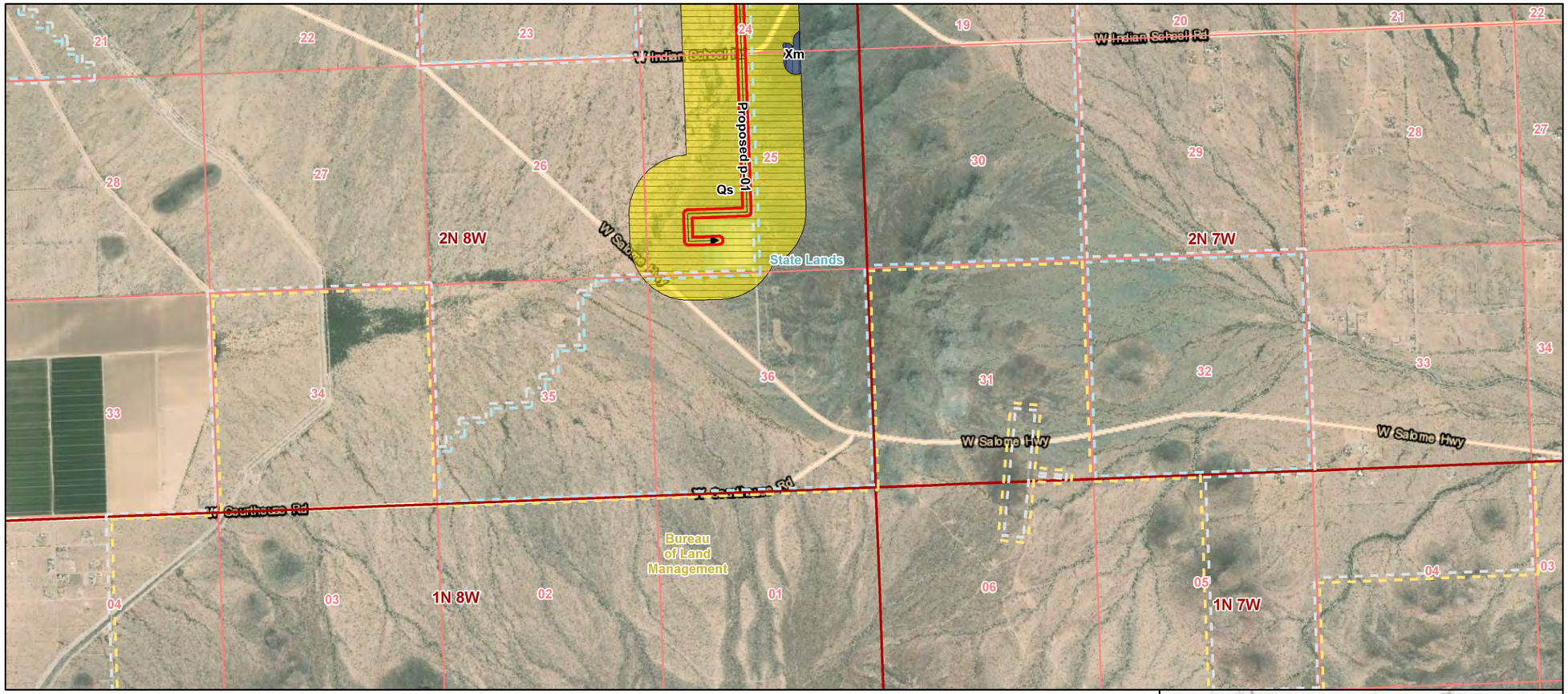
0 0.5 1 Miles



Basemap from ESRI; Geology from Miller, 1970; Ort and Skotnicki, 1993; Richard et al., 1994; Sherrod et al., 1990; and Stone, 1988-1990 and 2006.

Ten West Link Transmission Line Project

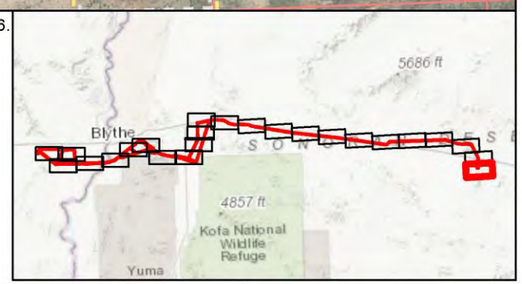
- ROW of BLM Preferred Route(s) and Subalternatives
- Centerline (Arrows Denote Ends of Segments)
- Bureau of Land Management (BLM)
- State
- Private or Unknown
- PLSS Township
- PLSS Section

Geology Description

- Qs: Surficial Deposits (Quaternary)
- Xm: Slaty metavolcanic rocks (Proterozoic)

Paleontological Potential (PFYC)

- Class 1 - Very Low
- Class 2 - Low



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N

0 0.5 1 Miles

APPENDIX C: MONITORING REQUIREMENTS BY WORK LOCATION

Segment	Geologic Unit	Paleontological Potential (PFYC)	Paleontological Requirements
ca-06	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
ca-07	Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
ca-09	Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qs: Eolian sand (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
cb-01	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
cb-02	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
cb-03	QTdf: Dissected fan deposits (Quaternary or Tertiary)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
	Jvbu: Volcanic rocks of the Dome Rock sequence, upper bedded unit (Jurassic)	Class 1 - Very Low	No monitoring
	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
cb-04	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
	QTdf: Dissected fan deposits (Quaternary or Tertiary)	Class 3 - Moderate	Full-time monitoring
cb-05	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Tf: Fanglomerate, sedimentary breccia, and slide blocks (Miocene and Oligocene?)	Class U - Unknown Potential	Part-time monitoring during excavations (no depth threshold)

Segment	Geologic Unit	Paleontological Potential (PFYC)	Paleontological Requirements
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
cb-06	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	QTdf: Dissected fan deposits (Quaternary or Tertiary)	Class 3 - Moderate	Full-time monitoring
i-01	Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
i-02	Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qm/Qo: Alluvium (Late to early Pleistocene)	Class 3 - Moderate	Full-time monitoring
i-03	Qa: Alluvium (Holocene and Pleistocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qm/Qo: Alluvium (Late to early Pleistocene)	Class 3 - Moderate	Full-time monitoring
	Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Yg: Granitoid (middle Proterozoic)	Class 1 - Very Low	No monitoring
	Ta: Andesite (Miocene or Oligocene)	Class 1 - Very Low	No monitoring
i-04	QToa: Older Alluvium (Quaternary or Tertiary)	Class 3 - Moderate	Full-time monitoring
	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	QTa: Hornblende-biotite andesite	Class 1 – Very Low	No monitoring
	Tf: Fanglomerate (Miocene)	Class U - Unknown Potential	Part-time monitoring during excavations (no depth threshold)
	Qa: Alluvium (Holocene and Pleistocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	QTbu: Basalt of Black Mesa (Quaternary or Tertiary)	Class 1 - Very Low	No monitoring
	pC3: Quartz-albite-muscovite-chlorite schist; meta-tuffaceous rock, Unit 3 (Paleozoic(?))	Class 1 - Very Low	No monitoring

Segment	Geologic Unit	Paleontological Potential (PFYC)	Paleontological Requirements
	pC4: Vitreous quartzite, medium to massively bedded, Unit 4 (Paleozoic(?))	Class 1 - Very Low	No monitoring
	Ta: Older hornblende-biotite andesite (Tertiary)	Class 1 - Very Low	No monitoring
i-05	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
Line Measure	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
p-07	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-08	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-08/09 North alt	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-09	KJmlu: McCoy Mountains Formations, lower part, undivided (Cretaceous or Jurassic)	Class 3 - Moderate	Full-time monitoring
	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-10	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
p-11 alt	QTdf: Dissected fan deposits (Quaternary or Tertiary)	Class 3 - Moderate	Full-time monitoring
	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring

Segment	Geologic Unit	Paleontological Potential (PFYC)	Paleontological Requirements
p-12	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	QTdf: Dissected fan deposits (Quaternary or Tertiary)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Jv: Volcanic rocks of the Dome Rock sequence (Jurassic)	Class 1 - Very Low	No monitoring
p-13	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-14	QTa: Alluvial fan and fluvial deposits (Quaternary and Tertiary?)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	QTe: Alluvial deposits of the Ehrenberg area (Pleistocene and/or Pliocene)	Class 3 - Moderate	Full-time monitoring
p-15e	H2O: water	Class W - Water	No monitoring
	QTe: Alluvial deposits of the Ehrenberg area (Pleistocene and/or Pliocene)	Class 3 - Moderate	Full-time monitoring
	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qw: Alluvium of modern washes (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-15w	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	H2O: water	Class W - Water	No monitoring
p-16	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
p-16 south	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	H2O: water	Class W - Water	No monitoring

Segment	Geologic Unit	Paleontological Potential (PFYC)	Paleontological Requirements
	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
	QTe: Alluvial deposits of the Ehrenberg area (Pleistocene and/or Pliocene)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
p-17	Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qa3: Alluvial-fan and alluvial-valley deposits, Unit 3 (Holocene and Pleistocene)	Class 2 – Low	Part-time monitoring during excavations 10 feet deep or greater
p-18	Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qa3: Alluvial-fan and alluvial-valley deposits, Unit 3 (Holocene and Pleistocene)	Class 2 – Low	Part-time monitoring during excavations 10 feet deep or greater
	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
	Qw: Alluvium of modern washes (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
Proposed p-01	Qyc/Qye/Qy: Alluvium/Eolian deposits (Holocene and late Pleistocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Tf: Felsic volcanic rocks (Miocene)	Class 1 - Very Low	No monitoring
	Tbl: Lower basaltic volcanic rocks (Miocene or Oligocene)	Class 1 - Very Low	No monitoring
	Qm/Qo: Alluvium (Late to early Pleistocene)	Class 3 - Moderate	Full-time monitoring
	Qs: Surficial Deposits (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
x-05	pCqm: Quartz monzonite (Precambrian)	Class 1 - Very Low	No monitoring
	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
x-06	Qat: Alluvium and talus (Quaternary)	Class 2 - Low	Part-time monitoring during

Segment	Geologic Unit	Paleontological Potential (PFYC)	Paleontological Requirements
			excavations 10 feet deep or greater
x-12	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
x-13	Qr: Alluvium of the modern Colorado River flood plain (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
x-15	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
x-16	Qpv: Alluvial deposits of Palo Verde Mesa (Pleistocene)	Class 3 - Moderate	Full-time monitoring
x-19	Qa6: Alluvial-fan and alluvial-valley deposits, Unit 6 (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater
	Qs: Eolian sand (Holocene)	Class 2 - Low	Part-time monitoring during excavations 10 feet deep or greater

APPENDIX D: CURATION AGREEMENT

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007
tel 213.763.DINO
www.nhm.org

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

8 January 2016

Paleo Solutions Inc
911 South Primrose Avenue, Unit J
Monrovia, CA 91016

Attn: Jennifer Kelly, Assistant Project Manager

Subject: Acceptance of fossil vertebrate remains from Paleontological Mitigation Related Projects on Bureau of Land Management properties in California

Dear Jennifer:

This letter will confirm our conditions regarding acceptance of the fossil vertebrate remains from Paleontological Mitigation Related Projects on Bureau of Land Management properties in California by the Department of Vertebrate Paleontology of the Natural History Museum of Los Angeles County [LACM-VP]. The Department is willing to consider accepting the collection(s) if all the following conditions are met:

All localities must be described according the standard format used on the LACM-VP locality form, including a description of the geographic position, lithology, stratigraphy, and depositional environment if known.

All localities must be plotted on standard USGS topographic maps.

All specimens must be fully stabilized and prepared.

All specimens must be designated in such a way as to directly tie them to the localities described above.

All specimens must be identified to the lowest taxonomic level possible.

The collection must be accompanied by both printed and digital copies of any field notes and mitigation or salvage reports.

The collection must be accompanied by a deed-of-gift or letter of transmittal giving free and clear title of the collection to the Natural History Museum of Los Angeles County.

The collection must be accompanied by specimen cabinets, drawers and trays similar to those used by the LACM-VP. This requirement is waved for a relatively small collection.

We estimate our costs for curation tasks for the localities described above, as well as the actual cataloguing of the specimens including placing the numbers on the bones, at $20 per locality and $15 per specimen. We further estimate our costs for the permanent storage and maintenance of a collection at $300 per cubic foot of fully prepared vertebrate fossils. If the equipment and supplies, including specimen cabinets, drawers, and trays, as well as the curation tasks for localities and specimens, are not provided by the donor, then we would greatly appreciate a donation to offset our costs. Any donation must be accompanied by a letter clearly stating that the donation is to be used solely for the permanent curation and storage of a specific collection of vertebrate fossils.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

APPENDIX E: PALEONTOLOGICAL RESOURCES MITIGATION MEASURES

- APM PALEO-01: Paleontological Resources Treatment Plan. DCRT would prepare a Paleontological Resources Treatment Plan that would describe procedures to be followed in the event of the discovery of paleontological resources during implementation of the Project. Upon approval of the draft plan, DCRT would follow the procedures set forth in that Plan during implementation of the Project.

- BMP PALEO-02: Paleontological Resources Monitor. A qualified paleontologist would provide monitoring for paleontological resources during construction in areas of high or unknown fossil potential.

- MM CUL-CEQA-3 Protect Paleontological Resources. The mitigation actions required by APM PALEO-01 and BMP PALEO-02 shall be accomplished by following the guidance within BLM IM 2009-11, which the CPUC has accepted as appropriate for CEQA (DRECP EIS/EIR). The following steps should be taken:
    - Project developers shall document in a paleontological resources assessment report whether paleontological resources exist in a project area on the basis of the following: the geologic context of the region and site and its potential to contain paleontological resources (including the PFYCs on site), a records search of institutions holding paleontological collections from California desert regions, a review of published and unpublished literature for past paleontological finds in the area, and coordination with paleontological researchers working locally in potentially affected geographic areas (or studying similar geologic strata).
    - If the PFYC (or PFYCs) of the geologic units to be encountered during project construction has not been determined, the project developer shall use the best available data and field surveys, as applicable, to develop a site-specific map of the PFYC ratings. The PFYC map shall be at a scale equal to or more detailed than 1:100,000. Depending on the extent of existing information available and the sensitivity of the site, development of the resource assessment and PFYC map could require the completion of a paleontological survey.
    - If paleontological resources are present at the site or if the geologic units to be encountered by the project (at the surface or the subsurface) have a PFYC Class of 3, 4, or 5, a Paleontological Resources Management Plan shall be developed. The elements of the plan shall be consistent with BLM IM 2009-11 and shall be prepared and implemented by a professional paleontologist as defined under Secretary of the Department of the Interior Standards. The plan shall include the following:
        - The qualifications of the principal investigator and monitoring personnel
        - Construction crew awareness training content, procedures, and requirements
        - Any measures to prevent potential looting, vandalism, or erosion impacts
        - The location, frequency, and schedule for on-site monitoring activities
        - Criteria for identifying and evaluating potential fossil specimens or localities

- A plan for the use of protective barriers and signs, or implementation of other physical or administrative protection measures
- Collection and salvage procedures
- Identification of an institution or museum willing and able to accept any fossils discovered
- Compliance monitoring and reporting procedures

- The Paleontological Resources Management Plan shall also identify if all geologic units that would be affected by the project have been determined to be within an area with a PFYC Class of 1 or 2, the lead agency shall include paleontological resources as an element in construction worker awareness training and shall include measures to be followed in the event of unanticipated discoveries, including suspension of construction activities in the vicinity. The measure shall stipulate that the site be protected from further earth moving or damage until a qualified paleontologist can assess the significance and importance of the find and until the fossil specimen or locality can be recorded and salvaged, if necessary.

- The Paleontological Resources Management Plan shall evaluate all of the construction methodologies proposed on a site, including destructive excavation techniques. Where applicable, the principal investigator shall include in the plan an evaluation of the potential for such techniques to disturb or destroy paleontological resources, an evaluation of whether loss of such fossils would represent a significant impact, and discussion of mitigation or compensatory measures (such as recordation/recovery of similar resources elsewhere on the site) that are necessary to avoid or substantially reduce the impact.

APPENDIX F: PLSS AND SURFACE MANAGEMENT

Quarter-Quarter	Section	Township	Range	State	Land Administer
L1, NWSE, SENE, SWNE, SWSE, SWSW	1	2N	19W	AZ	Bureau of Land Management (BLM)
NESW, NWSW, SESE, SESW, SWSE, SWSW	2	2N	19W	AZ	BLM
L1, L4, NESE, NESW, NWSE, NWSW, SENE, SENW, SESE, SESW, SWNE, SWNW, SWSE	3	2N	19W	AZ	BLM
L1, L2, L3, L4, NESE, NWSE, SENE, SENW, SWNE, SWNW	4	2N	19W	AZ	BLM
L1, L2, L3, L4, SENE, SWNE	5	2N	19W	AZ	BLM
L1, L2	6	2N	19W	AZ	BLM; Department of Defense (DOD) Yuma Proving Ground
NENE	10	2N	19W	AZ	BLM
NENE, NENW, NWNE, NWNW, SENE	11	2N	19W	AZ	BLM
NENW, NWNE, NWNW, SENW, SWNW	12	2N	19W	AZ	BLM
L1, L2, L3, SENW, SWNE, SWNW	2	2N	22W	AZ	BLM
NESE, NESW, NWSE, NWSW, SENE, SWSW	3	2N	22W	AZ	BLM
NESE, SESE, SESW, SWSE, SWSW	4	2N	22W	AZ	BLM, State (ST)
L6	5	2N	22W	AZ	Bureau of Reclamation (BOR); ST
L6, NENE	8	2N	22W	AZ	BOR; ST
L3, L7, L8, L10, L14, SESE, SWSE	2	2N	8W	AZ	BLM; ST
NENE, SENE	11	2N	8W	AZ	ST
NWSW, SESW, SWNW, SWSW	12	2N	8W	AZ	ST
NENW, NESW, SENW, SESW	13	2N	8W	AZ	Private/Undetermined (PVT); ST
NENW, NESW, SENW, SESW	24	2N	8W	AZ	PVT
NEWN, NESW, NWSW, SENW, SESW, SWSW	25	2N	8W	AZ	PVT
L4, SESE, SESW, SWSE	19	3N	10W	AZ	PVT
SESE, SESW, SWSE, SWSW	20	3N	10W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	21	3N	10W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	22	3N	10W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	23	3N	10W	AZ	BLM; PVT; ST
SESE, SESW, SWSE, SWSW	24	3N	10W	AZ	BLM; PVT
NENE, NENW, NWNE, NWNW	25	3N	10W	AZ	BLM

Quarter-Quarter	Section	Township	Range	State	Land Administer
NENE, NENW, NWNE, NWNW	26	3N	10W	AZ	BLM; ST
NENE, NENW, NWNE, NWNW	27	3N	10W	AZ	PVT; ST
NENE, NWNE	28	3N	10W	AZ	PVT; ST
SESE	21	3N	11W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	22	3N	11W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	23	3N	11W	AZ	PVT
SESE, SESW, SWSE, SWSW	24	3N	11W	AZ	PVT
NENE, NESW, NWNE, NWSW, SENW, SWNE	28	3N	11W	AZ	PVT
NESE, NESW, NWSE, SENW, SWNE, SWNW	29	3N	11W	AZ	PVT
L1, L2, SENE, SENW, SWNE	30	3N	11W	AZ	PVT
L1, NENW, NWNE, SENE, SENW, SWNE	19	3N	12W	AZ	BOR; ST
NESE, SENE, SENW, SWNE, SWNW	20	3N	12W	AZ	ST
NESE, NESW, NWSE, NWSW	21	3N	12W	AZ	ST
NESW, NWSW, SESE, SESW, SWSW	22	3N	12W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	23	3N	12W	AZ	PVT; ST
NENE, NENW, NWNE, NWNW, SESE	25	3N	12W	AZ	PVT; ST
NENE, NWNE	26	3N	12W	AZ	ST
SWSW	13	3N	13W	AZ	BLM
SESE, SESW, SWSE, SWSW	14	3N	13W	AZ	BLM
NESW, NWSE, NWSW, SESE, SESW, SWSE	15	3N	13W	AZ	BLM
NESE, NESW, NWSE, NWSW, SWNW	16	3N	13W	AZ	BLM
NESE, SENE, SENW, SWNE, SWNW	17	3N	13W	AZ	BLM
L1, L2, NENW, SENE, SENW, SWNE	18	3N	13W	AZ	BLM
NENE	23	3N	13W	AZ	BLM
NENE, NENW, NWNE, NWNW	24	3N	13W	AZ	BLM; ST
L2, NESE, SENE, SENW, SWNE	7	3N	14W	AZ	PVT; ST
NESE, NESW, NWSE, NWSW, SWNW	8	3N	14W	AZ	PVT; ST
NESE, NESW, NWSE, NWSW, SESE, SWSE	9	3N	14W	AZ	PVT; ST
SESE, SESW, SWSE, SWSW	10	3N	14W	AZ	ST
SESW, SWSE, SWSW	11	3N	14W	AZ	ST

Quarter-Quarter	Section	Township	Range	State	Land Administer
NENE, NENW, NWNE, NWNW	13	3N	14W	AZ	BLM
NENE, NENW, NWNE	14	3N	14W	AZ	BLM; ST
SESW, SWSE, SWSW	3	3N	15W	AZ	BLM; ST
NESW, NWSW, SESE, SESW, SWSE	4	3N	15W	AZ	ST
NESE, NESW, NWSE, NWSW, SWNW	5	3N	15W	AZ	ST
L5, NESE, SENE, SENW, SWNE	6	3N	15W	AZ	BLM; ST
NENE, NWNE	10	3N	15W	AZ	BLM
NENE, NENW, NWNE, NWNW	11	3N	15W	AZ	BLM
NENW, NWNW, SENE, SENW, SWNE, SWNW	12	3N	15W	AZ	BLM: ST
N/A	1	3N	16W	AZ	BLM
N/A	2	3N	16W	AZ	BLM
L4	4	3N	18W	AZ	BLM
L1, NESE, NWSE, SENE, SESE, SWSE	5	3N	18W	AZ	BLM
L4, L5, L6, L7	6	3N	18W	AZ	BLM
L1, L2, L3, L4	7	3N	18W	AZ	BLM
NESW, NWNE, NWSE, SENW, SESW, SWNE	8	3N	18W	AZ	BLM
NENW, NWNW, NWSW, SWNW, SWSW	17	3N	18W	AZ	BLM
L1, SESE	18	3N	18W	AZ	BLM
NEE, NESE, NWSE, SENE, SWSE	19	3N	18W	AZ	BLM
L4, NESW, NWNE, SENW, SESW, SWNE	30	3N	18W	AZ	BLM
L1, L2, L3, L4, NENW	31	3N	18W	AZ	BLM
NESE, SENE, SESE	1	3N	19W	AZ	BLM
NENE, NESE, SENE, SESE	12	3N	19W	AZ	BLM
NENE, NESE, NWSE, SENE, SESW, SWNE, SWSE	13	3N	19W	AZ	BLM
SESE	23	3N	19W	AZ	BLM
NENW, NWSW, SENW, SWNW, SWSW	24	3N	19W	AZ	BLM
NENE, NWSE, SENE, SESW, SWNE, SWSE	26	3N	19W	AZ	BLM
L3, L4, NESE, NESW, NWSE, SESW, SWSE	31	3N	19W	AZ	BLM; DOD Yuma Proving Grounds
NWSW, SESE, SESW, SWSE, SWSW	32	3N	19W	AZ	BLM
SWSW	33	3N	19W	AZ	BLM
SESE	34	3N	19W	AZ	BLM
NENW, NWSW, SENW, SWNW, SWSW	35	3N	19W	AZ	BLM
NESE, SESE	36	3N	19W	AZ	BLM
L4, L5	18	3N	20W	AZ	Bureau of Indian Affairs (BIA) Colorado River

Quarter-Quarter	Section	Township	Range	State	Land Administer
					Reservation; BLM
N/A	19	3N	20W	AZ	BIA Colorado River Reservation; BLM
N/A	20	3N	20W	AZ	BLM
N/A	28	3N	20W	AZ	BLM
N/A	29	3N	20W	AZ	BLM
N/A	30	3N	20W	AZ	BLM
N/A	33	3N	20W	AZ	BLM
NENW, NWNW, SENE, SENW, SWNE	34	3N	20W	AZ	BLM
NESE, NESW, NWSE, SENW, SWNW	35	3N	20W	AZ	BLM
NESW, NWSE, NWSW, SESE, SESW, SWSE	36	3N	20W	AZ	BLM
L3, L4, L8, NESE, SESW, SWSW	11	3N	21W	AZ	BIA Colorado River Reservation; BLM
L1, SESW	12	3N	21W	AZ	BIA Colorado River Reservation
L1, L3, L4, L5, L7, L8, L9, L10, NENE, NESW, NWNE, SWSE	13	3N	21W	AZ	BIA Colorado River Reservation; BLM
L1, NEW, NWNE, NWNW, SENE	14	3N	21W	AZ	BLM; BOR
NENE, NESW, NWSE, NWSW, SENE, SENW, SWNE, SWSW	15	3N	21W	AZ	BOR
SESE	16	3N	21W	AZ	BLM; BOR
NESE, SESE, SESW, SWSE	20	3N	21W	AZ	BLM
NENE, NENW, NWNE, NWSW, SENW, SESW, SWNE, SWNW, SWSE, SWSW	21	3N	21W	AZ	BLM
NENE	24	3N	21W	AZ	BLM
NENE, NWNE, SENE, SENW, SWNE, SWNW	25	3N	21W	AZ	BLM
NESW, NWSE, NWSW, SENE, SWNE	26	3N	21W	AZ	BLM
NESE, NESW, NWSE, NWSW, SESE, SESW, SWNW, SWSE, SWSW	27	3N	21W	AZ	BLM; BOR
NEE, NWNE, SENE, SESE, SWSE	28	3N	21W	AZ	BLM; BOR
NENW, NWNE, NWNW, SWNW	29	3N	21W	AZ	BLM
L4, NESE, NESW, NWSE, SENE, SESW, SWSE	30	3N	21W	AZ	BLM
L1, L3, NESE, NESW, NWSE	31	3N	21W	AZ	BLM
NENE, NWSW, SENE, SENW, SWNE, SWNW	32	3N	21W	AZ	BLM
NENE, NENW, NWNE, NWNW, SWNW	33	3N	21W	AZ	BLM

Quarter-Quarter	Section	Township	Range	State	Land Administer
SESE	35	3N	22W	AZ	BLM
NENE, NESE, NESW, NWSE, NWSW, SENE, SESW, SESE, SESW, SWNE, SWSE, SWSW	36	3N	22W	AZ	BLM
N/A	30	3N	8W	AZ	BLM
N/A	31	3N	8W	AZ	BLM
NENE, NENW, NWNE, NWNW	32	3N	8W	AZ	BLM
N/A	33	3N	8W	AZ	BLM
N/A	34	3N	8W	AZ	BLM
N/A	35	3N	8W	AZ	BLM
L4, SESE, SESW, SWSE	19	3N	9W	AZ	BLM
SESE, SESW, SWSE, SWSW	20	3N	9W	AZ	BLM
SESE, SESW, SWSE, SWSW	21	3N	9W	AZ	BLM
SESE, SESW, SWSE, SWSW	22	3N	9W	AZ	BLM
SWSW	23	3N	9W	AZ	BLM
NESE, NESW, NWSE, SENW, SESE, SWNW	25	3N	9W	AZ	BLM
NEWN, NWNE, NWNW, SENE, SWNE	26	3N	9W	AZ	BLM
NENE, NENW, NWNE, NWNW	27	3N	9W	AZ	BLM
NENE, NENW, NWNE, NWNW	28	3N	9W	AZ	BLM
NENE, NENW, NWNE, NWNW	29	3N	9W	AZ	BLM
L1, NENE, NENW, NWNE	30	3N	9W	AZ	BLM
L4	30	4N	16W	AZ	BLM
L1, NENE, NENW, NWNE, SENE, SWNE	31	4N	16W	AZ	BLM
NESE, SENE, SENW, SWNE, SWNW	32	4N	16W	AZ	BLM
NESE, NESW, NWSE, NWSW, SWNW	33	4N	16W	AZ	BLM
NESW, NWSW, SESE, SESW, SWSE, SWSW	34	4N	16W	AZ	BLM
SESW, SWSE, SWSW	35	4N	16W	AZ	BLM
N/A	19	4N	17W	AZ	BLM
N/A	25	4N	17W	AZ	BLM
N/A	26	4N	17W	AZ	BLM
N/A	27	4N	17W	AZ	BLM
N/A	28	4N	17W	AZ	BLM
N/A	29	4N	17W	AZ	BLM
N/A	30	4N	17W	AZ	BLM
SESE	19	4N	18W	AZ	BLM
SESE, SESW, SWSE, SWSW	20	4N	18W	AZ	BLM
NESE, NESW, NWSE, SESE, SESW, SWSE,	21	4N	18W	AZ	BLM

Quarter-Quarter	Section	Township	Range	State	Land Administer
SWSW					
NESE, NESW, NWSE, NWSW	22	4N	18W	AZ	BLM
NESE, NESW, NWSE, NWSW, SWNE	23	4N	18W	AZ	BLM
NESE, NESW, NWSE, NWSW	24	4N	18W	AZ	BLM
NESW, NWNE, NWSE, SESW, SWNE	28	4N	18W	AZ	BLM
NWNW	29	4N	18W	AZ	BLM
L1, L2, L3, L4, NENE, NENW, NWNE	30	4N	18W	AZ	BLM
L1, L2, L3, L4	31	4N	18W	AZ	BLM
SESE	32	4N	18W	AZ	BLM
NENW, NWSW, SENW, SWNW, SWSW	33	4N	18W	AZ	BLM
SESE, SESW, SWSE, SWSW	3	7S	21E	CA	BLM
SESE, SESW, SWSE, SWSW	4	7S	21E	CA	BLM
SESE, SESW, SWSE, SWSW	5	7S	21E	CA	BLM
NESE, SESE	7	7S	21E	CA	BLM
NENW, NESW, NWNW, NWSW, SESE, SESW, SWNW, SWSW	8	7S	21E	CA	BLM
NENE, NENW, NWNE, SWSW	9	7S	21E	CA	BLM
NENE, NENW, NWNE, NWNW	10	7S	21E	CA	BLM
NENE, NENW, NWNE, NWNW	11	7S	21E	CA	BLM
NENE, NENW, NWNW	12	7S	21E	CA	BLM
NESE, SESE	13	7S	21E	CA	BLM
SWSW	15	7S	21E	CA	BLM
SESE	16	7S	21E	CA	BLM
NENE	17	7S	21E	CA	BLM
NENW, NESE, NWNE, NWNW, SENE, SENW, SWNE	22	7S	21E	CA	BLM
NWSW, SESW, SWSW	23	7S	21E	CA	BLM
NENE, NESW, NWNE, NWSE, SESW, SWNE, SWSW	24	7S	21E	CA	BLM
NESW, NWNW, NWSW, SENW, SWNW	25	7S	21E	CA	BLM
NENW, NESE, NWNE, SENE, SWNE	26	7S	21E	CA	BLM
N/A	7	7S	22E	CA	BLM
N/A	8	7S	22E	CA	BLM
N/A	18	7S	22E	CA	BLM
N/A	Unsectioned	7S	23E	CA	ST

2B.14 FIRE PROTECTION PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Fire Protection and Prevention Plan

PROJECT NUMBER:
154320

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POWER ENGINEERS

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Fire Protection and Prevention Plan

PREPARED FOR: BUREAU OF LAND MANAGEMENT

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TABLES:

ATTACHMENT:

ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
CEQA	California Environmental Quality Act
CIC	Compliance Inspection Contractor
CPUC	California Public Utilities Commission
DCRT	Delaney Colorado River Transmission, LLC
FMO	Fire Management Officer
Plan	Fire Protection and Prevention
Project	Ten West Link Transmission Project
Proponent	DCRT Transmission, LLC
ROW(s)	right(s)-of-way
Ten West Link	Ten West Link Transmission Project

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1 Introduction

This Fire Protection and Prevention Plan (Plan) describes the measures to be taken by Delaney Colorado River Transmission, LLC (DCRT or Proponent) and its Construction Contractor(s) to ensure fire prevention and suppression measures are carried out in accordance with federal, state, and local regulations for the Ten West Link Transmission Project (Project or Ten West Link). Measures identified in this Plan apply to work within the Project area defined as the right-of-way (ROW); access roads; temporary work and storage areas; and other areas used during construction, operation, maintenance, and decommissioning of the Project.

1.1 Plan Purpose

The purpose of the Plan is to provide safe procedural practices, environmental protection measures, and other specific stipulations and methods to prevent and respond to fires during construction and operation of the Project. The final Plan will provide construction crews, environmental monitors, the Construction Contractor's Fire Marshal, and Compliance Inspection Contractor (CIC) with Project-specific information concerning fire protection procedures. The detailed final Plan will define fire prevention practices, establish fire protection requirements, control of combustible materials and flammable liquids and establish communication for agency responses in the event of a fire. Procedures in this Plan will apply to all land jurisdictions.

2 Regulatory Compliance

The Bureau of Land Management (BLM) requires holders of ROW grants to prepare a Fire Protection and Prevention Plan and adhere to its requirements during construction. The Project will be subject to state, county and federally enforced laws, ordinances, rules and regulations that pertain to fire prevention and suppression activities. Key regulatory agencies include the BLM, Blythe Fire Departments, California Department of Forestry and Fire Protection, and Maricopa, La Paz, Yuma, and Riverside County Fire Districts near the Project area.

3 Responsibilities

3.1 Project Proponent

DCRT and its' contractors are responsible for identifying fire prevention measures, monitoring adherence to fire protection protocols, developing emergency response procedures and communicating this information to Project personnel. To facilitate this goal, DCRT, through its Project Manager and Environmental Compliance Manager, will maintain regular and consistent communication with the Construction Contractor's Fire Marshal, CIC, environmental inspectors and Construction Contractor(s) to implement fire prevention measures and response to fire incidents throughout the construction process. In the event of a fire, the BLM Fire Management Officer (FMO), Construction Contractor's personnel, operations and maintenance crews (as applicable), DCRT Project Manager, and local fire departments would be involved in the emergency response.

3.2 Bureau of Land Management and Other Land Jurisdictions

The BLM FMO will oversee all fire control activities in his/her administrative unit. The FMO will coordinate with the CIC and/or BLM Authorized Officer in the event of a fire to review follow-up reporting and suggested adaptive management measures. All wildfires will be managed in accordance with the BLM's Phoenix District Fire Management Plan and California Desert District Fire Management Plan.

Procedures in this Plan will apply to all land jurisdictions within the Project area.

3.3 Compliance Inspection Contractor

In the event of a fire on BLM land, and all other land jurisdictions, the CIC will report the incident to the Prescott Dispatch Center, Federal Interagency Communication Center, and Perris Emergency Coordination Center and assist with follow-up investigations of the incident with the FMO, Construction Contractor's Fire Marshal, and BLM Authorized Officer.

3.4 Construction Contractor

Fire prevention measures identified in this Fire Protection and Prevention Plan will be implemented and adhered to by all construction personnel, operation and maintenance personnel, and decommissioning personnel. Contractor(s) will provide fire suppression training and equipment to their employees to prevent or minimize the spreading of fires that may occur. Training should include identifying predetermined locations for employees to assemble should a fire occur that cannot be safely controlled with the personnel and resources available.

During Project construction, the contractor(s) will be responsible for fire prevention, initial fire suppression actions and rehabilitation as directed by the DCRT Project Manager. Fires resulting from contractor activities, occurring in or out of the Project area, will be addressed immediately, in a manner that protects personnel safety. In the event of a fire, it will be the responsibility of the Construction Contractor(s) to respond to the incident and report to the DCRT Project Manager, CIC, Environmental Compliance Manager and the Construction Contractor's Fire Marshal. The Construction Contractor(s) will be responsible for any fire started, in or out of the Project area, by its employees or operations during construction as well as for fire suppression and rehabilitation. The Construction Contractor(s) will take aggressive action to prevent and suppress fires on, and adjacent to, the Project area and will utilize personnel and equipment for fighting fires within the Project area. If a fire is started by construction crews and can be adequately and sufficiently put out with the tools on-site then crews will do so, if the fire spreads quicker than expected the first concern is personnel safety and the site should be evacuated. The site should also be evacuated if the fire is exceptionally hot or has toxic fumes. Project personnel will not fight large fires with water trucks or equipment unless instructed by the BLM or emergency crews. On-site Project water trucks will be used for fire control if requested by the BLM or emergency crews.

Specific construction-related activities and safety measures will be implemented during construction of the transmission line to prevent fires and to ensure quick response and suppression in the event a fire occurs as specified in this Fire Protection and Prevention Plan. Fire prevention and protection measures shall be utilized for construction, reclamation, operation and maintenance and decommissioning if needed.

3.4.1 Construction Contractor's Fire Marshal

Each Construction Contractor will identify a Fire Marshal for the transmission line construction project. A Fire Marshal(s) shall be dedicated for construction, reclamation, operation and maintenance, and decommissioning if needed. The Fire Marshal's responsibilities include the following:

- Participate in communications with the CIC.
- Issue current fire potential and fire safety warnings.
- Perform inspections of contractor storage areas, especially areas where flammable materials are stored, to ensure safety measures are being followed.
- Perform corrective actions when fire protection requirements are not in compliance.
- Inspect tools, first-aid supplies and fire suppression equipment to ensure readiness in the event of an emergency.
- Post smoking and fire rules at centrally visible locations.
- Identify activities that present fire risk, issue warnings as appropriate and communicate prevention strategies to construction personnel.
- Communicate activities that must be limited or modified during periods of increased fire danger.
- Periodically conduct briefings for personnel to remind of the requirements of the Fire Protection and Prevention Plan.
- Enforce Project rules on smoking in the Project area, including prohibiting smoking in areas other than those designated by the BLM.
- Report all wildfires in accordance with the notification procedures described in the notification section (below).
- Report fires to 911 first and then to the CIC, and DCRT Project Manager in accordance with the notification procedures identified in this Plan.
- Coordinate initial response to contractor-caused fires with the Project areas. Suppression activities should be continued until fire response agencies have arrived and taken control of the site. Fire suppression personnel and equipment, including water trucks, will be dispatched within 15 minutes from the time a fire is reported.
- Assist with follow-up investigations of the fire incident with the CIC, FMO, and DCRT Project Manager as needed. Provide adaptive management measures, as necessary, to prevent future fire incidents.
- Manage rehabilitation efforts in accordance with BLM and DCRT directives.

3.4.2 Contractor Employees

The Contractor Employees' responsibilities include the following:

- Be familiar with and implement fire prevention measures included in this Fire Protection and Prevention Plan.
- Communicate any concerns regarding fire risks to your company's Fire Marshal.
- In the event of a fire, immediately call 911, then notify the Contractor Project Manager and CIC and initiate fire suppression activities is accordance with your level of emergency response training.
- Know the locations of Project tools, fire suppression equipment, first-aid kits and safety zone assembly areas.

4 Fire Prevention Plan

4.1 Preconstruction and Construction

The National Fire Protection Association codes and standards includes numerous documents which are applicable to this Project including, but not limited to the following:

- Standard for Electrical Safety in the Workplace
- Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
- Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives
- Recommended Practice on Static Electricity
- Standard for Portable Fire Extinguishers
- Standard for General Storage
- Standard for Wildfire Control

Methods and procedures to be implemented prior to and during construction, operation, maintenance, and termination of the Project to minimize the risk of fire are described in the following sections.

4.1.1 Training

The Construction Contractor will train all personnel on the measures to take in the event of a fire. The Construction Contractor will also inform each construction crew member of fire dangers, locations of extinguishers and equipment, safe locations, and escape routes should a fire exceed immediate control and individual responsibilities for fire prevention and suppression during regular safety briefings. Smoking and fire rules also will be discussed with the Construction Contractor and all field personnel during the Project's environmental training.

4.1.2 Pioneering Activities

Pioneering activities have the potential to start fires. Sparks can be created as a result of metal blades on bulldozers or excavators hitting rock. Fire prevention practices may be necessary during these situations and proper fire-fighting tools will be on site such as backpack water pumps (five-gallon minimum capacity), shovels, Pulaski, and fire extinguishers, etc.

4.1.3 Warning Devices

Only battery-powered or electric warning devices are approved for use in the Project area. Torches, highway flares, fuses, and any device using an open flame are prohibited.

4.1.4 Burning

No fires or barbeques are allowed on any construction-related area including the transmission ROW, material storage areas, construction laydown areas, access roads, substation areas, or other construction area. This prohibits fires of any type, for any purpose.

4.1.5 Explosives and Flammable Materials

In the event that blasting activities are necessary during the course of construction, the CIC and Construction Contractor's Fire Marshal must receive prior notification. Fire suppression equipment must be available in the blasting contractor's vehicle.

Flammable materials must be kept clear (a minimum of 10 feet away) from areas where sparks or flames may be generated. Flammable materials will be appropriately stored; for example, oxygen cylinders must be separated from fuel gas cylinders or other combustible items a minimum distance of 20 feet. Otherwise, a non-combustible barrier which provides an appropriate fire resistance rating may be provided, and the minimum separation distance can be reduced to five feet. Outdoor storage of flammable liquids in approved containers with no more than 60-gallon capacity are subject to the following restrictions:

- The total capacity of any one group of containers stored together must not exceed 1,100 gallons. Each group of containers must be at least five feet apart, and each group must be at least 20 feet away from any building or other combustibles.

- Each group of containers must be adjacent to an access way at least 12 feet wide to facilitate the use of firefighting equipment.

4.1.6 Welding

Welding and cutting activities are anticipated during construction. The contractor's Construction Manager must approve welding or cutting of transmission line equipment and components.

Grinding, cutting and welding must take place in areas where vegetation and flammable materials have been cleared. Preventive equipment such as spark shields may be used; vegetation in the immediate area may be wetted as a precaution and a spotter should

monitor the area for ignitions for at least one hour after the activity takes place. The spotter should have fire suppression equipment including ABC-rated five-pound extinguishers, backpack water pumps (five-gallon minimum capacity) and a round-blade shovel.

4.1.7 Spark Arrestors

Spark arrestors that meet agency standards must be used on internal combustion engines on roads where vegetation is present. All spark arrestors must be maintained in good working order. Light trucks and cars equipped with factory-installed mufflers (in good condition) are allowed on roads where the vegetation has been cleared from the roadway. Since vehicles equipped with catalytic converters are potential fire hazards, they must be parked in areas cleared of vegetation. Flues used in work areas must also be equipped with working spark arrestors that comply with agency standards.

4.1.8 Power Saws

Approved spark arrestors and mufflers are required on all gasoline-powered saws. This equipment must be maintained in proper working condition and should be inspected periodically. Chain saws must be managed under the following restrictions:

- Spark arrestors/mufflers must include a 0.023-inch mesh, stainless steel screen.
- Operators using power saws must have an approved, portable fire extinguisher and a long-handled, round blade, size 0 shovels in proper working condition.
- Power saws shall be refueled in an area cleared of flammable materials and the operator must not restart the equipment until it has been moved at least 10 feet from the refueling location. Gasoline must be contained in approved metal safety containers.

4.1.9 Refueling

Fuel trucks must carry a 35-pound minimum fire extinguisher intended for use on electrical and fuel fires. Standard operating procedures pertaining to fueling will be in place and will be followed. While helicopters are fueled, the fuel truck must be grounded to the helicopter.

4.1.10 Smoking

Smoke only in approved areas. No smoking will be allowed while operating equipment, near flammable materials, or while walking or working in areas with vegetation. In areas where smoking is allowed, completely extinguish tobacco products and matches, disposing of them in ash trays or other designated locations. Discarded cigarettes would be properly disposed of and would not be littered on the ROW. These items are NEVER to be thrown on the ground. Review and comply with smoking and fire hazard information posted on project bulletin boards, portable restroom facilities, break areas, material storage areas and parking lots.

4.1.11 Communications

The Construction Contractor will be responsible for maintaining contact with fire-control agencies and will be equipped with a radio or cellular telephone to enable immediate contact with local fire-control agencies when the fire is onsite or adjacent to the Project. If cellular telephone coverage is not available, the Construction Contractor will use the radio to contact their base, who will telephone emergency dispatch.

4.1.12 Motorized Vehicles

Vehicles shall be operated on roadways and parked in designated areas or areas with vegetation less than eight inches tall to ensure the hot vehicle undercarriage does not start a fire. No idling of equipment or vehicles would occur on tall vegetative areas. Personnel should check the underside of vehicles and equipment frequently, removing any vegetation that has accumulated.

4.1.13 Construction Work Sites

Crews will stay within the boundaries and confines of disturbance limits; such disturbance limits would have cleared/crushed vegetation or bare mineral soils.

Good housekeeping techniques will be used such as keeping work sites clean, using properly maintained and undamaged tools and equipment, keep passageways free of obstructions, empty trash receptacles before they overflow, etc., as a means of helping to prevent fires.

4.2 Restricted Operations

4.2.1 Fire Danger Ratings

The United States Forest Service Wildland Fire Assessment Program and National Weather Service have developed Fire Danger Ratings and Red Flag Warnings that consider weather conditions, available fuel and moisture content of available fuel to assist land managers with identifying when additional mitigation is warranted and when operations need to be modified, reduced or halted. These systems will be used by the Construction Contractor's Fire Marshal to determine when increased mitigation or modified work practices will be implemented during transmission line construction. The Construction Contractor's Fire Marshal will consult with the CIC to resolve any questions regarding the level of fire danger in the Project area.

DCRT and the Construction Contractor(s) would check the weather forecast and verify applicable fire danger and fire precautions, if any, before initiating activities that represent potential ignition sources or sparks.

TABLE J-2-1 FIRE DANGER RATINGS

Fire Danger Rating and Color Code	Description
Low (L) Dark Green	Fires do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but wood fires spread slowly by creeping or smoldering and burn in irregular fingers. There is little danger of spotting.
Moderate (M) Light Green or Blue	Fires can start from most accidental causes, but with the exception of lightning fires, in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) Yellow	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly, and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (VH) Orange	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long-distance spotting and fire whirlwinds when they burn into heavier fuels.
Extreme (E) Red	Fires start quickly, spread furiously and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

http://www.wfas.net/index.php/fire-danger-rating-fire-potential--danger-32.

4.2.2 Red Flag Warnings

When the National Weather Service has issued a Red Flag Warning for low humidity and high winds, the Fire Precaution Levels in Table J-2 will be adhered to. Red Flag Warning information for Arizona and California can be found at: http://wrh.noaa.gov/firewx/main.php.

4.3 Project Activity Levels

Table J-2-2 establishes work restrictions and precautions the contractor must observe on Red Flag days and they apply to all land jurisdictions. The Construction Contractor's Fire Marshal will track and report Red Flag Warnings as necessary.

TABLE J-2-2 PROJECT ACTIVITY REQUIREMENTS

Level	Project Activity Requirements
A	Minimum required
B	Furnish fire patrol. A fire patrol person is required for mechanical operations from cessation of operations until two hours after operations cease or sunset, whichever occurs first. Tank truck or trailer shall be on or adjacent to landing.

Level	Project Activity Requirements
C	Fire patrol person is required until sunset local time. The following operations are prohibited from 1:00 p.m. until 8:00 p.m. local time: • Operating high-speed rotary head equipment • Blasting
D	All following activities may operate: • Welding or cutting of metal only by special permit • Road maintenance • Culvert installation • Dirt moving • Helicopter yarding A fire patrol person is required to walk all areas treated that day once per hour until sunset local time. This includes metal track skidding, machines with chainsaw cutting heads, and mastication equipment.
E	All following activities may operate: • Equipment at approved sites may be serviced. • Roads: dust abatement or rock aggregate installation (does not include pit development). All other operations may continue until 1:00 p.m. local time when Construction Contractor's Fire Marshal and CIC agree to variance.
Ev	Same as E with the exception that if site-specific conditions warrant a variance permitting operations, the Construction Contractor's Fire Marshal and CIC will provide the specified emergency precautions needed.

All of the precautions listed above apply unless the Authorized Official agrees to a change in writing. Such written agreement, or substitute precautions shall prescribe measures taken by the Construction Contractor to reduce the risk of ignition, and/or spread of fire. A fire hazard analysis form is located in Attachment A.

4.4 Inspections

The Construction Contractor will be responsible for compliance with all provisions of this Plan. Regular inspections of the Project work area and personnel may include ensuring that new workers receive fire training, taking additional measures to lower the chance of fires in newly identified high-risk areas, equipment inspections, and work site procedures. In addition, federal, state, and local fire-control agencies may perform inspections in areas under their jurisdiction at their discretion.

5 Fire Emergency Response Plan

5.1 Fire Suppression Equipment

Fire suppression equipment identified in this section shall be available during the life of Project. All firefighting equipment will be periodically inspected and maintained in operating condition. Defective equipment shall be immediately replaced. (Occupational Safety and Health Act Publication 3080 [USDL 2002] provides information on proper maintenance of hand and power tools.) Fire suppression equipment will allow Project personnel the resources necessary to immediately respond to a fire, with the potential of extinguishing or controlling the fire.

5.1.1 Motorized Vehicles

During the fire season (typically May through September, but generally there is less risk during monsoon season, which is June 15 to September 30) motorized vehicles shall be stocked with a long-handled round blade shovel, an axe or Pulaski fire tool, a five-pound ABC dry chemical fire extinguisher, a five-gallon water backpack (or equivalent container) full of water or a chemical fire suppressant, and personal protective equipment including hardhat, work gloves and eye protection.

Fueling trucks must be equipped with a 35-pound fire extinguisher containing chemicals designed for use on electrical and fuel fires.

5.1.2 Construction Work Sites

The use of power saws in areas away from the contractor's vehicle requires a five-pound ABC dry chemical fire extinguisher and a long-handled round blade shovel. The saw must be equipped with an approved spark arrestor.

For activities more likely to cause a fire such as welding or cutting, the fire response equipment shall be increased to at least two extinguishers and two shovels.

Work sites where higher risk activities are performed shall be equipped with back pumps filled with water: 1) at welding sites; and 2) at both wood cutting sites and structure construction and installation areas.

When Red Flag Warning days are indicated by National Oceanic and Atmospheric Administration, a fire suppression vehicle equipped with at least a 500-gallon water tank, a 20-gallon per minute pump and 250 feet of 0.75-inch rubber hose must be stationed near the Project area.

The fire suppression vehicle in place during times of Red Flag Warning days, must contain a dedicated fire protection tool set that includes two long-handled round blade shovels, two axes or Pulaski fire tools, a chainsaw of at least 3.5 horsepower and a cutting bar at least 20 inches in length.

The construction site must have communication devices, such as radios and cellular or satellite telephones, as appropriate for the Project location to be used to contact emergency responders and project officials.

5.2 Immediate Fire Suppression Activity

In the event of a fire in the Project area that can be managed with the equipment and resources available, construction and project-related personnel should initiate fire suppression activities to either extinguish or control the spread of the fire. Fire suppression activity includes direct treatment to burning fuel such as wetting, smothering, or chemically quenching the fire, or by physically separating the burning from not burned fuel. Training provided to project personnel will address response actions that should be taken by contractors, conditions that warrant evacuating project personnel, evacuation routes and assembly areas, and notification procedures.

If a fire cannot be managed safely and/or the fire is exceptionally hot and/or or has toxic fumes, personnel will evacuate the area and call 911. When calling 911 the following information will be provided.

- Your name
- Call back telephone number
- Project name
- Location
    - Legal description (township, range, section) or GPS location (latitude and longitude)
    - Descriptive location (reference point)
- Fire information
    - Size of fire
    - Rate of spread
    - Wind conditions
- Access
- Hazards to personnel

Immediately following any fire related emergency and a 911 call, the Construction Contractor's Fire Marshal will be notified as indicated in the following section.

5.3 Notifications

After the 911 call is made, the CIC will contact the Prescott Dispatch Center, Federal Interagency Communication Center, and Perris Emergency Coordination Center, and other notifications shall be made (see Table J-2-3), providing information indicated in Section 5.2. All fires, regardless of size, must be reported to the Project personnel included in this table. Fire notification procedures will be applied to all land jurisdictions.

The Construction Contractor's Fire Marshal shall notify both the CIC and DCRT Project Manager, who will coordinate to notify the BLM authorized representative or designee and FMO, in the event of a fire in the Project area during construction. DCRT's Project Manager will be responsible for these notifications during the operations and maintenance phase of the Project. Both the Construction Contractor's Fire Marshal and DCRT or its designee shall make emergency notification numbers available to all personnel in case of a fire (see Table J-2-3). These numbers must be kept up-to-date during the life of the Project.

TABLE J-2-3 FIRE NOTIFICATION CONTACTS AND NUMBERS

Contact Person	Phone Number
911 – Emergency	911
Prescott Dispatch Center	928-777-5700
Federal Interagency Communication Center	Business and after hours: 909-383-5652
Perris Emergency Coordination Center	951-940-6949
BLM Authorized Officer or Designee	TBD
BLM FMO	TBD
CIC	TBD
DCRT Construction Project Manager	TBD
Construction Contractor's Fire Marshal: TBD	TBD

Prior to commencing work, the Construction Contractor will furnish the information in Tables J-2-4 and J-2-5 relating to key personnel, tools, and equipment available for the purpose of fighting wildland fires within and adjacent to the Project area.

TABLE J-2-4 KEY PERSONNEL IN ORDER OF CALL PREFERENCE

Title	Name	Phone Number
Construction Contractor's Fire Marshal	TBD	
Fire Patrolperson	TBD	

TABLE J-2-5 PERSONNEL AND EQUIPMENT

Fire Fighters and Positions	Equipment	Type, Make and Mode
TBD		

6 Post-Fire Rehabilitation

If the cause of a fire is determined to be the result of the Project, the Construction Contractor(s) will implement reclamation measures as required by the BLM (see Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan), and the following post-fire reclamation measures will be implemented:

- Burn areas that are Project-related must be reclaimed as specified by the BLM. Small burn areas are revegetated with native vegetation using seed mixtures identified by BLM near reclamation time to ensure seed availability. Larger areas may require specific restoration plans. Coordination with the BLM is necessary to determine requirements for each particular area, depending on the size and location of a fire, and the location of sensitive resources.

- To prevent the spread of noxious weeds and invasive species during post-fire reclamation, the measures outlined in Appendix F-7 – Vegetation Management Plan will be implemented by the Construction Contractor(s).

7 Operation and Maintenance

During Project operation and maintenance, the Final Fire Protection and Prevention Plan will be implemented, including all measures and stipulations contained therein.

8 Decommissioning

During Project decommissioning activities, the Final Fire Protection and Prevention Plan will be implemented, including all measures and stipulations contained therein.

9 Environmental Protection Measures

This section includes relevant mitigation measures, example ROW grant stipulations, and best management practices specific to protection against fire. These measures and stipulations were pulled from the project-wide environmental mitigation measures within Appendix B of the Plan of Development.

APM-BIO-05 Additional Prohibitions: Trash dumping, firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment.

APM-HAZ-02 Fire Avoidance and Suppression: Per the Fire Protection and Prevention Plan for the Project: DCRT would select a welding site that is void of native combustible material and/or would clear such material for 10 feet around the area where the work is to be performed. DCRT would follow its standard practice for clearing in wildland areas. Project personnel would be directed to drive on areas that have been cleared of vegetation, park away from dry vegetation, and carry water, shovels, and fire extinguishers in times of high fire hazard. DCRT would also prohibit trash burning. Additionally, fire-suppression materials and equipment would be kept adjacent to all areas of work and in staging areas and would be clearly marked.

BMP-HAZ-02 Fire Avoidance and Suppression: APM-HAZ-02 would not interfere with APM BIO-14, which encourages overland driving/access. Vehicle and equipment operators would drive on cleared areas and park away from vegetation where possible, would be responsible to monitor for fire ignition by vehicles and equipment; and would be equipped and trained to provide first response to an inadvertent wildland fire ignition associated with the Project.

BMP-PHS-02 A Fire Prevention Plan would be developed for the Project.

CMA-DFA-VPL-BIO-FIRE-1 Implement the following standard practice for fire prevention/protection: Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.

10 California Environmental Quality Act

In compliance with the California Environmental Quality Act (CEQA) the following mitigation measure will be adhered to in California:

MM-HAZ-CEQA-1 – As discussed in APM-HAZ-02, BMP-PHS-02, and CMA-DFA-VPL-BIO-FIRE-1, a Fire Prevention Plan shall be developed and implemented for the Project throughout construction and operation and maintenance. The Applicant shall develop a Project Fire Prevention Plan in consultation with the appropriate local fire agencies at least 30-days prior to the start of construction activities. The Plan shall cover the construction and operations/maintenance phases of the Project. The Applicant shall monitor Project-related activities to ensure implementation and effectiveness of the Plan. The final Plan will be approved by the consulted fire agencies prior to the initiation of construction activities and shall be implemented during all Project-related activities by the Applicant. Information contained in the Plan and location of fire-suppression materials and equipment shall be included as part of the Worker Environmental Awareness Program discussed in APM BIO-01. Successful implementation of this Plan shall result in a less than significant impact to the potential for construction-related fires. At minimum, the Plan shall include the following:

- Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, hot work restrictions, and timing of vegetation treatment or maintenance. Where necessary, vegetation management or clearing necessary to mitigate fire risk shall supersede other measures for vegetation protection and avoidance. Applicable permitting, compensation, and mitigation resulting from such activity shall be the responsibility of the Applicant.
- Proper use of construction, maintenance, and decommissioning equipment.
- Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days.
- Fire coordinator and fire patrol roles and responsibilities.

- Worker training for fire prevention, initial attack firefighting, and fire reporting.
- Emergency fire suppression equipment/tools inventory and maintenance.
- Emergency communication, response, and reporting procedures.
- Coordination with local fire agencies to facilitate emergency access through the Project site.
- Emergency contact information.
- Compliance with applicable wildland fire management plans and policies established by state and local agencies.
- Other information as required by responsible and consulted agencies.

Responsible Party: The Applicant shall develop the Fire Protection and Prevention Plan and ensure that it is implemented throughout construction activities

Timing: The Proponent shall develop the Fire Prevention Plan at least 30-days prior to the start of construction activities. The Plan shall be implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall ensure that the information in the Fire Prevention Plan is included in the Worker Environmental Awareness Program. Documentation of any Red Flag Warnings or High to Extreme Fire Danger days shall be kept on file and submitted to the applicable local fire agencies as well as the BLM and California Public Utilities Commission (CPUC).

Standards for Success: Construction impacts related to fires is reduced to a less than significant level and no fires are started as a result of construction activities.

11 References

United States Department of Labor (USDL). 2002 (Revised). Occupational Safety and Health Act Publication 3080. Available at: https://www.osha.gov/Publications/osha3080.html. Accessed March 2019.

ATTACHMENT A EXAMPLE FIRE HAZARD ANALYSIS

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FIRE HAZARD ANALYSIS

Job #_____ Job Name_____ Job Location_____

General Foreman_____

Designated Fire Watch_____

Emergency Contact Number_____

Emergency 911_____

Nearest Hospital_____

_____

Medical Care Facility_____

_____

Hotline Number_____ Level_____

Task Description_____

_____

_____

Job Site (Check All That Apply)

	Contact hotline for project activity level		Open flame operation required (welding)
	Flammable gas identified		Assess area for fire hazard potential
	Welding area prepared for use		Chemical source identified
	Firefighting equipment inspected		Spark source identified prior to use
	Wildlife (bugs, insects, bees, etc.)		Discuss an emergency escape plan
	Wildlife (dogs, raccoons, rodents, etc.)		Area prepared for use of spark equipment
	Communication equipment working		Firefighting equipment in place
	Identify need for additional water support		Pulaski
	Eliminate housekeeping hazards		Shovels
	Smoking in designated area only		Backpack water pump inspected
	Fire extinguisher(s) inspected		Native vegetation identified and cleared
	Uneven surfaces		Ice, mud, snow
	Fire patrol notified		Identify second in command
	Drinking water		Personal protective equipment

Fire Job Hazard Analysis

What is the fire hazard associated with this job?

_____
_____
____ _____

What are the necessary procedures to reduce the possibility of a spark or fire?

_____
_____
___ _____

What special precautions shall be taken to ensure a fire does not occur?

_____
_____
_____ _____

What fire defenses are in place to prevent the spread of a fire and to protect the lives of employees on the work site?

_____
_____
_____ _____

Changes (Any of the changes indicated below necessitates completing a New “Job Briefing”

Change of conditions O Yes O NA Job scope O Yes O NA Change in person in charge O Yes O NA

Attendees and visitors to the job site are required to review the “Job Briefing” with the person in charge and sign below.

Date: _____

Print Name	Signature

2B.15 TRAFFIC AND TRANSPORTATION MANAGEMENT PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Traffic and Transportation Management Plan

PROJECT NUMBER:
154320

PROJECT CONTACT:
Mike Strand
EMAIL:
mike.strand@powereng.com
PHONE:
562-298-6282

POWER ENGINEERS

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Traffic and Transportation Management Plan

PREPARED FOR: BUREAU OF LAND MANAGEMENT
PREPARED BY: CHARLES HUTCHINSON
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CHARLES.HUTCHINSON@POWERENG.COM

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TABLE OF CONTENTS

ATTACHMENT:

ACRONYMS AND ABBREVIATIONS

ADOT	Arizona Department of Transportation
APM	Applicant Proposed Measure
BLM	Bureau of Land Management
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
DCRT	Delaney Colorado River Transmission, LLC
FAA	Federal Aviation Administration
I-10	Interstate 10
MDAQMD	Mojave Desert Air Quality Management District
MM	Mitigation Measure
OHV	off-highway vehicle
Plan	Traffic and Transportation Management Plan
Project	Ten West Link Transmission Project
ROW	right-of-way
U.S.	United States

1 Introduction

Delaney Colorado River Transmission, LLC (DCRT) prepared this Traffic and Transportation Management Plan (Plan) for the Ten West Link Transmission Project (Project) to address traffic and transportation concerns associated with the Project's construction, operation, maintenance, and decommissioning activities. This Plan addresses regulatory compliance, traffic management practices, and types of right-of-way (ROW) access. Additionally, this Plan describes Applicant Proposed Measures (APMs), Bureau of Land Management (BLM)-required Best Management Practices (BMPs), and mitigation measures (MMs) that DCRT will implement to reduce the Project's impacts on traffic volumes and the transportation network in the Project's vicinity.

2 Regulatory Compliance

Many federal, state, and local government agencies oversee the use and improvement of transportation facilities that the Project's activities will use. Such agencies include the BLM; Federal Highway Administration; Federal Aviation Administration (FAA) for helicopter use; Arizona Department of Transportation (ADOT); Arizona Department of Public Safety; California Department of Transportation (Caltrans); California Office of Traffic Safety; and law enforcement agencies and highway departments in La Paz and Maricopa counties in Arizona and in Riverside County, California. Appendix H-1 – Fugitive Dust Control Plan and Construction Emissions Mitigation Plan addresses the California Air Resources Board's fugitive dust and vehicle emissions' regulations and describes methods for reducing the Project's transportation-related emissions.

Prior to commencing construction activities, DCRT will file encroachment permit applications with appropriate highway departments for areas where the Project-related traffic will enter or where the proposed transmission line will cross public roads (e.g., Interstate 10 [I-10], United States [U.S.] Highway 95, California State Route 78-S, Neighbours Boulevard), and numerous named county roads.

Project personnel who are responsible for transportation activities will be familiar with this Plan and relevant sections of the Project's Plan of Development.

Additionally, as described in Appendix K-3 – Helicopter Flight Plan/Flight and Safety Plan, DCRT will coordinate its construction activities with local air traffic control operators and implement a Congested Area Plan, per FAA regulations, if required.

3 Traffic Management Practices

3.1 Ground Travel

During the Project's construction activities, ground travel will be the primary means of transporting construction and maintenance crews and equipment to and from staging areas and structure work areas. All drivers will obey jurisdictional traffic speed regulations and posted speed limits. Speeds along upgraded existing access roads, new centerline access roads, and access spur roads adjacent to and along the Project's ROW will be limited to 15 miles per hour or to posted speed limits to prevent excessive amounts of construction-

related dust (see Appendix H-1 – Fugitive Dust Control Plan and Construction Emissions Mitigation Plan). Before construction, authorized access roads will be clearly marked in the field with signs or flagging. The Construction Contractor(s) will review the location of proposed access roads and will be responsible for ensuring that construction travel is limited to designated areas that clearly identify the limits of disturbance. During construction, gates or other deterrents may be required to limit access along the ROW for public safety and environmental resource protection.

Project field personnel will attend an environmental training program. This program will instruct field personnel to use only approved access roads, drive in the delineated road limits, and obey jurisdictional and posted speed limits to minimize potential impacts to biological, paleontological, and cultural resources. The Construction Contractor(s), Compliance Inspection Contractor, and environmental monitors will maintain a communications network that consists of one or both of the following devices: two-way radios and/or cellular phones. This will allow for safe coordination of equipment traffic along existing access roads to minimize impacting public safety and traffic volumes.

In general, the number of construction vehicles needed for the Project is not expected to substantially increase existing traffic volumes in the Project's vicinity. Similarly, road and lane closures are anticipated to be minimal, and will most likely occur during conductor-stringing activities or during blasting. If road and lane closures are needed (e.g., to pull the transmission line across major roadways), the appropriate regulatory agencies, affected parties, and emergency service providers will be notified in advance of the anticipated closure. Prior to transporting oversize and/or overweight loads on California highways or freeways, DCRT will coordinate with Caltrans to obtain the applicable permits, as needed.

Construction traffic is not expected to disrupt access to residences along the ROW. However, adjacent landowners will be notified of the construction schedule, where appropriate. Where feasible, construction traffic will be routed away from residences and schools. Signs will be posted in the Project area to notify landowners and others, including off-highway vehicle (OHV) users of the construction activity. Construction crews will park only in designated areas and will be shuttled to the appropriate work sites, if necessary. If existing roads and trails on public lands are blocked due to construction activities, signs will be posted to notify the public. Attachment A includes a sample traffic control plan.

To alleviate traffic congestion and decrease the number of vehicles traveling to the Project work areas, the Construction Contractor(s) will encourage personnel to carpool to work each day. Additionally, crews will commute from show-up yards to the work sites in company provided crew vehicles after meeting at the show-up yard locations.

3.1.1 Ground Travel in Arizona

The Construction Contractor(s) will comply with the 2009 *Arizona Supplement to the Manual on Uniform Traffic Control Devices* for public roads that the Project would impact. Along the BLM Preferred Alternative's route in Arizona where the proposed transmission line would cross I-10 twice, the Construction Contractor(s) will comply with ADOT's *Guideline for Accommodating Utilities on Highway Rights-of-Way*. Both locations are outside of interchange areas. In these locations, the Construction Contractor(s) will install the proposed transmission line's support structures outside of the control of access line. Project work performed in highway ROW will conform to recognized standards of utility construction, the *Arizona Department of Transportation Standard Specifications for Road and Bridge Construction*, and the conditions that the encroachment permit and/or utility permit specify.

3.1.2 Ground Travel in California and California Environmental Quality Act Compliance

In Riverside County, California, the Construction Contractor(s) will comply with the 2014 *California Manual on Uniform Traffic Control Devices* for public roads that the Project would impact. More specifically, the Construction Contractor(s) will comply with the manual's *Part 6 – Temporary Traffic Control*, incorporating the elements below:

- Temporary traffic control plans and control zones.
- Pedestrian and worker safety.
- Flagger control.
- Temporary traffic control zone devices.
- Temporary traffic control zone activities.
- Controlling traffic through traffic incident management areas.

The California Public Utilities Commission requires through their California Environmental Quality Act (CEQA) review, that DCRT also implement the following mitigation measures to help control Project-related construction vehicle traffic (and MM Trans-CEQA-2 per development of this Plan):

- Identify truck routes designated by Riverside County and local jurisdictions' haul routes that minimize truck traffic on local roadways.
- Provide sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public ROWs.
- Schedule truck trips outside the peak morning and evening commute hours.
- Store all equipment and materials in designated contractor staging areas on or adjacent to the work site, such that traffic obstruction is minimized.
- Implement roadside safety protocols including advance "Road Wok Ahead" warning and speed control signs, which shall be posted to reduce and provide safe traffic flow through the work zone.
- Provide advance notification to administrators of police and fire stations, including fire protection agencies; ambulance service providers; and recreational facility managers of the timing, location, and duration of construction activities and the locations of detours and lane closures. Maintain access for emergency vehicles within and/or adjacent to roadways affected by construction activities at all times.
- Repair and restore adversely affected roadway pavements to their pre-construction condition per the following direction:
    - Damage will be documented by the Project Applicant and the applicable jurisdiction, that is, Caltrans, Riverside County, or individual will be notified within 24 hours. The Applicant will work with the jurisdiction affected and will repair the damage within 30 days.

- Coordinate individual traffic plans for the Project and nearby projects.
- Coordinate with Riverside County to develop circulation and detour plans that include safety features, for example, signage and flaggers. The circulation and detour plans will address:
    - Full and partial roadway closures.
    - Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices.
    - Bicycle detour plans, where applicable.
    - Parking along arterial and local roadways.
    - Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at a work site.
- Update this Plan to account for delays or changes in the schedules of individual projects.
- Maintain inspection logs that document construction transportation and access problems and solutions.

In compliance with CEQA, the following mitigation measures will be adhered to:

MM-TRANS-CEQA-2 – The California Public Utilities Commission (CPUC)requires the following with regards to the development and implementation of this Plan (e.g., MM Trans-CEQA-2):

Responsible Party: The Applicant shall be responsible for ensuring that the Traffic, Transportation, and Access Management Plan is prepared and implemented throughout construction activities.

Timing: The Traffic, Transportation, and Access Management Plan shall be prepared at least 30 days prior to the start of construction and shall be implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: The Applicant shall monitor construction transportation and access to ensure that the Traffic, Transportation, and Access Management Plan is implemented successfully as documented in inspection logs.

Standards for Success: Traffic flow remains at acceptable levels, emergency access remains possible at all times, the public is reasonably notified of any road closures, delays, or lane restrictions, and the Project area remains in compliance with all applicable transportation goals, policies, and requirements.

MM-AQ-CEQA-1 – Consistent with APM AQ-01, and Mojave Desert Air Quality Management District (MDAQMD) Rule 403.2, a Fugitive Dust Control Plan shall be prepared for the Project prior to the start of construction and shall be implemented throughout all construction phases of the Project. This Fugitive Dust Control Plan shall be prepared by the

Applicant at least 30 days prior to construction which shall be approved by the CPUC and MDAQMD. The Applicant shall ensure that the Fugitive Dust Control Plan is implemented throughout construction activities and shall keep records of compliance on site and submit monthly reports to CPUC and MDAQMD. This Fugitive Dust Control Plan shall comply with the MDAQMD Guidelines and include all of the control measures listed in APM AQ-01. In addition to these control measures, the Fugitive Dust Control Plan shall also include signage related to fugitive dust that will include the following specifications:

- A minimum 48-inch high by 96-inch wide sign containing the following shall be located within 50 feet of each Project site entrance, meeting the specified minimum text height, black text on white background, on one-inch A/C laminated plywood board, with the lower edge between six and seven feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day:
    - [Site Name] {four-inch text}
    - [Project Name/Project Number] {four-inch text}
    - IF YOU SEE DUST COMING FROM {four-inch text}
    - THIS PROJECT CALL: {four-inch text}
    - [Contact Name], PHONE NUMBER XXX-XXXX {six-inch text}
    - If you do not receive a response, Please Call {three-inch text}
    - The MDAQMD at 1-800-635-4617 {three-inch text}

Additionally, the following control measures shall be included in the Fugitive Dust Control Plan:

- Traffic speeds on unpaved roads shall not exceed 15 miles per hour.
- Drop heights from excavators and loaders shall be minimized to distances no more than five feet.
- Appoint a construction relations officer to act as a community liaison concerning on-site construction activity, including resolution of issues related to PM_{10} and $PM_{2.5}$ generation from combustion emissions and fugitive dust generation.
- An on-site supervisor with a current fugitive dust control class certification shall be present who is available within 30 minutes to respond to any fugitive dust control issue at the site during normal business hours.
- The operation shall keep on-site records of specific dust control actions taken.
- All perimeter fencing shall be wind fencing or the equivalent of four feet of height or the top of all perimeter fencing (this wind fencing requirement may be superseded by local ordinance, rule, or Project-specific biological mitigation prohibiting wind fencing).

- A wheel washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the unpaved construction site.

Responsible Party: The Applicant shall be responsible for ensuring the Fugitive Dust Control Plan is prepared and implemented throughout construction activities.

Timing: The Fugitive Dust Control Plan shall be prepared at least 30-days prior to the start of construction and implemented throughout all construction activities.

Mitigation Monitoring and Reporting Program: Monthly reports shall be prepared by the Applicant and submitted to the CPUC and MDAQMD. These monthly reports shall include a summary of any calls received regarding fugitive dust and all compliance actions taken.

Standards for Success: Fugitive dust will be minimized throughout all construction activities and compliance with MDAQMD Rule 403.2 shall be achieved.

3.2 Helicopter Use

In addition to minimizing the impacts associated with ground travel, the Construction Contractor(s) will coordinate construction activities with jurisdictional utilities and the FAA, as needed for helicopter activity. During wire-stringing activities over roads, the Construction Contractor(s) will use traffic controls, which will influence local traffic patterns. A helicopter may be used to move personnel and equipment, and/or assist with structure assembly and erection and wire-stringing, if the Construction Contractor(s) determine that standard, ground-based construction methods are not feasible. Refer to Appendix K-3 – Helicopter Flight Plan/Flight and Safety Plan. The Helicopter Flight Plan provides detailed information, including safety measures that will be implemented during helicopter use along the ROW for the Project's construction, operation, and maintenance activities. During these activities, DCRT will use dust palliatives to reduce the amount of fugitive dust that helicopter takeoffs and landings can generate. Appendix H-1 provides more information on dust palliatives.

The task-specific flight plan will be prepared for helicopter-related uses and will be reported to DCRT's Project Manager, Construction Contractor(s) Manager, Compliance Inspection Contractor, and Environmental Compliance Manager at least 48 hours prior to flight. Ground crew needed on the ROW near a task location will be notified of helicopter use and briefed on safety measures outlined in the Helicopter Flight Plan/Flight and Safety Plan.

4 Types of Right-of-Way Access

As described in detail in Section 3 of the Project's Plan of Development, five different types of access will be used for the Project:

- Access Type A – existing maintained public and private roads, which are paved, gravel, or dirt. These roads will be left in their original condition with no additional disturbance necessary to accommodate Project construction vehicles and equipment.

- Access Type B – existing roads that may require some level of improvement to accommodate Project construction vehicles and equipment.

- Access Type C – centerline access roads that DCRT will create, where necessary, to provide access along the length of the Project's ROW. DCRT will blade these roads along the transmission line's outermost conductor phase, but inside the Project's 200-foot-wide ROW.

- Access Type D – access spur roads that DCRT will blade to connect Access Types A, B, or C roads to structure work areas along the Project's ROW.

- Access Type E – helicopter access. In areas of biological, topographical, archaeological, and visual concerns, the use of helicopter-assisted construction may be implemented for construction activities. Light-duty pickup trucks, tracked equipment, and OHVs may be used in combination with a helicopter. If such vehicles are used for construction and road construction is necessary, such road construction would fall into the Type A, B, C or D access.

For the purpose of this Plan, only Access Type A roads are discussed below. Appendix K-1– Access Road Plan discusses Access Types B, C, and D roads. Appendix K-3 describes Access Type E roads and helicopter operations.

The analysis area for traffic and transportation resources analyzed in the BLM's Environmental Impact Statement covers a 10-mile-wide corridor; five miles on either side of the proposed transmission line's route. In this analysis area, Access Type A Roads include the following:

- I-10, U.S. Highways 60 and 95, Arizona State Route 95, California State Route 78, and Business Route 10.

- Roads and streets in the Town of Quartzsite, Arizona and in the City of Blythe, California.

- Dedicated county roads.

- Local roads and dirt trails on BLM-administered land and on private property.

- Trails providing access to utility corridors and recreation areas.

Along these Access Type A roads, the Project's construction activities would be expected to add approximately 160 personal vehicles to the existing traffic volumes. However, as the Project's construction activities would occur in phases along different segments of the proposed transmission line, not all of these additional personal vehicles would travel in the same direction at the same time. Additionally, these 160 personal vehicles represent the maximum number of vehicles expected to travel to and from construction work areas. Furthermore, DCRT would arrange shuttles or carpooling to transport construction workers, thereby reducing impacts on existing traffic volumes and the transportation network in the analysis area.

5 Decommissioning

At the end of the Project's useful life, if the transmission line and associated facilities were no longer required, or if the BLM or other federal land management agencies do not re-issue authorizations at the time the original authorizations expire, the transmission line and

associated facilities will be decommissioned. Subsequently, conductors, insulators, and hardware will be dismantled and removed from the ROW. Tower structures will be removed and foundations broken off below ground surface. If the transmission line and associated ROW are abandoned at some future date, the ROW will be available for the same uses that existed prior to construction of the Project. Following abandonment and removal of the transmission line from the ROW, any areas disturbed to dismantle the line will be restored and rehabilitated as near as possible to their original condition. During the decommissioning process, DCRT will implement the same or similar traffic management practices as described above for the Project's construction activities.

6 APMs, BMPs, and Mitigation Measures

This section includes relevant APMs, BMPs, and MMs specific to this Plan.

6.1 General BMPs

- All construction vehicle movement outside of the Project's ROW will be restricted to predesignated access roads, Construction Contractor-acquired access roads, or public roads. To the extent practicable, construction vehicle movement in the ROW will be limited to predesignated disturbance areas and access routes.
- The width of construction and new temporary access roads will be kept to the absolute minimum needed, avoiding sensitive areas where possible and limiting disturbance to vegetation.
- Where appropriate (e.g., adjacent to sensitive areas or resources), signs will be placed along access roads to discourage OHV users and Project personnel from driving into unauthorized adjacent areas.
- Where roads that service transmission facilities cross fences, a gate will be installed to standard BLM specifications. The gates will be built prior to construction activities and will be kept closed, except during active construction at the fence site.
- Prior to entering a Project work area, Project vehicles and heavy equipment used to complete, maintain, inspect, or monitor ground-disturbing activities will be cleaned of soil and debris capable of transporting weed propagules. Cleaning vehicles will reduce transporting vehicle-borne noxious and invasive weed seeds, roots, or rhizomes.
- Prior to vehicles and equipment entering a Project area, a weed scientist or qualified biologist will identify, flag, and record areas of noxious weed presence. If necessary during construction, mitigation measures such as a weed wash station will be used to control the transport of noxious weeds.

6.2 BLM-Required BMPs

- BMP-Recreation-01: Alternative Access and Parking Signs

  - Signs directing vehicles to alternative park access and parking would be posted in the event construction temporarily obstructs parking areas near trailheads.

- BMP-Recreation-02: Recreation User Signs
  - Signs advising recreation users of construction activities and directing them to alternative trails or bikeways would be posted on both sides of all trail intersections or as determined through DCRT coordination, with the respective jurisdictional agencies. A schedule of construction activities would be posted near entrances to recreational areas as well as on the Project website. Signs would be installed near access roads notifying the public of construction activities in the area and the presence of permanent transmission facilities.

- BMP-Recreation-04: Alternate Route Signage
  - Alternate route(s) of equal or greater standard and access to specially designated areas would be provided, if roads, primitive roads, or trails used for recreation are temporarily closed or otherwise significantly affected. The alternate route(s) would be clearly identified on signage.

- BMP-Traffic and Transportation-02: Structure Lighting in Military Training Routes
  - Project structures that are located within Military Training Routes would be fitted with night-vision-compatible red lighting emitting an infrared energy between 675 and 900 nanometers.

- BMP-Traffic and Transportation-09: Repairs to Local Roads
  - Local roads would be restored if road damage occurred due to Project construction.

6.3 BLM-Required MMs

- MM-Recreation-01: To mitigate effects related to the temporary construction closure of the proposed Arizona Peace Trail and other OHV routes through Johnson Canyon, MM REC-01 would require that construction of the Project occur outside of peak OHV season. Construction in Johnson Canyon would occur between the months of July and September.

- MM-Recreation-03: New access roads will be gated where appropriate, and signage including road status will be posted at all new access road junctions.

- MM-Traffic and Transportation-01: Structures and lines within Segment ca-05 would constitute a moderate to major, long-term effect associated with a collision hazard at the Cyr Aviation Airport. The marking of structures and lines within 0.5 mile of such facilities with spherical markers and lighting would reduce this effect to minor to moderate.

- MM-Traffic and Transportation-02: Structures and lines within Segments in-01 and i-04 where they pass through the Plomosa Mountains and Segments i-06, cb-01, cb-

02, cb-03, and cb-04 in the Dome Rock Mountains would constitute a moderate to major, long-term effect on the safety of Arizona Game and Fish Department aircraft conducting aerial wildlife surveys. The marking of structures and lines in these locations would reduce this effect to minor.

6.4 Applicant Proposed Measures

- APM-Biology-18: Copper Bottom Pass (Arizona Only)
    - Control of construction activities and use of construction-related vehicles in the Copper Bottom Pass area would be maintained to ensure that only planned construction traffic is allowed in the area and that minimal trips are planned to minimize disturbance to bighorn sheep. This mitigation measure does not apply to non-construction-related public use of the Copper Bottom Pass area.
- APM-Traffic and Transportation-01
    - Emergency service providers would be notified of the timing, location, and duration of construction activities. Traffic control devices and signs would be used as needed. These measures would be implemented in conjunction with a Traffic and Transportation Management Plan for the Project. This plan would also include measures/protocols for aviation, including helicopter use, coordination with local air traffic control, and a Congested Area Plan, pursuant to FAA regulations.

ATTACHMENT A – SAMPLE TRAFFIC CONTROL PLAN

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T/C PLAN: VARIOUS LOCATIONS BETWEEN
ACTUAL LOCATION: BETWEEN MILE MARKER ____ AND MILE MARKER ____ IN _____
ONE LANE FLAGGER SET

THIS PLAN IS A STARTING POINT
ACTUAL FIELD CONDITIONS
MAY REQUIRE, ADDING OR SUBTRACTING
SIGNS, DEVICES AND PLACEMENT

NOTES:
1. LAYOUT CAN BE USED TO CLOSE EITHER SIDE OF THE ROAD
2. ALL SIDE STREETS AFFECTED TO BE POSTED WITH ROAD WORK AHEAD SIGN
3. REFER TO PAGE TC 4A FOR SIGN, DEVICE, TAPER AND BUFFER SPACING

T/C PLAN: VARIOUS LOCATIONS BETWEEN
ACTUAL LOCATION: BETWEEN MILE MARKER ____ AND MILE MARKER ____ IN ____
SHOULDER SET
ROAD WORK AHEAD
SHOULDER WORK
ROAD WORK AHEAD
ROAD WORK AHEAD
*SEE NOTE 2
ROAD WORK AHEAD
THIS PLAN IS A STARTING POINT
ACTUAL FIELD CONDITIONS
MAY REQUIRE, ADDING OR SUBTRACTING
SIGNS, DEVICES AND PLACEMENT
NOTES:
1. LAYOUT CAN BE USED TO CLOSE EITHER SIDE OF THE ROAD
2. ALL SIDE STREETS AFFECTED TO BE POSTED WITH ROAD WORK AHEAD SIGN
3. REFER TO PAGE TC 4A FOR SIGN, DEVICE, TAPER, BUFFER AND TANGENT SPACING

T/C PLAN: VARIOUS LOCATIONS BETWEEN _____
ACTUAL LOCATION: BETWEEN MILE MARKER ____ AND MILE MARKER ____ IN _____
TRUCKS ENTERING/EXITING HIGHWAY SET
ROAD WORK AHEAD
TRUCKS EXITING HIGHWAY
TRUCKS ENTERING HIGHWAY
ROAD WORK AHEAD
*SEE NOTE 2
ROAD WORK AHEAD
TRUCKS ENTERING HIGHWAY
TRUCKS EXITING HIGHWAY
ROAD WORK AHEAD
THIS PLAN IS A STARTING POINT
ACTUAL FIELD CONDITIONS
MAY REQUIRE, ADDING OR SUBTRACTING
SIGNS, DEVICES AND PLACEMENT
NOTES:
1. LAYOUT CAN BE USED TO CLOSE EITHER SIDE OF THE ROAD
2. ALL SIDE STREETS AFFECTED TO BE POSTED WITH ROAD WORK AHEAD SIGN
3. REFER TO PAGE TC 4A FOR SIGN SPACING

TAPER, BUFFER ZONE & SIGN SPACING CHART

ROAD TYPE	POSTED SPEED MPH (S)	MINIMUM TAPER LENGTH(L)	LENGTH OF BUFFER(BZ)	MINIMUM SIGN SPACING (SS)			ONE LANE TWO-WAY FLAGGING
		TAPER CLOSURE	DOWNSTREAM	A	B	C	D	TAPER LENGTH
		feet	feet	feet	feet	feet	feet	feet
CONVENTIONAL	30 AND LOWER	180	700	100	100	100	100	50
	35	245	250	350	350	350	115	
	40	320	305					
	45	540	360					100
	50	600	425	500	500	500	250	
	55	660	495					
	60	720	570					
	65	780	645					
FREEWAY/ EXPRESSWAY	55	780	645	1000	1640	2640	500	
	60	840	730					
	65	900	820					

1- TAPER LENGTH FORMULAS

SPEED	FORMULA
FOR SPEEDS OF 40 MPH AND LESS	$L = \frac{WS^2}{60}$
FOR SPEEDS OF 45 MPH AND GREATER	$L = WS$

WHERE:
L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = SPEED IN MPH

USE L = FOR SHORT TAPER
½ L = FOR LANE SHIFT TAPER

2- CHANNELIZING DEVICES

ALL WARNING AND SHIFTING TAPERS USE A MINIMUM OF
1 DEVICE PER FOOT OF LANE CLOSURE, PLUS 1
ADDITIONAL DEVICE TO START.
ON SHOULDER, ONE LANE TWO WAY, AND DOWNSTREAM TAPERS
USE A MINIMUM OF 1 DEVICE PER 2 FEET OF WIDTH FOR
PORTION THEREOF, PLUS 1 ADDITIONAL DEVICE TO START.
ON TANGENT: S x 2 = SPACING UP TO 120 FEET MAXIMUM.
LENGTH OF ZONE CLOSURE TAPER IS THE DISTANCE FROM
END OF LANE CLOSURE TAPER TO WORK SPACE, ON ANY
OBSTRUCTION PRIOR TO WORK SPACE.

TRAFFIC CONTROL DEVICE LEGEND

- SIGN (FIXED OR PORTABLE)
- CHANNELIZING DEVICE (OFFSETTING TC 1A)
- PLASTIC DRUMS/DELINEATIONAL INDICATOR BARRICADE
- FLAGGING STATION
- ADVANCE WARNING ARROW PANEL
- BARRIER
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE
- DIRECTION OF WORK VEHICLE

STANDARD WORK ZONE SIGNING

SEE STD DWG TC 1

EXAMPLE ONLY – NOT TO SCALE
SIGNING TO BE SITE SPECIFIC

SEE STD DWG TC 1 NOTES 3,4

SEE STD DWG TC 1 NOTE 6

SEE NOTES 2,6,7

NOTES:

1. USE THE POSTED SPEED LIMIT FROM IN WORK ZONE TO COMPUTE THE SIGN SPACING, TAPER LENGTH, BUFFER ZONE, AND WORK CLEAR ZONE DISTANCES. USE THE POSTED SPEED LIMIT DURING WORK TO DETERMINE THE TANGENT SPACING FOR CHANNELIZING DEVICES.
2. SIGN MAY BE USED ANYTIME IN WORK ZONE IN PLACE OF EXISTING SPEED LIMIT SIGNS AND CHANGE IN SPEED LIMIT).
3. PLACE ADVANCE WARNING ARROW PANEL ON SHOULDER WHEN AVAILABLE, WHEN NO SHOULDER IS AVAILABLE, PLACE ARROW PANEL IN FIRST 1/3 OF TAPER IN THE CLOSED LANE.
4. USE SUPPLEMENTAL LEFT SIDE SIGNING FOR HIGH-SPEED DIVIDED HIGHWAYS.
5. USE SUPPLEMENTAL LEFT SIDE SIGNING FOR HIGH-SPEED DIVIDED HIGHWAYS.
6. SEE STD DWG TC 40 FOR SIGN SPACING AND LAYOUT.
7. USE "ENDS DOUBLE" SIGNING AT ALL MAJOR INTERSECTIONS/INTERCHANGES WITHIN THE PROJECT WHEN "FLAG DOWNER" OPTION IS USED.

2B.16 STORMWATER POLLUTION AND PREVENTION PLAN

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June 2019

BUREAU OF LAND MANAGEMENT

Ten West Link Transmission Project

Stormwater Pollution Prevention Plan

PROJECT NUMBER:
154320

PROJECT CONTACT:
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POWER ENGINEERS

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Stormwater Pollution Prevention Plan

PREPARED FOR: *BUREAU OF LAND MANAGEMENT*
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TABLE OF CONTENTS

TABLES:

ACRONYMS AND ABBREVIATIONS

ADEQ	Arizona Department of Environmental Quality
ADWQ	Arizona Department of Water Quality
APM	Applicant Proposed Measure
BLM	Bureau of Land Management
BMP	Best Management Practice
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CMA	Conservation Management Action
CPUC	California Public Utilities Commission
CWA	Clean Water Act
DCRT	Delaney Colorado River Transmission, LLC
EIS	Environmental Impact Statement
LUP	Linear Underground/Overhead Project
LUPA	Land Use Plan Amendment
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NWP	Nationwide Permit Number 12
OAW	Outstanding Arizona Waters
PCN	Preconstruction notification
Plan	Stormwater Pollution Prevention Plan
POD	Plan of Development
Project	Ten West Link Transmission Project
ROD	Record of Decision
ROW	right-of-way
RUSLE2	Revised Universal Soil Loss Equation
SCS	Series Compensation Station
SWPPP	Stormwater Pollution Prevention Plan
Ten West Link	Ten West Link Transmission Project
TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

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1 Introduction

This framework Stormwater Pollution Prevention Plan (SWPPP or Plan) addresses measures to be undertaken by Delaney Colorado River Transmission, LLC (DCRT) and/or its Construction Contractor(s) to prevent stormwater pollution and comply with Section 402 of the Clean Water Act (CWA) administered by the United States Environmental Protection Agency (USEPA) for the Ten West Link Transmission Project (Project or Ten West Link). This Plan also includes mitigation plans for erosion and sediment control, and a plan addressing for avoiding and minimizing impacts to soil and hydrological resources.

1.1 Plan Purpose

The purpose of a SWPPP is to identify potential stormwater pollutants and stormwater pollution prevention measures to reduce the quantity of impacted runoff and to control runoff in a manner that minimizes environmental impacts during construction of the Project. The proper implementation of mitigation measures associated with a SWPPP is imperative during all construction activities. These activities will be conducted in an environmentally sensitive and responsible manner, so no discharge of sediment or contaminants may be conveyed as either direct or indirect discharge to Waters of the United States or state waters.

Final development, implementation and maintenance of the SWPPP will be the responsibility of the Construction Contractor. The SWPPP will fulfill the following:

- Define the characteristics of the site and the types of construction that will occur at each site.
- Describe the practices which will be implemented to control erosion and the release of pollutants in stormwater.
- Outline an implementation schedule to ensure the practices described in the SWPPP are in fact implemented and to evaluate the Plan's effectiveness in reducing erosion, sedimentation and pollutant levels in stormwater discharge from the site.
- Describe the final stabilization design to minimize erosion and prevent stormwater impacts after construction is complete.

2 Regulatory Compliance

Construction, operation, and maintenance of the Project would include ground disturbing activities that could impact soil and water resources. The following regulations and associated permits and authorizations may be required for the Project.

2.1 Federal Regulations

2.1.1 Soil Resources

Soil resources are managed through a broad set of regulations, guidelines, and formal planning processes. These controls and directions are administered through federal, state, or local units of government. At the federal level, the primary land management agency for the Project is the Bureau of Land Management (BLM). Through state and local agency offices, the Natural Resources Conservation Service administers soil conservation programs on private lands. In addition, the Natural Resources Conservation Service inventories Prime and Unique Farmlands, as identified in 7 Code of Federal Regulations (CFR) Part 657. These farmlands are of statewide or local importance to crop production. The Farmland Protection Policy Act states that federal programs that contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses will be minimized and shall be administered in a manner that, as practicable, are compatible with state and local government and private programs and policies to protect farmland.

On lands administered by the BLM, the agency addresses soil resources primarily through BLM Handbook H-4810-1, “Rangeland Health Standards.” The Rangeland Health Standards are based on 43 CFR Part 4180.1, “Fundamentals of Rangeland Health” (BLM 2001). This regulation calls on the BLM to ensure that “watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.” Individual BLM districts and field offices administer these regulations and guidelines, including soil conservation considerations, through Resource Management Plans and project-level assessments.

2.1.2 Water Resources

The CWA (33 United States Code [U.S.C.] §1251 et seq., formerly the Federal Water Pollution Control Act of 1972) (USEPA 1972) was enacted with the intent of restoring and maintaining the chemical, physical and biological integrity of the Waters of the United States. Specific sections of the CWA that may apply to the Project are described below, followed by a brief description of the associated permits.

2.1.3 Clean Water Act – Section 303(d) List of Impaired Waters

Section 303(d) of the federal CWA requires states to assess the condition of state waters to determine where water quality is impaired (does not fully support uses identified in the stream classification or does not meet all water quality standards) or threatened (is likely to become impaired in the near future). The result of this review is the compilation of a 303(d) list, which states must submit to the USEPA biannually.

The Colorado River is the only water body in the Project area on the 303(d) list of impaired waters. The Colorado River is listed in California for toxicity, but this section of the Colorado River is not on the 303(d) list of impaired waters for Arizona.

2.1.4 Clean Water Act – Section 130.7 Total Maximum Daily Load

Section 130.7 of the CWA required states to establish Total Maximum Daily Load (TMDL) programs, which are approved by the USEPA for streams and lakes that do not meet adopted water quality standards. A TMDL includes a quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect water bodies. A TMDL budget takes into account loads from point, nonpoint, and natural background sources. National Pollutant Discharge Elimination System (NPDES) permits address point-source pollution to surface waters. Non-point source pollution is addressed by the application of Best Management Practices (BMPs) and environmental mitigation measures.

In compliance with the federal CWA, the Arizona Department of Environmental Quality (ADEQ) and California Environmental Protection Agency have identified Section 303(d) water quality limited streams and lakes for development of TMDL criteria. TMDLs have been established for surface waters in Arizona and California. From the time a water body is listed as impaired, a TMDL for that water body would be developed within one to five years.

The Colorado River is the only water body in the Project area on the 303(d) list and it is listed for toxicity.

2.1.5 Clean Water Act – Section 401 Water Quality Certification

Pursuant to Section 401 of the federal CWA, any permit or license issued by a federal agency for an activity that may result in a discharge into Waters of the United States requires certification from the state in which the discharge originates. This requirement allows each state to have input into federally approved projects that may affect its waters (rivers, streams, lakes, and wetlands) and to ensure the projects will comply with state water quality standards and any other water quality requirements of state law. State certification ensures that the Project will not adversely impact impaired waters (waters that do not meet water quality standards) and that the Project complies with applicable water quality improvement plans (total maximum daily loads). The states must grant, deny, or waive water quality certification for a project before a federal permit or license can be issued. The ADEQ and Regional Water Quality Board in California must provide Section 401 Water Quality Certifications for the federally issued permits, including the 404 permits in both states.

2.1.6 Clean Water Act – Section 402 National Pollutant Discharge Elimination System Permits

To comply with criteria described in the USEPA's CWA, all construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, must obtain an NPDES permit for stormwater discharges (40 CFR Parts 122 and 123) (USEPA 1972). NPDES permits (also called Construction General Permits) are issued by the USEPA or similar authorized state entity following submittal of a Notice of Intent (NOI) for construction activities, and preparation of a SWPPP that describes how erosion and sediment transport will be minimized to adjacent water bodies.

The Construction Contractor(s) will be responsible for implementing site-specific SWPPPs and is required to perform routine inspections throughout the duration of construction activities until the Notice of Termination (NOT) is filed.

2.1.7 Clean Water Act – Section 404 Waters of the United States Permits

Waters of the United States, including wetlands, are subject to the United States Army Corps of Engineers (USACE) jurisdiction under Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into Waters of the United States. Section 404 of the CWA applies to all jurisdictional Waters of the United States, including wetlands that have significant nexus to interstate commerce. The USACE jurisdiction over non-tidal Waters of the United States extends to the "ordinary high water mark provided the jurisdiction is not extended by the presence of wetlands" (33 CFR Part 328.4 [USEPA 1972]); and under 40 CFR Part 230.3 (s)(1) (USEPA 1972). Jurisdictional waters include surface waters, such as navigable waters and their tributaries, all interstate waters and their tributaries, natural lakes, all wetlands adjacent to other jurisdictional waters and all impoundments of these waters.

The entire Project is within the Los Angeles District of the USACE and would provide regulatory review and permitting services for the entire Project.

Under Section 404, the USACE issues a number of Nationwide Permits (NWP) for different types of activities that result in minimal individual and cumulative adverse effects on the aquatic environment and Individual Permits for larger and more complex impacts.

The USACE NWP Number 12 (NWP 12), Utility Line Activities authorizes the discharges of dredge or fill material into Waters of the United States during construction, maintenance, repair and removal of utility lines, including the associated excavation, backfill, or bedding for the utility lines, provided that the activity at any single waterbody crossing does not result in the permanent loss of greater than a 0.5 acre of non-tidal Waters of the United States. In accordance with NWP 12 a preconstruction notification (PCN) to the USACE district engineer must be submitted prior to commencement of activity if any of the following criteria is met:

1. The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way (ROW).

2. A Section 10 permit (obstruction or alteration of navigable Waters of the United States) is required.

3. The utility line (in waters), excluding overhead lines, exceeds 500 feet.

4. The utility line is placed within a jurisdictional area (waters) and runs parallel to a stream bed that is within that jurisdictional area.

5. The discharges result in the loss of more than 0.1 acre of regulated waters.

6. Permanent access roads are constructed above grade in regulated waters for a distance of more than 500 feet.

7. Permanent access roads are constructed in regulated waters with impervious materials.

Field surveys and analysis of the survey data from all potential Waters of the United States associated with the Project indicates that submittal of a PCN may be required.

Specifically, a PCN may be required for towers sited within the ordinary high water mark of the Colorado River in which a Section 10 permit is to be submitted because utility lines consisting of aerial electric power transmission lines crossing navigable Waters of the United States (which are defined at 33 CFR part 329 [USEPA 1972] and include the Colorado River) must comply with the applicable minimum clearances specified in 33 CFR Part 322.5(i) (USEPA 1972). A PCN is not predicted to be required for foundations within 404 jurisdictional washes since foundation footings will be micro-sited outside of 404 jurisdictional washes where possible and the maximum permanent loss of Waters of the United States at any tower totals much less than 0.5 acre. The maximum permanent impact for each type of foundation pier and the foundation pier permanent footprint is as follows:

- Guyed-V Structure (Tangent): Typical foundation = 9.0 feet in diameter by 24 feet deep (one per structure); additional four grouted anchors for the guys. Guys would be located within the ROW limits and would include a one-foot square footprint, typically. Helical anchors would require a four-square foot footprint = 85 square feet.

- H-Frame Lattice or Steel Pole (Tangent): foundation five feet in diameter by 24 feet deep (two per structure) = 20 square feet.

- Self-supporting Tangent and Dead-end Structures: foundation four to six feet in diameter by 38 feet deep (four per structure) = 28 square feet.

- Drilled Pier (Steel Monopole): foundation four to six feet in diameter by 38 feet deep (one per structure) = 28 square feet.

Type A roads (well-maintained county dirt roads, private roads, and all paved roads) and Type B roads (existing dirt roads – improvements required) will be utilized to the maximum extent feasible to reduce disturbances caused by access road construction. Type A roads require no improvements. Utilization and maintenance of Type B roads will require blading and widening the existing roadway including some areas that cross 404-regulated washes at grade. Other existing roads may have already been established above grade particularly in Segments P10, P11, and 15e. No impervious surfaces or above grade crossings will be added that exceed the NWP 12 threshold for a PCN, and temporarily impacted crossings will be restored to pre-construction contours. Therefore, maintenance of Type B roads is expected to only result in temporary impacts to Waters of the United States.

Where roads do not currently exist (Type C and Type D roads, respectively), they will be widened or constructed at grade to the maximum extent feasible and no impervious surfaces will be added. Where roads cross Waters of the United States, an at-grade crossing, commonly known as an “Arizona Crossing” would typically be maintained or constructed. Such crossings account for the geography when siting roads to cross them, such as avoidance of steep banks or rock outcroppings, and are constructed to leave the bed of the wash intact or at grade if un-grouted rock is added for stabilization. All crossings will be constructed in a manner that does not change the historical flow by +/- one cubic foot nor change the direction of the flow. Additionally, any grading necessary to achieve appropriate grade for heavy equipment clearances would start at the ordinary high water mark and work laterally pulling native material away from the channel. Because surface flows would be maintained across the road, and the channel bed would not be filled or raised, crossings of this type do not result in a loss of Waters of the United

States even if matts or un-grouted rock are added for stabilization. Matts or rock added for stabilization would ultimately be removed at reclamation.

Should any new above-grade crossings or fill be necessary, they would not be expected to exceed 0.5 acre or 500 linear feet of permanent fill and loss of waters at any single crossing or within any single waterbody. Therefore, a PCN for access road maintenance, improvements, and construction are not anticipated.

2.1.8 Rivers and Harbors Appropriation Act of 1899, Section 10

Under Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. § 403; Chapter 425, March 3, 1899; 30 Stat. 1151), the building of any wharfs, piers, jetties and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires the approval of the Chief of Engineers. Authority of the USACE to issue permits for the discharge of refuse matter into or affecting navigable waters under Section 13 of the 1899 Act (33 U.S.C. § 401; 30 Stat. 1152) was modified by Title IV of P.L. (33 U.S.C. §§ 1341-1345; 86 Stat. 877), as amended, which established the NPDES permits.

USACE permits are required under Section 10 for structures and/or work in or affecting navigable Waters of the United States except as otherwise noted by USACE. Certain activities specified in 33 CFR Part 330 are permitted by that regulation (“nationwide general permits”). Other activities may be authorized by district or division engineers on a regional basis (“regional general permits”). If an activity is not exempted by USACE or authorized by a general permit, an individual Section 10 permit will be required for the proposed activity.

The Fish and Wildlife Coordination Act (16 U.S.C. §§ 661-667e; 48 Stat. 401), as amended, provides authority for the United States Fish and Wildlife Service (USFWS) to review and comment on the effects on fish and wildlife of activities proposed to be undertaken or permitted by the USACE.

The Colorado River is the only navigable water in the Project area. A Section 10 permit from the USACE would be required for an overhead transmission line crossing of the Colorado River.

2.1.9 Other Federal Permits and Programs

Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, “each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities.”

Executive Order 11990, Protection of Wetlands (42 Federal Register 26961), directs all federal agencies to minimize the destruction, loss, or degradation of wetlands, and to enhance the natural and beneficial values of wetlands.

2.2 State Regulations

2.2.1 Soil Resources

State conservation laws have been enacted in all the states that would be traversed by the proposed Project. Through state legislation, local resource conservation districts have been formed. These report to state administrative agencies, typically conservation commissions associated with state departments. The latter include the California Department of Conservation and Arizona State Land Department. The resource conservation districts are responsible for local planning, program development, and reporting to administer soil and water conservation programs. They interact with their respective state-level departments as well as the Natural Resources Conservation Service.

2.2.2 Water Resources

Many states regulate waterways and adjacent wetlands, either through specific regulatory programs or via Section 401 of the CWA, also known as 401 Water Quality Certification. State regulatory programs may incorporate permitting procedures to authorize jurisdictional impacts to waterways and wetlands and may require compensatory mitigation for unavoidable impacts. In the absence of a specific regulatory program, states may utilize 401 Water Quality Certification to require measures over and above those required by the USACE Section 404 permit. Section 401 allows a state to review, authorize or deny, and implement requirements additional to those of the USACE 404 permit. If a state chooses to utilize its authority under Section 401, the Section 404 permit does not go into effect until the state issues the 401 Water Quality Certification.

The state agencies, authorizations and guidance that are applicable to wetlands and Waters of the United States permitting and mitigation requirements for the Project are summarized below.

2.2.3 Arizona

Arizona Department of Water Quality (ADWQ) is responsible for the following:

- CWA Section 401 Water Quality Certification. A 401 Certification is required for a project or activity requiring a federal permit or license that will result in a discharge to Waters of the United States. These projects include:
    - A CWA Section 404 Permit from the USACE to allow discharges of dredged or fill materials to Waters of the United States.
    - A Rivers and Harbors Act Section 9 or 10 Permit.
    - Applying for a federal permit for projects involved in the construction of hydroelectric dams, power plants, or other facilities regulated by Federal Energy Regulatory Commission licenses.
    - Other federal permits or licenses that may result in a discharge to Waters of the United States.

- Request for certification submitted to ADWQ by USACE for Section 404 permits.
- Section 401 certification issued by ADWQ prior to federal Section 404 approval.
- In 2017, the ADWQ certified, with conditions, the use of NWP 12 in the state of Arizona.
- CWA Section 402 NPDES permit for construction stormwater discharge.

Arizona SWPPP – The State of Arizona Construction General Permit (CGP) for stormwater discharges associated with construction activities regulates stormwater discharges from all construction activities that disturb one or more acres. Under this permit, an "operator" is required to obtain an Arizona Pollutant Discharge Elimination System permit in order to discharge stormwater. Prior to obtaining this permit, the entity must prepare a SWPPP and submit it along with an NOI application to ADEQ Quality 30 days before beginning construction activities. The SWPPP describes potential pollution sources and the BMPs, which will be used to prevent stormwater contamination. The NOI describes the construction project and route(s) that stormwater may take from the construction site to surface Waters of the State.

ADEQ reviews the NOI to determine if the operator may discharge stormwater under the CGP, or if an individual permit is required.

It is unlikely a Municipal Separate Storm Sewer System permit would be required for Project batch plants as they would be located outside of municipalities.

2.2.4 California

California Department of Fish and Wildlife (CDFW) is responsible for protecting and conserving fish and wildlife resources, and the habitats upon which they depend per the following:

- California Fish and Game Code, Sections 1600-1616, as Amended: The CDFW regulates activities that would divert or obstruct the natural flow or otherwise substantially change the bed, channel, or bank of any river, stream, or lake, or that would deposit or dispose of debris, waste, or other material where it may pass into any river, stream, or lake that supports fish or wildlife. This jurisdiction also applies to riparian habitats associated with watercourses.
    - The Lake and Streambed Alteration Program (Section 1602) reviews projects that would alter any river, stream, or lake and conditions projects to conserve existing fish and wildlife resources. The California Department of Fish and Wildlife must be notified if a project will substantially modify a river, stream, or lake.
- California Fish and Game Code, Sections 5650-5656, as Amended: These codes state that it is unlawful to deposit in, permit to pass into, or place where it can pass into Waters of the State any substance that is deleterious to fish, plant life, mammals, or bird life.

Porter-Cologne Water Quality Control Act, as Amended: This law gives broad authority to the State Water Resources Control Board and California's nine Regional Water Quality

Control Boards to establish water quality standards and discharge prohibitions, issue waste discharge requirements, and implement provisions of the federal CWA, including Section 401 Water Quality Certification. The Project lies within the jurisdiction of the Colorado River Water Quality Control Board, which administers the Water Quality Control Plan for protection of beneficial uses of surface and groundwater for this part of the state.

Executive Order W-59-93: Established state policy guidelines with two primary goals for wetlands conservation: to ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage in the state.

In 2014, California Department of Water Resources prioritized groundwater basins through its California Statewide Groundwater Elevation Monitoring Program, which was established in response to the legislation enacted in California's 2009 Comprehensive Water package. The 2014 California Statewide Groundwater Elevation Monitoring Program Basin Prioritization classified basins as high, medium, low, or very low based on the consideration of factors described in the legislation. The Project area is classified as very low to low priority.

California SWPPP – The state of California CGP for stormwater discharges associated with construction activities regulates stormwater discharges from all construction activities that disturb one or more acres. To obtain coverage under this CGP, the appropriate legally responsible person must electronically file the Permit Registration Documents, which include an NOI, SWPPP, and other documents required by this CGP, and mail the appropriate permit fee to the State Water Resources Control Board, prior to commencement of construction activities. The SWPPP describes potential pollution sources and the BMPs, which will be used to prevent stormwater contamination. The NOI describes the construction project and route(s) that stormwater may take from the construction site to surface Waters of the State.

It is expected that as the stormwater program develops, the Colorado River Regional Water Control Board may issue General Permits or Individual Permits that contain more specific permit provisions. When this occurs, the General Permit will no longer regulate those dischargers that obtain coverage under Individual Permits. There is no specified time table for when these provisions may occur.

A copy of the applicable SWPPP shall remain with the Construction Manager on the construction site or at a staging area(s). The SWPPP must be readily available while the Project is under construction, from the start of construction activities until the NOT is filed.

The Construction Contractor(s) must retain a set of construction site maps for the duration of the Project and for three years after the NOT, that delineates the following items:

- Areas of soil disturbance that have been stabilized.
- Areas to be graded along with a time schedule.
- Areas of potential soil erosion where control practices will be implemented.
- Types of control practices and time schedule for implementation.
- Locations of any post-construction projects.
- Topography.

- Existing cover.
- Drainage patterns.
- Buffer areas (environmentally sensitive areas, wetlands, waterways, etc.).
- Surface waters.

To ensure that water quality is being protected, the CGP requires that all SWPPPs be written, amended, and certified by a Qualified SWPPP Developer. A Qualified SWPPP Developer must possess one of the eight certifications and or registrations specified in the CGP and effective two years after the adoption date of the CGP, must have attended a State Water Resources Control Board-sponsored or approved Qualified SWPPP Developer training course.

Each project must complete a risk determination analysis, which determines sampling, monitoring, and reporting requirements. There are two major requirements related to site planning and risk determination in the CGP; the project's overall risk is broken up into two elements: 1) project sediment risk (the relative amount of sediment that can be discharged, given the project and location details); and 2) receiving water risk (the risk sediment discharges pose to the receiving waters).

It is unlikely a Municipal Separate Storm Sewer System permit would be required for activities within Riverside County, California as Project activities are predominately located outside of municipalities.

3 SWPPP Components

3.1 Project Information

Project/Site Name: Ten West Link Transmission Project

Project Description and Location: The Ten West Link Transmission Line Project proposed by DCRT would consist of a single-circuit, series-compensated, 500 kilovolt transmission line between the Arizona Public Service Delaney Substation in Maricopa County, Arizona and the Southern California Edison Colorado River Substation in Riverside County, California. The Project would be designed with a conductor capacity to transmit 3,200 megawatts and provide interconnection capability for new energy projects located in the region.

The land use of the Project area includes mainly rural, sparsely populated lands under federal management as well as some state and private lands. There is relatively little private residential land in the Project area. Residences are typically scattered on large lots and generally increase in density near cities and towns within the Project Area. Towns near the Project include Brenda, Arizona; Quartzsite, Arizona; and Blythe, California.

The only perennial water course in the Project area is the Colorado River. The Colorado River is also the only water body in the Project area on the California 303(d) list. There are numerous ephemeral washes, canals, irrigation ditches, stock ponds, floodplains, groundwater basins, wells, and springs in the Project area. Water resources in the Project area reflect the area's arid land where: channels are generally dry for long periods of time;

streamflow results from high-intensity, short-duration summer thunderstorms and less intense, longer duration winter storms; runoff is typically erratic and sediment-laden; springs are few and limited in extent; and wetlands and shallow groundwater are localized.

The intermittent movement of water from the higher elevations is towards the south and southeast towards the Gila River as well as north, northeast, and east towards the Colorado River. The Colorado River moves water from north to south through the Project area.

3.2 Nature and Sequence of Construction Activities

Construction of the transmission line(s) would include the following sequence of activities:

1. Surveying and staking the transmission centerline, structure locations, environmental cultural resources sensitive areas, other Project features, and work areas.
2. Upgrading or constructing short- and long-term access roads.
3. Clearing and grading the structure sites, and short- and long-term work areas.
4. Excavating and installing foundations.
5. Assembling and erecting structures with short- and long-term work areas.
6. Stringing conductors and shield wires.
7. Installing counterpoise (structure grounds), where needed.
8. Post-construction cleaning up.
9. Constructing the Series Compensation Station (SCS) and associated power connection to the distribution line.
10. Reclamation.

In addition to these activities, other preconstruction and construction components include:

- Preconstruction resource surveys and aerial photography.
- Construction storage yards and concrete batch plants located in previously disturbed areas and areas of lesser ecological impact to the extent practicable.
- Equipment staging areas located in previously disturbed areas and areas of lesser ecological impact to the extent practicable.
- Equipment and fuel staging and storage areas in conformance with the Project Spill Prevention, Control, and Countermeasure Plan.
- Flagging, fencing, and signs in areas of active construction activities or where required for employee and public safety.

- Transportation management for Project access and public safety as in conformance with the Project Traffic and Transportation Management Plan.
- Fire protection as identified in the Project Fire Prevention and Protection Plan (Appendix J-2).
- Blasting in areas of hard rock not removable by heavy excavators; in conformance with the Project Blasting Plan.
- Erosion/dust control and air quality management in conformance with the Project Fugitive Dust Control Plan and Construction Emissions Mitigation Plan (Appendix H-1).
- Hazardous materials management in conformance with the Project Hazardous Materials Management Plan.
- Emergency preparedness and response in conformance with the Project Emergency Preparedness and Response Plan.
- Control of noxious weeds in conformance with the Project Vegetation Management Plan (Appendix F-7).

Further information and details regarding sequencing and the nature of construction are outlined in the Chapters 3 and 4 of the Project Plan of Development (POD).

3.2.1 Access

Access to the ROW would be provided by existing roads and trails, such as those associated with the Devers Palo Verde transmission line and nearby pipelines, to the extent practicable. Access for the Project would be in accordance with the Access Road Plan and Section 3.1.10 of the Project POD. Access is divided into five categories - Types A through E. These have associated disturbance estimated, as described in Table G-2-1, below.

TABLE G-2-1 ACCESS ROAD DISTURBANCE

ACCESS ROAD DISTURBANCE WIDTHS		ROAD TYPE				
		Access Type A (existing maintained public or private roads)	Access Type B (upgraded existing roads[1])	Access Type C (new centerline access[1])	Access Type D (access spur roads[1])	Access Type E (Helicopter Access)
Slope	Flat (0-7.99%)	-	18[2]	22[2]	22[2]	-
	Moderate (8-14.99%)	-	25[2]	30[2]	30[2]	-
	Steep (15% and above)	-	30	50	76	-

[1] Measured in feet.
[2] Does not include wash areas.

3.2.2 Transmission Structures

Proposed support structures would typically be steel structures of various configurations. The primary structures types would be self-supporting, four-legged tangent and dead-end steel lattice structures; guyed-V structures with a single footing and four support guy wires; and two-legged, H-frame (steel lattice) structures. Lattice H-frame or steel monopole structures may be used for areas of active agricultural activity and/or to facilitate entrance into substations. In certain high off-highway vehicle use areas, self-supporting lattice structures or monopoles would replace guyed-V structures to eliminate hazards to those recreationists (Draft Environmental Impact Statement [EIS]), Section 2.4 in Appendix 2). Typical span length for structures would be approximately 1,500 feet. On average, three to eight structures would be placed per mile, depending on the structure type, topography, and angles of the route.

Guyed-V structures are proposed to be used in areas that do not parallel existing self-supporting lattice structures along the route. Guyed-V structures use four guying lines per structure. Guy lines would be located within the ROW, would have to remain at the grade that they were installed, and would have reduced distances extending from the structure foundation for lower height guyed-V structure.

3.2.3 Foundations and Structure Construction

Each structure type requires specific foundation configurations. A temporary disturbance area of approximately 1.1 acres is estimated for each structure site. A long-term work area at the base of each structure would be required for long-term maintenance. These areas would be somewhat larger than the structure foundations and vary based on structure type.

Each support structure would require the installation of foundations, which are typically drilled concrete piers. The foundation for the structures would be long-term disturbance for the life of the Project. The long-term work area at the base of each structure would be required for long-term maintenance. While revegetation would occur in this work area, minimal contouring would be performed.

A typical temporary disturbance area of up to 1.1 acres has been assumed for each structure work area, which would be used for assembly, erection, and crane pads. Short-term disturbance estimates are based on this assumption; however, actual disturbance would be reduced to the minimum size required to the extent practicable, based on site-specific conditions, during field staking prior to construction (see Draft EIS, BMP-MISC-02; Appendix 2A). Actual dimensions of the temporary area of disturbance may vary, depending on factors such as terrain, structure size, and vegetation.

If foundation type requires the use of cast-in-place concrete, standard BMPs for concrete disposal and handling of concrete wash waste water will be used in accordance with all proper federal and state rules.

3.2.4 Conductors

The conductors are the wire cables strung between transmission line structures over which the electric current flows.

In the process of conductor installation, insulators and stringing sheaves would be installed on the structures (short-term disturbance already accounted for at structure sites), pulling the pilot line through the sheaves, which would connect to and pull the conductor; and pulling/tensioning of the conductor. Additional temporary disturbance work areas to support conductor, ground wire, and optical ground wire pulling, and snubbing sites include the use of puller/tensioner sites, snubbing sites, and splicing areas.

Pulling sites would be approximately 600 feet by 200 feet in size. Snubbing sites (where a conductor is temporarily fixed or attached to the ground for conductor-sagging purposes) would be located within the ROW and are locations where conductors are spliced together approximately every 15,000 to 18,000 feet along the transmission line route. Access to both sites would be required for necessary equipment. Snub sites will be 200 feet wide by 600 feet long. In addition, there will be puller and tensioner sites at each angle, in the dimensions of 500 feet by 200 feet. All puller/tensioner sites, where possible, will be deemed drive and crush with the utilization of a soil compactor to reach compaction necessary for heavy equipment to travel sufficiently without risk of roll over, spinning out, or rutting. In instances where drive and crush disturbance cannot reach a level enough plain for the stated heavy equipment necessary, then blading will have to occur in order to keep pullers, tensioners, and wire boats level for efficient and safe wire conducting activities. All blading associated with puller/tensioner sites will be temporary. Temporary blading is also important and necessary on the temporary roads associated with access to the puller/tensioner sites for the Project.

3.2.5 Series Compensation Station

A new SCS system would be located primarily within the 200-foot-wide ROW parallel to an existing SCS associated with the Devers Palo Verde transmission line, approximately 47 miles from the Arizona Public Service Delaney Substation.

The SCS will be integrated into the footprint of the transmission line within a 200-foot by 315-foot (1.5 acre) fenced area. Clearing of all vegetation would be required for the entire SCS area, including a distance of 10 feet outside the fence, for a total long-term disturbance of 1.7 acres. A layer of minimum four-inch deep crushed, 0.75-inch to 1.0-inch grade, washed rock will be used throughout the station area and up to three feet beyond the fence boundary. The new SCS would be connected to an Arizona Public Service 12 kilovolt distribution line located near Brenda, Arizona within a 20-foot-wide ROW. The distribution line would be approximately 3.13 miles long with a 20-foot-wide ROW. A crossing of Interstate 10 would be required for the distribution line.

Access roads for the transmission lines would be utilized for access to the SCS. The entire perimeter of the SCS would be enclosed with security fencing to protect equipment and prevent accidental contact with energized electrical equipment. Stormwater runoff containment ponds may be installed to moderate the discharge of stormwater offsite if determined to be necessary in the course of design.

3.2.6 Substations Upgrades

The equipment required to interconnect the Project to the Delaney and Colorado River substations is expected to be similar in type and size to the existing equipment at each substation. There would be no new disturbance associated with these installations.

3.2.7 Temporary Use Areas

Temporary use areas would be required for material storage, laydown yards, and batch plants during construction. These areas would be selected based upon the final Project alignment and located in previously disturbed areas to the extent practicable. Material storage/laydown yards would be active during construction. Material staging/storage areas, averaging approximately 10 acres each, would be strategically located along the Project transmission line routes, approximately 20 miles apart. Staging areas would be fenced with locked gates and may have security. Temporary staging areas would be powered by local distribution lines if available and necessary, or by a diesel generator; in California, renewable energy sources would be used if feasible and available. Some staging areas would also be used for concrete batch plant operations. If diesel generators or batch plants are implemented in the temporary use areas, any applicable air quality permits or otherwise will be acquired by the Construction Contractor.

3.2.8 Construction Water Requirements

Water would be required for concrete structure foundation construction at the batch plants and dust control during construction. Water for the Project will be obtained from the following potential sources: 1) drawn from Central Arizona Project locations with permits through the Central Arizona Project and water draw agreements; 2) from municipal resources using water use agreements (typically from metered set-up at fire hydrants); or 3) from private wells under water use agreements with landowners. Water use estimates for dust control, restoration and construction are detailed in Table 3-9 and Table 4-1 of the POD (Volume I).

3.2.9 Disposal and Cleanup

Construction would generate non-hazardous solid wastes, including material packaging, concrete, hardware and scrap metal. However, the volume of these wastes is not expected to be substantial. Personal trash would be removed from the ROW on a daily basis. Construction waste (boxes, crates, etc.) would be removed from the transmission ROW shortly after each crew completes their specific task on site. The solid wastes generated during construction would be hauled away for recycling or disposal at approved disposal sites.

3.2.10 Construction Reclamation

Construction reclamation, including cleanup, soil stabilization, and revegetation would occur at the end of the construction process, as described in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

3.2.11 Construction Workforce and Schedule

The Project is expected to be constructed in up to two simultaneous work fronts with over 100 workers on each work front and is expected to take approximately 1.5 years to complete. The SCS construction effort would require approximately 10 workers and is expected to take about 120 days to complete. Crew parking would be located at one of the material storage yards closest to the work area. Upon obtaining all permits and ROW approvals, DCRT would commence construction activities. Additional details on construction workforce is provided in Section 4.4 Volume I of the POD; a representative

schedule (approximate calendar day durations) for major Project activities are also detailed in Section 4.6, Volume I of the POD, and is as follows:

- Construction Mobilization and Recruitment: 15 days
- Access Road Construction: 128 days
- Foundation Installation: 365 days
- Structure Erection and Assembly: 363 days
- Wire Stringing and Installation of Cables and Accessories: 213 days
- Commissioning and Testing: 57 days
- SCS construction: 120 days

3.2.12 Project Construction Closeout

Upon completion of construction and commissioning for the Project, DCRT and the construction contractor(s) would coordinate with the Compliance Inspection Contractor, BLM, and other permitting agencies to conduct final on-the-ground inspections of Project conditions. After BLM's determination of successful construction completion on BLM-administered lands, the Compliance Inspection Contractor would submit a final summary report to the BLM Authorized Officer documenting the construction process. When the BLM Authorized Officer determines that construction (including initial reclamation activities) has been completed in compliance with the ROW grant, Record of Decision (ROD), POD, and any other applicable permits, the Compliance Inspection Contractor, construction contractor(s), and DCRT's construction roles would be considered complete. This determination would initiate the post-construction monitoring phase for reclamation success for which DCRT would remain responsible.

3.2.13 Operation and Maintenance

After construction, Project operation and maintenance would be an ongoing activity including ROW safety requirements, transmission line inspections, preventative and emergency maintenance, vegetation management including trimming and removal of vegetation within the ROW, SCS maintenance, substation maintenance, and long-term access to the ROW through general road maintenance and installation of signs and markers. DCRT will obtain any necessary stormwater permits necessary for these activities.

3.3 Subcontractors

Subcontractors are required to comply with the SWPPP for any work that is performed on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. Subcontractors will instruct their employees, working on this project, about the requirements of the SWPPP. A copy of the SWPPP will be available for review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign a certification statement, which, under penalty of law, certifies that the person understands the terms and conditions of the CGP and SWPPP that authorizes the stormwater discharges associated with construction activity associated with this Project.

3.4 Responsibilities and Delegation of Authority

3.4.1 Responsible Parties

At a minimum the stormwater team is comprised of individuals who are responsible for overseeing the development, implementation, and maintenance of the SWPPP, any later modifications to it, and for compliance with the requirements in this permit (i.e., installing and maintaining stormwater controls, submitting reports, conducting site inspections, taking corrective actions where required, employee training, and testing for non-stormwater discharges).

Operator(s)

The operator(s) who will be engaged in construction activities at the site:

Company: TBD
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of control (if more than one operator at the site):

Emergency 24-Hour Contact

Company Name: TBD
Name:
Telephone:

Site Supervisor(s)

Company Name: TBD
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of control (if more than one operator at site:

Subcontractor(s)

Company Name: TBD
Name:
Address:

City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of control (if more than one operator at site:

A delegation of authority must be signed by the person designated as the duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the CGP at the Ten West Link construction site. The designee is authorized to sign any reports, SWPPPs, and all other documents required by the permit.

3.5 Stormwater Discharge

Sediment would be the primary source of stormwater discharge from soil-disturbing construction activities. Erosion takes many forms owing to the effects of climate, topography, land use, groundcover, and the erodibility of the soil type. The main agent of erosion in the Project area is rainfall which leads to splash erosion, rill erosion, tunnel erosion, gully erosion, and sheet erosion. Wind is a secondary agent of erosion. Soil characteristics identified for this Project suggest that disturbed areas would experience low to high erosion potential either by water and/or wind. Sediment redistribution of the soil resource as a result of wind and water erosion could cause damages to Waters of the United States, state prime farmlands, and air quality.

Potential risk for erosion could be increased on disturbed areas after soil salvage operations due to removal of the vegetative cover and the loss of surface soil structure. Cutting and removal of vegetation will occur; however, where practicable, downed vegetation and undisturbed low vegetation would be left in place within the disturbance areas to serve as soil protection and erosion control. Vegetation would only be cleared to the extent necessary, minimizing impacts to soil resources (see Appendix F-7, Vegetation Management Plan).

Soil erosion after redistribution on re-graded sites would also be a risk, thus BMPs (listed in Section 4) would include limiting the amount of time this soil is exposed and seeding shortly thereafter if season allows. Windblown dust could result from the disturbance of fine textured soils during construction and reclamation activities, however dust control measures outlined in Appendix H-1 of the POD (Fugitive Dust Control Plan and Construction Emissions Mitigation Plan) will be followed through the completion of the Project.

Potential stormwater pollutants other than sediment may include:

- Construction Yard – Portable toilets, general building materials, solvents, adhesives and trash.
- Designated Fueling Areas (if applicable) – Fueling activities and minor equipment maintenance.
- Construction Activities – Leaks from construction equipment.

3.6 Non-stormwater Discharge

Potential sources of non-stormwater discharges may include:

- Discharges from emergency fire-fighting activities.
- Water used to control dust.
- Water used to rinse or weed wash vehicles and equipment.
- Water used for compacting soil.
- Water used for drilling and coring such as for evaluation of foundation materials.
- Water obtained from dewatering operations/foundations in preparation for and during excavation and construction.

3.7 Waters of the United States and Impaired Waters

The only perennial water course in the Project area is the Colorado River, which is considered jurisdictional due to its' designation as a navigable water by the USACE. The Colorado River is also the only water body in the Project area on the 303(d) list of impaired waters. The Colorado River is on the California 303(d) list and is listed for toxicity. This section of the Colorado River is not on the 303(d) list of impaired waters in Arizona.

Although no wetlands or springs have been identified at this time, field work would be conducted using the USACE *Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a) to confirm.

Some of the numerous ephemeral washes may be considered Waters of the United States. This determination would be made by field work to identify the ordinary high-water mark using the USACE *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b).

There are no outstanding Arizona waters (OAW) within the Project area.

3.8 Best Management Practices

3.8.1 Selection of Best Management Practices

Selection of the most appropriate combination of BMPs for a specific construction site should be based upon a careful review of the areas of the site that affect its potential for erosion and stormwater runoff contamination. These potential problem areas are:

1. Slope protection.
2. Soil mounds and material stockpile.
3. Excavated area (trenches, pits, etc.).
4. Perimeter and access controls.
5. Inlet drain protection.

6. Channels or medians.

7. Equipment storage and maintenance.

8. Debris management, cleanup, and washout.

9. Landscaping and vegetation.

For each of the nine potential problem areas, there is often more than one BMP available to effectively reduce the volume and velocity of stormwater runoff, the amount of the site exposed to erosion, and the potential for stormwater runoff pollution. BMPs are generally categorized into three main groups: erosion control, sediment and pollutant control, and general housekeeping. Erosion control is preventative; controlling erosion at its source. Sediment and pollutant control treats runoff to remove eroded sediment and other associated stormwater pollutants. Good housekeeping measures are less structured and address general operations and maintenance activities. Typical BMP techniques are discussed in the following sections.

Guidance documents for BMP selection include USEPA's "Developing Your Stormwater Pollution Prevention Plan – A Guide for Construction Sites" and the California Department of Transportation's "Construction Site Best Management Practices (BMP) Manual" available at http://www.dot.ca.gov/hq/construc/stormwater/CSBMP-May-2017-Final.pdf.Erosion Control.

3.8.2 Erosion Control

Erosion control refers to methods for reducing the volume or velocity of stormwater runoff, which will come into contact with exposed areas of the Project site. Erosion control methods involve limiting the exposure of graded areas to offsite runoff through modifications of the construction design plan or scheduling, reducing runoff velocities, providing vegetative cover, installing structural controls, and implementing other onsite management options. If a pre-manufactured product is to be implemented on a site for erosion control, the contractor should always follow the manufacturer's installation and maintenance recommendations as the primary reference for implementation. Erosion control BMPs include:

- Erosion Control Mats – Geotextiles, mats, plastic covers, or erosion control blankets designed to stabilize disturbed soil areas and protect soils from erosion by wind or water.

- Mulching – Providing a stabilized surface for seeding and/or prevention of erosion. Mulches include organic materials, straw, wood chips, bark or other wood fibers, decomposed granite, gravels, a variety of netting or mats of organic or non-organic materials, and chemical soil stabilization.

- Protection of Trees and Vegetation in Construction Areas – Preservation of existing vegetation is the identification and protection of desirable vegetation in order to provide erosion and sediment control and protect desirable trees from mechanical damage while the land is being developed.

    - Vegetation Feathering – The edge of the ROW would be cleared in a manner to emulate the natural open spaces of adjacent landscapes.

Mature vegetation will be put in a gradual transition between two habitat types and other specimens will be placed in varying heights ("edge feathering"). The total area to be cleared would be determined by the size, type, and density of adjacent vegetation as well as the natural clearings of the surrounding landscape.

- Pipe Slope Drains – A temporary rigid or flexible pipe that conveys runoff down un-stabilized slopes. The drain is anchored on the upstream end with some form of headwall to limit erosion, secure the pipe, and direct water into the pipe inlets.

- Stabilized Construction Entrance – A stabilized pad of aggregate underlain with filter cloth located at any point where traffic will be entering or exiting a construction site to or from a public ROW, street, alley, sidewalk or parking area. For added effectiveness, a wheel wash or wash rack area can be incorporated into the design to further reduce sediment tracking.

- Construction Road Stabilization – The temporary stabilization of the subgrade, sub-base, and base of access roads, subdivision roads, parking areas, and other onsite vehicle transportation routes for dust and erosion control.

- Dust Control – A comprehensive plan to limit offsite sediment depression by minimizing or controlling airborne fugitive dust. There are three methods of dust control: 1) Geotextiles, mats, plastic covers, and other mechanical methods; 2) dust palliatives (soil binders); and 3) revegetation.

- Temporary Access Waterway Crossing – A temporary access stream crossing is a structure placed across a waterway to provide access for construction purposes for a period of less than one year. There are two main temporary access waterway crossings that are generally constructed:

    - Temporary access culverts - are effective in controlling erosion, easily constructed, and allow for heavy equipment loading.

    - Temporary access fords - offer very little sediment and erosion control and are only effective in ephemeral stream channels. Temporary fords are the least expensive waterway crossing, allow for maximum load limits, and require minimal maintenance.

- Diversion Dikes – A ridge of compacted soil (recommended with a vegetated lining) that is often located at the top or base of a sloping disturbed area and redirects runoff to a less sensitive outfall or area.

- Drainage Swales – A drainage way with a lining of grass, stone, asphalt, concrete, or other material. Permanent channels must be designed and constructed in accordance with appropriate local design standards.

- Outlet Protection, Velocity Dissipation Devices – Structures and devices placed at pipe outlets to prevent scour and reduce the velocity and/or energy of stormwater flows. These structures may include a section of rock, grouted riprap, and concrete rubble placed at the outlet end of culverts, conduits, or channels. Various products can also be installed for velocity reduction including hydrobrakes, vortex valves, and drop shafts.

- Surface Roughening – A temporary erosion control practice often used in conjunction with grading. Soil roughening involves increasing the relief of a bare soil surface with horizontal grooves, stair-stepping (running parallel to the contour of the land), or tracking using construction equipment. Slopes that are not fine graded and that are left in a roughened condition can also reduce erosion.

3.8.3 Sediment and Pollutant Control

Sediment and pollutant control include methods for separating and containing suspended sediment and other construction related pollutants from the stormwater before the water leaves the Project site and enters a storm drain inlet or a receiving natural water body. These methods involve constructing organic, sand, and rock barriers to filter sediment-laden runoff, protecting storm drain inlets, and constructing settling ponds. If a pre-manufactured product is to be implemented on a site for sediment or pollutant control, the contractor should always follow the manufacturer's installation and maintenance recommendations as the primary reference for implementation. Typical sediment and pollutant controls include:

- Organic Filter Barrier – A temporary linear sediment barrier consisting of straw bales, sediment wattles or similar material, designed to intercept and slow sediment-laden sheet flow runoff. Organic filter barriers allow sediment to settle from runoff before water leaves the construction site. Organic filter barriers include straw bales, sediment wattles, and other organic filter berms.

- Sand Bag Barrier – A temporary berm constructed of stacked sandbags, along the perimeter of a site, installed across a channel, or along the ROW in a disturbed area. The sandbags may be filled with pea-sized gravel to enhance filtration.

- Gravel Filter Berms – A temporary berm constructed of open graded rock or bags of gravel installed at the toe of a slope, or the perimeter of a developing or disturbed area.

- Check Dams – Small barriers consisting of rock, sand bag, or earth berms placed across a drainage swale or ditch. Typically, they are used in conjunction with other channel protection techniques such as vegetation lining and turf reinforcement mats.

- Silt Fence – A geotextile fabric stretched between either wooden or metal posts with the lower edge of the fabric securely embedded in the soil. The fence is typically located downstream of disturbed areas to intercept sheet flow runoff.

- Revegetation – Revegetation consists of an area of trees, shrubs, vines, and ground covers that create a buffer or a groundcover between a disturbed construction area and neighboring areas, particularly natural water bodies.

- Storm Drain Inlet Protection – A variety of methods of intercepting sediment at low point inlets through the use of stone, filter fabric, inlet inserts, and other materials. This is normally located at the inlet, providing either detention or filtration to reduce sediment and floatable materials in stormwater.

- Temporary Sediment Basins – A pond area formed by constructing an embankment of compacted soil across a drainageway with a controlled outlet in which sedimentary laden runoff is directed to allow settling of suspended sediment from the runoff.

- Temporary Sediment Traps – A sediment trap is a temporary containment area that allows sediment in collected stormwater to settle out during infiltration or before the runoff is discharged through a stabilized spillway. Sediment traps are formed by excavating or constructing an earthen embankment across a waterway or low drainage area. Sediment traps are smaller and less expensive to install than sediment basins, but generally settle out coarser particles than sediment basins.

- Sediment Dewatering Operations – A filtration bag or sediment bag is a large bag made of geotextile that is used for filtering water pumped as part of dewatering a worksite. The bag is hooked up to a hose and water is pumped through the bag. The water seeps through the geotextile fabric and the sediment is trapped in the bag.

- Waterbars - A small ditch or ridge of material is constructed diagonally across a road or ROW to divert stormwater runoff from the road surface, wheel tracks, or a shallow road ditch.

3.8.4 Good Housekeeping

General housekeeping refers to any management and/or work practices implemented on a construction site to prevent the contamination of stormwater by materials other than sediment. General housekeeping practices involve proper management of chemicals and other potentially hazardous construction materials, equipment, and wastes. Managing potential pollutants offsite (i.e., conducting equipment maintenance back at the maintenance shop rather than at the site) is an effective method of eliminating potential spills and contamination on the construction site. If a pre-manufactured product is to be implemented on a site for general housekeeping, the contractor should always follow the manufacturer's installation and maintenance recommendations as the primary reference for implementation. Good housekeeping BMPs include:

- Chemical Management – Chemical management includes the proper labeling, handling, storage and disposal of chemical. Proper chemical management prevents, or at least minimizes, stormwater runoff from being polluted through spills or other forms of contact. It is not intended to supersede or replace normal site assessment and remediation procedures. Chemical management practices, along with the applicable Occupational Safety and Health Administration, Department of Transportation, and USEPA guidelines, should be incorporated at all construction sites that use or generate potentially hazardous wastes. Target chemicals include:

    - Paints, solvents, and stains.

    - Fuel, lube oils, grease, and cutting oils.

    - Pesticides, herbicides, and fertilizer.

- Solid Waste Management – The routine collection, recycling, and disposal of accumulated solid waste generated at the construction site.

- Equipment Maintenance Procedures – Establish a program of equipment maintenance procedures, which will reduce contamination of onsite soils.

- Designated Washdown Areas – Procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems of watercourses. Standard practices include:

    - Adequate sizing of concrete washouts to accommodate anticipated washout water and potential rainwater.

    - Frequent inspection of concrete wash areas to check for leaks or integrity/degradation.

    - Siting concrete washouts in construction areas close to the concrete pouring activity but not within 50 feet of wetlands or storm drains.

    - Providing proper ingress/egress to concrete washout areas to encourage vehicle traffic.

    - Educate personnel and subcontractor on proper concrete washout procedures.

    - Installation of signage that identifies concrete washout areas.

    - Removal of excess concrete when the system reaches 50 percent of its capacity.

- Spill Containment Plan – An emergency plan to contain spills of dangerous, hazardous, or toxic wastes, which mitigates environmental damage and provides prompt notice to proper authorities.

- Road Sweeping and Road Track-out Cleaning – Road track-out cleaning procedures refer to methods to remove tracked sediment around construction site points of egress.

3.9 Monitoring, Inspections, and Corrective Action

The Construction Contractor(s) shall properly install and maintain all erosion and sediment control treatments and adequately execute erosion and sediment control measures and techniques. Proper operation and maintenance will also include appropriate quality assurance procedures.

As part of the SWPPP, the Construction Contractor(s) will be required to develop an inspection schedule and conduct routine inspections to identify conditions that could lead to discharges of pollutants or contact stormwater with storm drainages or surface waters. Schedules will be established for regular inspections of equipment, and erosion and sediment control measures. Inspections of the construction site shall occur in accordance with each applicable state CGP to identify areas contributing to a stormwater discharge and to evaluate whether industry standards are in place and functioning properly. During

inspections, the Construction Contractor(s) will also determine if the industry standards identified in the SWPPP are adequate and whether additional control measures are needed. All monitoring and inspection records which have been produced in association with the SWPPP will be retained for a period of at least three years.

To monitor the mitigation's effectiveness and to evaluate whether additional mitigation measures are required a monitoring program and reporting system will be established by the Construction Contractor(s) and followed per the applicable state and federal requirements and guidelines.

3.9.1 Monitoring

3.9.1.1 Arizona

Operators of projects that are located within 0.25 mile of impaired OAWs shall prepare and implement a monitoring program that meets the requirements of this Part. The Colorado River is not on the Arizona 303(d) list of impaired waters for this section of the river and there are no OAWs in the Project area.

The operator shall develop a written monitoring program for analytical monitoring of stormwater unless an acceptable rationale demonstrates that stormwater monitoring is not necessary, in accordance with Part 7.1 of the CGP. The monitoring program shall be a part of the SWPPP as either an appendix or separate SWPPP section. The monitoring program shall include:

1. Locations of monitoring sites.

2. The name(s) and title of the person(s) who will perform the monitoring.

3. A map showing the segments or portions of the receiving water that are most likely to be impacted by the discharge of pollutant(s).

4. Water quality parameters/ pollutants to be sampled.

5. The citation and description of the sampling protocols to be used.

6. Identification of the analytical methods and related method detection limits (if applicable) for each parameter required. Method detection limits shall be below applicable surface water quality standards when possible.

7. Additionally, for construction sites within 0.25 mile of an impaired water, the monitoring program shall include:

    a. An identification of the pollutant(s) of concern based on the most recent 305(b) / 303(d) listing or other information available.

    b. A description of potential source(s) of this pollutant(s) from the Project, if any.

3.9.1.2 California

Attachment A of the CGP establishes minimum monitoring and reporting requirements for all linear underground/overhead projects (LUPs). It establishes different monitoring requirements depending on project complexity and risk to water quality. The monitoring requirements for Type 1 LUPs are less than Type 2 and 3 projects because Type 1 projects have a lower potential to impact water quality. Some type of monitoring will be required for this Project.

A discharger shall prepare a monitoring program prior to the start of construction and immediately implement the program at the start of construction for LUPs. The monitoring program must be implemented at the appropriate level to protect water quality at all times throughout the life of the Project.

3.9.2 Inspections

3.9.2.1 Arizona

The Arizona CGP inspection schedule is indicated below:

At a minimum, operator shall conduct a site inspection in accordance with one of the schedules listed below. The operator shall document in the SWPPP, which schedule is being used and, when necessary the location of the rain gauge or weather station used to obtain rainfall information. ADEQ encourages adding inspections before and/ or during predicted storm events and “spot” inspections to ensure control measures will be effective in managing stormwater runoff and associated pollutants.

1. Routine Inspection Schedule. The operator shall ensure inspections are performed at the site as indicated below to ensure control measures are functional and that the SWPPP is being properly implemented. To determine the amount of rainfall from a storm event that occurs on the site (in accordance with options b. or c.), the operator shall obtain rainfall information (in accordance with Part 4.4(3) of the CGP) from either a properly maintained rain gauge on the site, or a weather station that is representative of the site’s location. For any day of rainfall during normal business hours that measures 0.25 inch or greater, the total rainfall measured for that day shall be recorded in accordance with Part 4.4(3) of the CGP.

    a. The site will be inspected a minimum of once every seven calendar days, or

    b. The site will be inspected a minimum of once every 14 calendar days, and also within 24 hours of each storm event of 0.5 inch or greater in 24 hours; or

    c. The site will be inspected a minimum of once per month, but not within 14 calendar days of the previous inspection and within 24 hours of the occurrence of a storm event of 0.25 inch or greater.

2. Reduced Inspection Schedule. The operator may reduce inspection if the entire site has been temporarily stabilized, discharges are unlikely based on seasonal rainfall patterns, or runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or frozen ground exists). With a reduced inspection schedule, the site shall be inspected at least once per month (but not within 14 calendar days of the previous inspection) and before an anticipated storm event and within 24 hours of each storm event of 0.5 inch or greater in 24 hours.

3. Inspection Schedule for Sites within 0.25 mile of Impaired Waters or OAWs. If any portion of the construction site is within 0.25 mile of an impaired water or OAW, the operator shall inspect the site at least once every seven calendar days. The operator may reduce inspections to the schedule specified in Part 4.2(2) for those areas of the construction site that have undergone temporary or final stabilization.

4. Inspection Schedule for Inactive and Unstaffed Sites. A site is inactive and unstaffed that will have an anticipated period of no construction activity for at least six consecutive months. Inactive and unstaffed sites within 0.25 mile of an impaired water or OAW are not eligible for this reduced inspection frequency unless they have undergone temporary stabilization. Operator's responsibilities include:

    a. Immediately before becoming inactive and unstaffed, the operator shall perform an inspection in accordance with Part 4.4 of the CGP. All control measures must be in operational condition in accordance with Part 3.1 of the CGP prior to becoming inactive and unstaffed.

    b. During the time the site is inactive and unstaffed, the operator shall perform an inspection at least once every six months and within 24 hours of each storm event of 0.5 inch or greater in 24 hours.

    c. Non-storm event inspections must be at least three months apart.

    d. All control measures must be maintained in operational condition.

    e. The site shall be secured, such as limited access, blocking or fencing.

    f. Maintain a statement in the SWPPP as required in Part 6.4 (11) of the CGP indicating that the construction site is inactive and unstaffed. The statement must be signed and certified in accordance with Appendix B, Subsection 9 of the CGP.

    g. If circumstances change and the site becomes active and/or staffed, this exception no longer applies, and the operator shall immediately resume the routine inspection schedule.

ADEQ retains the authority to revoke this exception from routine inspections where it is determined that the discharge causes, has a reasonable potential to cause, or contribute to an exceedance of an applicable water quality standard, including designated uses.

5. Inspections are only required during the Project's normal working hours. If an inspection day (except those required relative to a rainfall event) falls on a

Saturday or holiday, the inspection may be conducted on the preceding workday. If the inspection day falls on a Sunday, the inspection may be conducted on the following Monday. If rainfall events occur on the weekend or holiday, an inspection relative to that event may be conducted the following workday.

6. Inspections are not required under Adverse Conditions. The operator is not required to inspect areas that, at the time of the inspection, are considered unsafe for inspection personnel. Inspections may be postponed when conditions such as local flooding, high winds, or electrical storms, or situations that otherwise make inspections unsafe. The inspection must resume as soon as conditions are safe.

3.9.2.2 California

The CGP requires visual monitoring at all sites, and effluent water quality at all Risk Level 2 and 3 sites. It requires receiving water monitoring at some Risk Level 3 sites. All sites are required to submit annual reports, which contain various types of information, depending on the site characteristics and events. A summary of the monitoring requirements is found in Table G-2-2.

TABLE G-2-2 REQUIRED MONITORING ELEMENTS FOR RISK LEVELS-CALIFORNIA

Risk Level	Visual	Non-Visible Pollutant	Effluent	Receiving Water
1	Three types required for all risk levels: Non-stormwater Pre-rain Post-rain	As needed for all risk levels	Where applicable	Not required
2			pH, turbidity	Not required
3			pH, turbidity	If receiving water monitoring trigger exceeded: pH, turbidity and suspended sediment concentration. Bioassessment for sites 30 acres or larger.

Type 1 Monitoring Requirements: A discharger must conduct daily visual inspections of Type 1 linear underground/overhead projects during working hours while construction activities are occurring. Inspections are to be conducted by qualified personnel and can be conducted in conjunction with other daily activities. Inspections will be conducted to ensure the BMPs are adequate, maintained, and in place at the end of the construction day. The discharger will revise the SWPPP, as appropriate, based on the results of the daily inspections. Inspections can be discontinued in non-active construction areas where soil disturbing activities have been completed and final stabilization has been achieved (e.g., trench has been paved, substructures have been installed, and successful final vegetative cover or other stabilization criteria have been met).

A discharger shall implement the monitoring program for inspecting Type 1 projects. This program requires temporary and permanent stabilization BMPs after active construction is completed. Inspection activities will continue until adequate permanent stabilization has been established and will continue in areas where re-vegetation is chosen until minimum vegetative coverage has been established. Photographs shall be taken during site inspections and submitted to the State Water Resources Control Board.

Type 2 and 3 Monitoring Requirements: A discharger must conduct daily visual inspections of Type 2 and 3 projects during working hours while construction activities are occurring. Inspections are to be conducted by qualified personnel and can be in conjunction with other daily activities.

All dischargers of Type 2 and 3 projects are required to conduct inspections by qualified personnel of the construction site during normal working hours prior to all anticipated storm events and after actual storm events. During extended storm events, the discharger shall conduct inspections during normal working hours for each 24-hour period. Inspections can be discontinued in non-active construction areas where soil disturbing activities have been completed and final stabilization has been achieved (e.g., trench has been paved, substructures installed, and successful vegetative cover or other stabilization criteria have been met).

The goals of these inspections are: (1) to identify areas contributing to a stormwater discharge; (2) to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the terms of the CGP; and (3) to determine whether additional control practices of corrective maintenance activities are needed. Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible, depending upon worker safety.

All dischargers shall develop and implement a monitoring program for inspecting Type 2 and 3 projects that require temporary and permanent stabilization BMPs after active construction is completed. Inspections will be conducted to ensure the BMPs are adequate and maintained. Inspection activities will continue until adequate permanent stabilization has been established and will continue in areas where revegetation is chosen until minimum vegetative coverage has been established.

A log of inspections conducted before, during, and after the storm events must be maintained in the SWPPP. The log will provide the date and time of the inspection and who conducted the inspection. Photographs must be taken during site inspections and submitted to the State Water Resources Control Board.

Rain Event Action Plan: A Rain Event Action Plan is a written document, specific for each rain event. This plan should be designed that when implemented it protects all exposed portions of the site within 48 hours of any likely precipitation event forecast of 50 percent or greater probability.

This CGP requires Risk Level 2 and 3 dischargers to develop and implement a plan designed to protect all exposed portions of their sites within 48 hours prior to any likely precipitation event. The plan requirement is designed to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A plan must be developed when there is likely a forecast of 50 percent or greater probability of precipitation in the Project area. The National Oceanic and Atmospheric Administration defines a chance of precipitation as a probability of precipitation of 30 percent to 50 percent chance of producing precipitation in the Project area. NOAA defines the probability of precipitation as the likelihood of occurrence (expressed as a percent) of a measurable amount (0.01 inch or more) of liquid precipitation (or the water equivalent of frozen precipitation) during a specified period of time at any given point in the forecast area.) Forecasts are normally issued for 12-hour time periods. Descriptive terms for uncertainty and aerial coverage are used as follows:

TABLE G-2-3 NATIONAL OCEANIC AND ATMOSPHERIC DEFINITION OF PROBABILITY OF PRECIPITATION

Probability of Precipitation	Expressions of Uncertainty	Aerial Coverage
0 percent	None used	None used
10 percent	None used	Isolated
20 percent	Slight chance	Isolated
30-50 percent	Chance	Scattered
60-70 percent	Likely	Numerous
80-100 percent	None used	None used

The discharger must obtain the precipitation forecast information from the National Weather Service Forecast Office (http://www.srh.noaa.gov/).

3.9.3 Corrective Action

Corrective actions are actions the operator takes in compliance with this Part to modify, or replace any control measure that failed to meet the conditions of the Permit. ADEQ does not consider routine maintenance or repairs as corrective actions. If any of the following conditions at the construction site occur resulting in or from a failure of a control measure, the operator shall implement new or modified control(s):

1. A necessary control measure was never installed, was installed incorrectly, or
2. One of the prohibited discharges as indicated in the Permit has occurred; or
3. The permitting authority determines that modifications to the control measures are necessary.

On the same day a condition requiring corrective action is discovered, the operator shall take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if the problem is identified when it is too late in the work day to initiate a corrective action, the corrective action shall be initiated on the following work day, unless the condition poses imminent endangerment to human health or the environment, in which case the operator shall take immediate action.

Any control measures or repairs required must be made operational, or completed, by no later than seven calendar days from the time of discovery. If the operator cannot complete the necessary repairs or installation of controls within seven calendar days, the SWPPP shall include the following:

1. The reason it is infeasible to complete the installation or repair within the seven-calendar day timeframe; and
2. The schedule for installing and making the control measure(s) operational as soon as practicable after the seven-day timeframe.

Any corrective actions that result in changes to any of the control measures or procedures shall be documented in the SWPPP within seven calendar days of completing the corrective action work.

3.10 Training

Training of Project employees and subcontractors on environmental topics including stormwater pollution prevention will be provided during general Project orientation. Stormwater training topics will include: stormwater regulations, erosion control BMPs, sediment control BMPs, non-stormwater BMPs, and good housekeeping BMPs. Training records will be maintained by the Construction Contractor and will be made available upon request. Additional training will be tailored and/or supplemented as required for those employees with specific stormwater responsibilities, as described below.

Arizona and California: Properly trained personnel are more capable of preventing spills, responding safely and effectively to accidents and recognizing situations that could lead to stormwater contamination. The Construction Contractor(s) will be responsible for familiarizing personnel with the information contained in the SWPPP. Training meetings will be held for new personnel who join the Project after the initial training has been provided. The purpose of these meetings will be to review the proper installation methods and maintenance of all erosion control measures to be used for the Project. The monitoring/inspection program and all required maintenance and repair will be conducted by trained personnel. The SWPPP must identify the name, title and a description of the qualifications and a copy of any training certificates of team members and Project-specific training must be documented.

The following personnel, at a minimum, must receive training:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention measures);
- Personnel responsible for the application and storage of treatment chemicals (if applicable);
- Personnel responsible for conducting inspections as required; and
- Personnel responsible for taking corrective actions as required.

California: To ensure that the preparation, implementation, and oversight of the SWPPP is sufficient for effective pollution prevention, the Qualified SWPPP Developer and Qualified SWPPP Practitioners responsible for creating, revising, overseeing, and implementing the SWPPP must attend a State Water Resources Control Board sponsored or approved Qualified SWPPP Developer and Qualified SWPPP Practitioner training course.

Environmental protection measures associated with training include the following:

Applicant Proposed Measure (APM)-WQ-02: Worker Environmental Awareness Program (WEAP) Development and Implementation – The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-

specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs, Health and Safety Plan, and Hazardous Substance Control and Emergency Response Plan.

MM-BIO-California Environmental Quality Act (CEQA)-1 Implement a WEAP: Prior to any work activities on the Project site, including surveying, mobilization, fencing, grading, or construction, a WEAP will be prepared; the WEAP will be approved by the California Public Utilities Commission (CPUC) with a final version complete prior to the issuance of construction permits. The WEAP will be implemented throughout the duration of Project related construction activities, including operation and maintenance phases. The WEAP will include, at a minimum, the following items:

- Maps showing the known locations of listed and/or special status wildlife, populations of listed and rare plants and sensitive vegetation communities, riparian habitats, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations.

- A discussion of measures to be implemented for avoidance of sensitive resources discussed in the EIS (including this appendix) and the identification of an onsite contact in the event of the discovery of sensitive species on the site; this will include a discussion on micro trash.

- Training materials and briefings will include but not be limited to: a discussion of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event of the discovery of dead or injured wildlife; and a review of mitigation requirements.

- Protocols to be followed when road kill is encountered in the work area or along access roads and the identification of an onsite representative to whom the road kill will be reported. Road kill will be reported to the appropriate local animal control agency and CPUC within 24 hours. Road kill of special status species will also be reported to the CDFW and USFWS (for federally-listed species) per MM BIO-CEQA-2. Special status species mortalities should be reported to the CPUC, CDFW, and USFWS within 24 hours or as otherwise required by the project's regulatory permits.

- Literature and photographs or illustrations of potentially occurring special status plant and/or wildlife species will be provided to all Project contractors and heavy equipment operators.

- A special hardhat sticker or wallet size card will be issued to all personnel completing the training, which will be carried with the trained personnel at all times while on the Project site.

- All new personnel will receive this training and may work in the field for no more than 5 days without participating in the WEAP. A log of all personnel who have completed the WEAP training will be kept on site.

- A copy of the WEAP will be kept at an easily accessible location within the Project site (e.g., foreman's vehicle, construction trailer) for the duration of the Project.
- A standalone version of the WEAP will be developed, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations.

3.11 Project Modifications

The Construction Contractor(s) is responsible for maintaining a current SWPPP and shall amend the SWPPP whenever there is a change in construction or operations that may affect the discharge of pollutants to surface waters or groundwater. The SWPPP shall also be amended if it is in violation of the CGP or has not achieved the general objective of eliminating pollutants in stormwater discharges. The SWPPP shall be amended and implemented in a timely manner, but in no case more than 14 days after it has been determined that the SWPPP is inadequate. All amendments should be dated and directly attached to the SWPPP per agency regulations.

3.12 Recordkeeping

A copy of this SWPPP and all associated documents will be maintained on site for the duration of construction activities and for a period of at least three years from the date that the site has been finally stabilized and the NOT has been filed. These records may be kept electronically and will be available to agencies upon request. This will include, but is not limited to:

- Records of all data used to complete the NOI.
- SWPPP and all associated appendices.
- Dates of grading, construction activities and stabilization activities.
- A copy of the CGP.
- The signed and certified NOI form or permit application.
- Inspection Records.
- Corrective action logs.
- A copy of the NOT.

3.13 Post-Construction Stormwater Management

Mitigation measures used to reduce pollutants in stormwater discharges after all construction phases are complete, should take into account local post-construction stormwater management requirements, policies and guidelines, as well as site-specific and seasonal conditions. Post-construction mitigation measures will be assessed during future transmission line maintenance. Any areas disturbed by Project construction that are observed to be eroding sediment into drainages will be assessed for the appropriate

permanent mitigation measure to control sediment movement off the disturbed area. Disturbed areas will also be reclaimed per POD Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

4 Environmental Protection Measures

Preparation of an Arizona SWPPP and a California SWPPP would meet the following APM. These measures are broken out by Project-wide and California-specific measures:

4.1 Project-Wide Measures

APM-WQ-01: SWPPP Development and Implementation – Following Project approval, DCRT would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in Title 40 CFR Part 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following:

- Defining ingress and egress within the Project site.
- Implementing a dust control program during construction.
- Properly containing stockpiled soils.

Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized. The Plan would be updated during construction as required by the State Water Resources Control Board and ADEQ. The Plan would include the following components, in accordance with ADEQ requirements for coverage under the CGP:

- Stormwater team qualifications and contact information.
- Identification of operators.
- Nature of construction activities.

- Sequence and estimated dates of construction activities.
- Site description.
- Site map(s).
- Receiving waters.
- Control measures to be used during construction activity.
- Summary of potential pollutant sources.
- Use of treatment chemicals.
- Pollution prevention procedures, including spill prevention and response and waste management procedures.

Other environmental protection measures which may assist with implementation and adherence to the SWPPP include:

APM-WQ-03: Vehicles and Equipment Fueling and Maintenance – Vehicle and equipment fueling and maintenance operations would be conducted in designated areas only; these areas would be equipped with appropriate spill control materials and containment.

BMP-WQ-05: Water Use (Compliance with Conservation Management Action [CMA]/ Land Use Plan Amendment [LUPA]-SW-18) – Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the Project shall be solely for the beneficial use of the Project or its associated mitigation and remediation measures, as specified in approved plans and permits.

BMP-WQ-06 Avoidance of Hydrologic Alterations (Compliance with CMA/LUPA-SW-21 and 22) – Considerations shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they would dissipate by percolation into the landscape. All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the Project area, or specific mitigation measures shall be implemented that would minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate.

BMP-WQ-07: Structures in Floodplains – No permanent structures would be placed in floodplains that are narrower at the ROW crossing than the typical span width of 1,200 feet (i.e., it is assumed that such floodplains could be spanned and avoided).

BMP-AQ-01: Dust Palliatives (Compliance with CMA-LUPA-BIO-6 and 13) – Dust palliatives would be applied, in lieu of water, to inactive construction areas (disturbed lands or soil stockpiles that are unused for 14 consecutive days). Dust palliatives would be chosen by the Dust Control Site Coordinator and or construction contractor. Dust palliatives would be environmentally safe; comply with federal, state, and local regulations; and would not produce a noxious odor or contaminate surface water or groundwater and, therefore, would not pose runoff concerns during rain events. Application rates for dust palliatives would follow the manufacturer's recommendations.

Material Safety Data Sheets for any palliatives would be available on site and provided to the BLM 14 days prior to use.

BMP-SOIL-03 (Compliance with CMA/LUPA-BIO-7): Covers for topsoil stockpiles would be of materials resistant to damage and/or degradation from exposure to ultraviolet light and other elements and would be replaced (as needed) if they deteriorate, become worn, or damaged.

BMP-SOIL-04 (Compliance with CMA/LUPA-SW-9): The disruption of desert pavement and desert varnish shall be minimized to the extent feasible. Grading for new access roads or work areas in areas covered by desert pavement and/or desert varnish shall be avoided if possible.

APM-BIO-07: Monofilament Plastic – No monofilament plastic would be used for erosion control (for example, matting, fiber roll, wattles, silt fencing backing). Appropriate materials include burlap, coconut fiber, or other materials as identified in the general and site-specific SWPPP.

APM-BIO-10: Erosion and Dust Control – The BMPs included in the SWPPP would be implemented during construction to minimize impacts associated with erosion. Watering for dust control during construction would also be used as described previously (AQ-01). Watering shall not result in prolonged ponding of surface water that could attract wildlife to the work area. Minimal or no vegetation clearing and/or soil disturbance would be conducted for site access and construction in areas with suitable topography (i.e., overland driving/overland access).

APM-BIO-14: Minimizing Vegetation Clearing – In areas with suitable topography, minimal or no vegetation clearing, and soil disturbance would be conducted for site access and construction (i.e., overland driving/overland access). Overland driving/overland access would be used in areas that support the necessary construction equipment. Upgrading of existing access roads and construction of new access roads would be implemented as necessary for the safe construction activities.

BMP-BIO-15: Reclamation and Restoration (Compliance with CMA/LUPA-BIO-7 and 8) – As a part of the Habitat Restoration and Monitoring Plan, the soil horizons would be stored separately for the areas where the success of restoration could be crucial for rare plant species.

BMP-BIO-19: Colorado River (Compliance with CMA/LUPA-SW-13 and 16) – In the vicinity of the Colorado River, existing structure spacing and conductor heights would be matched to the greatest extent practical to reduce the potential for bird collisions with the power line. The transmission line would span the Colorado River and the minimum number of structures possible would be located within the undeveloped floodplain. The term “vicinity of the Colorado River” is defined to mean the river crossing, floodplain, and associated agricultural lands. In these areas, conductor bundles would be in a horizontal, parallel configuration, and match existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. No guyed structures would be used at these locations.

BMP-BIO-38: Use of State of the Art and Commercially-Available Technology (Compliance with CMA - LUPA-BIO-9 and 15) – Use state-of-the-art, commercially-available, construction and installation techniques as approved by BLM, appropriate for

the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

BMP-BIO-42: Dead and Downed Wood (Compliance with CMA-LUPA-BIO-VEG-2) – Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

BMP-BIO-47: Riparian Functioning Condition (Compliance with CMA-LUPA-SW-13) – BLM would manage all riparian areas on BLM land to be maintained at, or brought to, proper functioning condition.

BMP-AES-09: Site Linear Facilities along Natural Lines within the Landscape – Siting of facilities, especially linear facilities (e.g., transmission lines, pipelines, roads), should take advantage of natural lines within the landscape (e.g., natural breaks in the landscape topography, the edges of clearings, or transitions in vegetation). Siting of facilities on steep slopes should be avoided. Siting linear facilities along naturally occurring lines in the landscape can reduce apparent contrast through repetition of the line element or through combination of multiple line elements into a single line element. Facilities sited on steep slopes are often more visible (particularly if either the Project or viewer is elevated); they may also be more susceptible to soil erosion, which could also contribute to negative visual impacts.

APM-GEO-01: Erosion and Sedimentation – DCRT would implement a SWPPP for the Project. A monitoring program would be established to ensure that the prescribed BMPs are followed throughout transmission line construction. Examples of these BMPs include the following:

- Preparation, training, and maintenance for clear work-site practices, tracking controls, and materials management to minimize the direct work impacts on soil and erosion.

- Installation of temporary silt fences and other containment features (including gravel bags and fiber rolls) surrounding work areas to prevent the loss of soil during rain events and other disturbances.

- Utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains.

- Utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains.

- Stockpiling soils at least 100 feet from drainages to the extent possible. If soil stockpiles are within 100 feet from a drainage proper measures would be implemented such as soil tackifiers, straw wattles around the pile, and/or covering the stockpile.

APM-HAZ-01: Hazardous Substance Control and Emergency Response – DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and

techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable. Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.

All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:

- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment near sensitive resources.

As part of the Project tailgate meetings, DCRT or their contractor would gather emergency contact numbers, first aid location, and work site location in case of emergency.

4.2 California-Specific Measures

BMP-WQ-04: Non-petroleum Dust Palliatives – Palliatives used for dust control would be non-petroleum products in addition to nontoxic, as specified in AQ-01.

BMP-SOIL-01: During reclamation and revegetation efforts, a BLM soil scientist and/or botanist review plans and approve, as appropriate, to determine type and location of any scarification.

BMP-SOIL-02: During reclamation and revegetation efforts, the BLM would review plans and approve, as appropriate, to determine where soil compaction would be appropriate, to avoid potential adverse conditions created by compaction.

BMP-SOIL-05: (Compliance with CMA/LUPA-SW-9) – Desert pavement and desert varnish in activity areas in California shall be assessed by qualified geological or biological monitors prior to construction. If disturbance from an activity is likely to exceed 10 percent of the desert pavement and/or desert varnish identified within the activity boundary, the BLM would determine whether the erosional and ecologic impacts of exceeding the 10 percent cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement and/or desert varnish disturbance.

BMP-SOIL-06: (Compliance with CMA/LUPA-SW-11) – Side-casting of soil during road construction shall be avoided.

BMP-SOIL-07: (Compliance with CMA/LUPA-SW-10) – To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.

CMA-LUPA-BIO-9: Water and Wetland Dependent Species Resources – Implement the following general LUPA CMA for water and wetland dependent resources:

- Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
    - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
    - Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related cleanup materials will occur at an approved off-site landfill.
    - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
- Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:
    - Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
    - Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
    - Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.
    - Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.
    - Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.

- Conduct regular inspections and maintenance of long-term erosion control measures to ensure long - term effectiveness.

CMA-LUPA-BIO-13: General Siting and Design (portions) – Implement the following CMA for project siting and design:

- Use nontoxic road sealants and soil stabilizing agents.

CMA-LUPA-BIO-15: Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

CMA-LUPA-BIO-VEG-2: Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

CMA-LUPA-SW-1: Soil and Water General – Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity-specific National Environmental Policy Act analysis.

CMA-LUPA-SW-2: Soil and Water General – Buffer zones, setbacks, and activity limitations specifically for soil and water (ground and surface) resources will be determined on an activity/site-specific basis through the environmental review process and will be consistent with the soil and water resource goals and objectives to protect these resources. Specific requirements, such as buffer zones and setbacks, may be based, in part, on the results of the Water Supply Assessment defined below. In general, placement of long-term facilities within buffers or protected zones for soil and water resources is discouraged but may be permitted if soil and water resource management objectives can be maintained.

CMA-LUPA-SW-3: Soil and Water General – Where a seeming conflict between CMAs within or between resources arises, the CMA(s) resulting in the most resource protection apply.

CMA-LUPA-SW-4: Soil and Water General – Nothing in the “Exceptions” below applies to or takes precedence over any of the CMAs for biological resources.

CMA-LUPA-SW-5: Groundwater Resources – Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings “Soil Resources,” “Surface Water,” and “Groundwater Resources,” may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates:

- The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.

CMA-LUPA-SW-12: Surface Water – Except in Development Focus Areas, exclude long-term structures in, playas (dry lake beds), and Wild and Scenic River corridors, except as allowed with minor incursions (see definition in the Glossary of Terms).

CMA-LUPA-SW-14: Surface Water – All relevant requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be complied with.

CMA-LUPA-SW-15: Surface Water – Surface water diversion for beneficial use will not occur absent a state water right.

CMA-LUPA-SW-21: Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.

CMA-LUPA-SW-22: All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the Project area, or specific mitigation measures shall be implemented that will minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate. These beneficial uses may include municipal, domestic, or agricultural water supply; groundwater recharge; surface water replenishment; recreation; water quality enhancement; flood peak attenuation or flood water storage; and wildlife habitat.

5 Erosion Control Plan (California Environmental Quality Act Compliance)

Per CEQA the Applicant shall develop and submit an Erosion Control Plan to the CPUC and BLM at least 60-days prior to the start of construction activities. The Erosion Control Plan shall be developed in conjunction with the SWPPP.

5.1 Sustainable Erosion Control

Soil, water, and vegetation must all be considered to achieve successful, self-sufficient erosion control at a project site. The goals of sustainable erosion control are to meet or exceed stormwater quality requirements and minimize life cycle costs by:

- Creating long-term soil health.
- Establishing the most appropriate vegetation.
- Achieving permanent soil stabilization.

The objectives for soils include optimal infiltration, adequate organic matter, sufficient water holding capacity, and favorable soil biology and healthy microbes. The objectives for vegetation include healthy plant communities, diverse species composition, and optimal rooting depth. The objectives for water include surface erosion reduction, runoff reduction, and no-to-low and temporary impacts to water quality.

5.2 Collect Site-Specific Desktop Data

A desktop assessment will be conducted to collect pertinent site information prior to a site visit. The following resources will be assessed based on availability:

- Environmental. Review any previous environmental studies of the area.
- Aerial Map. Review of vegetation and other land cover.
- Topographic Map. Review slope steepness and drainage flow patterns.
- Soils Map. Determine soil types.
- Geology Map. Determine slope stability.
- Local Annual Rainfall. Determine the amount and intensity of local rainfall.
- Erosivity. Obtain R-Values from Natural Resources Conservation Service National Revised Universal Soil Loss Equation (RUSLE2) Database online at: https://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm.

5.3 Site Reconnaissance

Depending on the available desktop information, a site reconnaissance visit may be required to obtain additional pertinent information about the Project area. Site reconnaissance activities may include the following:

- Soil. Inspect eroded areas, inspect fills and cuts, locate discharge point(s), identify topsoil location and depth, review potential disturbed soil areas.
- Water. Identify run-on and runoff areas and direction of sheet and concentrated flow. Identify water sources not found in the desktop assessment.
- Vegetation. Inspect existing vegetation, identify litter/duff location and depth.
- Other considerations. Identify potential environmentally sensitive areas.

5.4 Assess Erosion Potential

The RUSLE2 can assist in this assessment process, so the scope of problem can be adequately addressed with appropriate BMP selection. There are several key design considerations to reduce erosion and increase water quality which include:

- Increase infiltration-incorporate organic matter where feasible.
- Provide surface protection from raindrop impact.
- Incorporate slope breaks, surface roughness, fiber rolls, etc., to slow runoff.
- Control runoff to prevent concentrated flows.

- Divert run-on at top of slope.
- Stabilize toe of slope.

RUSLE2 is a quantitative procedure for estimating soil loss in tons per acre per year. It applies to all land uses where mineral soil is exposed to the erosive forces of raindrop impact and runoff. RUSLE2 applies to all land uses including cropland but is not specific to construction sites; by design, RUSLE2 is more applicable to rural sites.

RUSLE2 must be used as a predictive tool only. Basic information can be found online at: http://www.iwr.msu.edu/rusle/.

5.5 Evaluate and Select Best Management Practices

BMPs are structural, non-structural, and management practices that are recognized to be the most effective and practical means of minimizing soil loss and reducing water quality degradation. There are two main classifications of BMPs for construction projects: “Erosion and Sediment Control” and “Non-Stormwater and Waste/Material Management.”

Erosion and Sediment Control BMPs:

- Minimize disturbed areas.
- Stabilize disturbed areas.
- Protect slopes and channels.
- Control site perimeter.
- Retain sediment.

Non-stormwater and Waste/Material Management BMPs:

- Practice good housekeeping.
- Contain and safely dispose materials and waste.
- Follow spill prevention protocol.

5.6 Evaluate and Select Sustainable Vegetation

Selecting appropriate plants is critical to achieving a sustainable erosion control design that stabilizes disturbed soil areas and helps promote succession. Succession seeks to re-establish natural stages of vegetation growth by providing early successional species as initial plant cover and creating conditions that support the establishment of later successional species.

Many disturbed sites are naturally “colonized” by early succession plants such as annual grasses and are then later supported by a more diverse cover of perennials, woody shrubs and trees. Selecting a balance of early and late succession plants in the Project design is appropriate. The Project’s selected control site will help identify climax species

and determine which early and late succession plants will be most successful. Control sites will exhibit the target plant community that is located adjacent to, or near, the Project-affected treatment sites. Control sites will be established within areas that are not disturbed by the Project per Appendix L-1, Reclamation, Vegetation, and Monitoring Plan.

There are many potential site constraints that might inhibit the succession process. These include but are not limited to drought, poor soils, and noxious weed infestations on or near the Project site.

The following methods may be utilized to evaluate potential plant species for the Project:

- Location. Select seed species based on regional and site-specific requirements (e.g., climate, soil).
- Observation. Finalize plant species list based on the vegetation that occurs on the control site.
- Calculation. Determine density by species and frequency of occurrence.
- Documentation. Evaluate photographs and unidentifiable plant specimens.
- Consultation. A qualified or BLM designated biologist/botanist can aid in identifying plants and noxious weeds. Federal land management agencies will approve the appropriate seed mix of species best suited to each reseeding site, including seed mixes, seeding method, amendments, and timing.

5.7 Environmental Protection Measures

In addition to the environmental protection measures described in Section 4, the following measure will ensure compliance with CEQA (i.e., in California) during construction, operation and maintenance of the Project.

MM-GEO-CEQA-2: The Applicant shall develop and submit an Erosion Control Plan to the CPUC and BLM at least 60-days prior to the start of construction activities. The Erosion Control Plan shall be developed in conjunction with the SWPPP (see APM WQ-01) and shall be kept onsite and readily available upon request. Successful implementation of the Erosion Control Plan will result in a less than significant impact related to erosion during all construction activities.

Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include:

- The location of all soil-disturbing activities, including, but not limited to new and/or improved access and spur roads.
- The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as crossings or public storm drains by the ROW and access roads).
- BMPs to protect drainage structures, such a public storm drains, downstream of soil disturbance activities as well as to prevent loss of top soils and erosion during construction (see BMP SOIL-01 through -07).

- Design features to be implemented to minimize erosion during construction.
- If soil cement is proposed, the specific locations must be defined in this Plan, and evidence of approval by the appropriate jurisdiction shall be submitted to the CPUC and BLM prior to use.
- If design features include the use of retaining structures and/or walls, the design of the features shall be consistent with MM VIS-06 (under Section 2.1.6 above) to use structure type to match the existing structures in the area and reduce form contrast.
- The location and type of BMPs that would be installed to prevent off-site sedimentation.
- Specification for the implementation and maintenance of erosion control measures and description of the erosion control practices, including appropriate design and installation details.
- Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC.

The locations requiring erosion control/SWPPP corrective actions/repairs shall be tracked by the Applicant, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the federal and California Construction General Permits. The inspection reports shall be maintained and kept in their respective SWPPP, kept on site as required by the federal and state Construction General Permits, and made available to the Regional Water Quality Control Board, CPUC, BLM, counties, local municipalities, and tribal governments, on request. Additionally, an Annual Report shall be filed for each reporting period in compliance with the federal and California Construction General Permit reporting requirements.

The Applicant shall submit to the CPUC and the BLM any grading plans that define the locations of the specific features listed.

The Applicant shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in any soil-disturbance or construction activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Stormwater Discharges Associated with Construction Activities (General Permit) from the applicable Regional Water Quality Control Boards, and the federal General Permit for Stormwater Discharges Associated with Construction Activities on Tribal Land.

Prior to ground disturbance in stream channels or other waters jurisdictional to the state of California or the federal government, the Applicant shall obtain a Streambed Alteration Agreement from the CDFW, a Section 404 permit from the USACE, and a CWA Section 401 certification from the State Water Resources Control Board.

Responsible Party: The Applicant shall develop the Erosion Control Plan and ensure that it is implemented throughout construction activities. The Applicant shall also be responsible for obtaining all necessary permits related to erosion and water quality control.

Timing: The Erosion Control Plan shall be developed at least 60-days prior to construction and shall be implemented throughout all construction activities. Any permits required for the Project shall be obtained prior to the start of construction.

Mitigation Monitoring and Reporting Program: The Applicant shall develop the Erosion Control Plan in conjunction with the SWPPP required for the Project. The Applicant shall keep on file any corrective actions related to erosion control and the SWPPP and submit these records to the Regional Water Quality Control Board, CPUC, BLM, and any applicable counties, local municipalities, or tribal governments upon request. The Annual Report shall be developed and filed by the Applicant for each reporting period. Any permits required shall be developed by the Applicant and submitted to the applicable agency for approval. The Applicant shall maintain a record of all permits and associated approvals to be kept on file.

Standards for Success: The Project will comply with federal and California Construction General Permit reporting requirements and any stipulations of applicable permits related to erosion control or the SWPPP.

6 Site Plan for Soils and Hydrology

6.1 Introduction

The following Site Plan for Soils and Hydrology describes DCRT's and/or its contractor's approach for avoiding and minimizing impacts to soil and hydrology resources from the proposed Ten West Link. The following information will be used in developing state-specific SWPPPs and the CPUC-required Erosion Control Plan.

6.1.1 Purpose and Objectives

This section represents the commitment on the part of DCRT to protect soil and water resources. The overall objective is to provide measures to protect these resources from potential impacts during construction, operation, and maintenance. This plan incorporates environmental protection measures contained in the Final EIS/ROD for the Project. This Plan is intended for use as a guide to determine the appropriate site-specific measures to be implemented during construction activities. The goals of this plan are to control Project-related erosion and sedimentation of soils that may impact soil resources and hydrological conditions.

6.2 Overview of Resources

6.2.1 Soils

The soils in the study area are associated with a variety of climates, vegetative cover, topography, and geology. Their properties vary depending on environmental conditions, but area soils were typically developed under hot, dry conditions characterized as having thermic or hyperthermic temperature regimes and arid or semi-arid moisture regimes.

The Natural Resource Conservation Service develops and maintains several soil geographic databases. Only the relatively general State Soil Geographic dataset was

used in the Final EIS/ROD and subsequently in this report. State Soil Geographic soil associations within the study area are generally characterized as having moderate to severe water erosion potential and slight to high wind erosion potential.

Sensitive soils in the study area may include desert pavement, biological soil crusts, calcareous soils, and wetland soils. Sand dunes are mapped along the western end of the study area near the Colorado River Substation and are described further under the active windblown sand, dunes, and sand transport corridors subheading below. Wetland soils in the study area are limited to only small areas along the Colorado River and across several low-lying basins associated with agricultural fields near the towns of Tonopah and Blythe. Similarly, alluvial soils can be found in the alluvial bottom lands associated with rivers and ephemeral drainage channels.

Soils with high shrink-swell (expansive) characteristics, corrosive soils, and collapsible soils may all occur within the study area. Expansive, corrosive, or collapsible soil characteristics are identified locally through site-specific geotechnical testing, and associated hazards can be addressed through soil correction during construction or engineering design.

Valley fever is another potential hazard naturally occurring in some soils in the Project Area. Valley fever spores survive in the top two to 12 inches of soil in many parts of Arizona and California.

6.2.1.1 Active Windblown Sand, Dunes, and Sand Transport Corridors

The Chuckwalla Valley of the Mojave Desert, located along Interstate 10 between Blythe and Desert Center, is an example of a sand transport corridor. This valley supports sand dune habitats that depend upon delivery of fine sand from aeolian (wind-driven) and fluvial (river-driven) processes. These sand dunes have an active layer of mobile sand and exist in a state of dynamic equilibrium as they continuously lose sand downwind and gain sand upwind. Dunes move within sand transport corridors, as wind direction and other factors change. Active sand dunes also provide important habitat for species that rely on regular supply of wind-blown sand.

The Desert Renewable Energy Conservation Plan identifies the entire western portion of the Project area on BLM-administered land west of Blythe as dune systems and aeolian sand transport corridors. Sand transport corridors and sand dunes move over time so the figure is approximate. Sand transport corridors and areas of active windblown sand, such as the one just north of the Colorado River Substation, are sensitive to development.

6.2.1.2 Soil Associations

Table G-2-4 presents the soil associations within the Project area.

TABLE G-2-4 SUMMARY OF STATE SOIL GEOGRAPHIC MAPPED SOILS IN THE PROJECT AREA

Soil Association	Draft EIS Segment Location	Description	Wind Erodibility Group	Shrink/ Swell Potential
Rositas-Ripley-Indio-Gilman (s275)	Colorado River and California Zone (ca-01, ca-02, ca-04, ca-05, ca-06, p-15w, p-16, x-09, x-10, x-11, x-12, x13, x-15, x16)	The soil association consists of very deep, well, or moderately well to somewhat excessively drained soils that formed in stratified stream alluvium, alluvium from mixed rock sources or from sandy aeolian material. The soils are on floodplains and alluvial fans, lacustrine basins, floodplains, dunes or sand sheets and have slopes of 0 to 30 percent.	1-6	0
Rositas-Orita-Carrizo-Aco (s1041)	Colorado River and California Zone (ca-02, ca-06, ca-07, ca-09, p-16, p-17, p-18, x15, x-16)	The soil association consists of very deep, well drained to excessively drained soils formed in sandy aeolian material, alluvium from mixed sources, and mixed igneous alluvium. The soils are on dunes and sand sheets, fan remnants and terraces, floodplains, fan piedmonts, and bolson floors. Slope ranges from 0 to 30 percent.	1-3, 5-6	0.14, 1.0
Rillito-Gunsight (s1140)	Colorado River and California Zone (p-17, p-18)	The soil association consists of very deep, somewhat excessively drained soils that formed in mixed alluvium. Gunsight soils are strongly calcareous. The soil association is on fan terraces or stream terraces. Slopes are predominantly 0 to 60 percent.	4L-6	0.5
Rositas-Dune land-Carsitas (s1136)	Colorado River and California Zone (ca-09, p-18, x-19)	The soil association consists of very deep, somewhat excessively drained soils formed in sandy aeolian material or alluvium from granitoid and/or gneissic rocks. The soils are on dunes and sand sheets, alluvial fans, fan aprons, valley fills, dissected remnants of alluvial fans and in drainageways. Slope ranges from 0 to 30 percent.	1, 2, 6	0
Vaiva-Quilotosa-Hyder-Cipriano-Cherioni (s1141)	Colorado River and California Zone (ca-09, p-18, x-19)	The soil association consists of very shallow and shallow, well drained to somewhat excessively drained soils formed in slope alluvium from granite and gneiss, and alluvium from rhyolite and related volcanic rocks. The soils are on hills and mountains, or fan terraces with slopes of 1 to 70 percent.	None available	0.5
Ligurta-Gunsight-Cristobal (s290)	Colorado River and California Zone (cb-10, i-08s, p-15e, x-11) Copper Bottom Zone (cb-03, cb-04, cb-05, cb-06, i-06, i-07, p09, p-11, p13, p-14, x08) East Plains and Kofa Zone (i-04, in-01, p-06) Quartzsite Zone (p-07, p08, qn-01, qn02, qs-01, qs02, i-05, x-05, x-06, x-07)	The soil association series consists of very deep, well drained to somewhat excessively drained, strongly saline soils that formed in fan alluvium weathered from a wide variety of rocks. The soils are on fan terraces or stream terraces with slopes of 0 to 60 percent.	5, 6	1

Soil Association	Draft EIS Segment Location	Description	Wind Erodibility Group	Shrink/ Swell Potential
Schenco-Rock outcrop-Laposa (s295)	Copper Bottom Zone (cb-01, cb-02, cb-03, cb-04, cb-05, cb-06, i-06, p-09, p10, p-11, p12, x-08) East Plains and Kofa Zone (i-04, in-01, p-06) Quartzsite Zone (qn-02, qs-01, qs-02, x-05)	The soil association consists of very shallow and shallow to moderately deep, well drained to somewhat excessively drained soils formed in slope alluvium from schist, granite, gneiss, rhyolite, and aeolian deposits. The soils are on hill slopes, hills and mountains and have slopes of 3 to 75 percent. Average annual precipitation is about 4 to 8 inches and the mean annual temperature is about 72 to 73 degrees Fahrenheit.	8	None available
Hyder-Coolidge-Cipriano-Cherioni (s289)	East Plains and Kofa Zone (d-01, i03, i-04, in01, p-03, p04, p-05, p06, x-01, x02, x-03, x04) Quartzsite Zone (x-05)	The soil association consists of very shallow and shallow to very deep, well drained to somewhat excessively drained soils that formed in fan or stream alluvium from rhyolite and related volcanic rocks. The soils are on fan terraces, stream terraces, mountains, and hills and have slopes of 0 to 70 percent.	None available	1
Momoli-Denure-Carrizo (s281)	East Plains and Kofa Zone (d-01, p01)	The soil association consists of very deep, well drained to excessively drained soils formed in fan alluvium and aeolian deposits and mixed igneous alluvium. The soils are on stream terraces and fan terraces, alluvia fans, relict basin floors, floodplains, fan piedmonts, and boldon floors and have slopes of 0 to 15 percent.	3, 5, 6	None available
Pahaka-Estrella-Antho (s299)	East Plains and Kofa Zone (d-01, i01, i-02, i-03, p-01, p-02, p03, p-04, p05, p-06, x01, x-02, x03, x-04)	The soil association consists of very deep, well drained to somewhat excessively drained soils that formed in mixed and stratified fan alluvium. The soils are on alluvial fans, terraces, and floodplains with slopes ranging from 0 to 5 percent.	3, 5	0.06, 0.08, 0.09
Rillito-Gunsight-Denure-Chuckawalla (s288)	East Plains and Kofa Zone (d-01, i01, i-02, i-03, p-01, p-06, x01, x-02, x04)	The soil association consists of very deep, well drained to somewhat excessively drained soils that formed in mixed alluvium. Gunsight soils are strongly calcareous. The soils are formed in alluvium from mixed sources and are on fan terraces or stream terraces and relict basin floors. Slopes are 0 to 60 percent.	3, 4L, 5, 6, 8	1
Rock outcrop-Quilotosa-Hyder-Gachado (s294)	East Plains and Kofa Zone (d-01, p01)	The soil association consists of very shallow and shallow, well drained to somewhat excessively drained soils that formed from granitic and metamorphic rocks or in alluvium from rhyolite and related volcanic rocks. The soils are on hills and mountains and have slopes of 1 to 70 percent.	None available	None available
Rock outcrop-Quilotosa-Momoli (s293)	East Plains and Kofa Zone (i-03, x04)	The soil association consists of very shallow and shallow to very deep, somewhat excessively-drained to excessively drained soils that formed from granitic and metamorphic rocks or in fan alluvium and aeolian deposits. The soils are on hills and mountains, stream terraces, and fan terraces and have slopes of 0 to 65 percent.	6	None available

Soil Association	Draft EIS Segment Location	Description	Wind Erodibility Group	Shrink/ Swell Potential
Rock outcrop-Lehmans-Gran (s316)	East Plains and Kofa Zone (i-04, p06) Quartzsite Zone (x-05)	The soil association consists of very shallow and shallow, well drained soils formed in slope alluvium-colluvium from volcanic rock. The soils are on pediments, hill slopes, and mountain slopes and have slopes of 1 to 65 percent.	None available	None available
Valencia-Estrella-Cuerda (s300)	East Plains and Kofa Zone (i-03, p04, p-05, p06, x-01, x-02, x-03, x04)	The soil association consists of very deep, well drained soils formed in recent alluvium and stratified mixed alluvium. The soils are on floodplains and alluvial fans and have slopes of 0 to 5 percent.	3, 5	0.06, 0.08, 0.09

6.3 Hydrology

The hydrologic setting of the region is extreme aridity and seasonally varying precipitation. The few perennial streams in the region arise mainly at higher altitudes, where there is more moisture and lower evaporation rates. As these streams descend to the desert plains, evaporative losses and seepage to the groundwater system greatly reduce or eliminate surface flows.

Water resources were considered a non-key resource in the Draft EIS. There is one perennial surface water and numerous ephemeral washes, canals, irrigation ditches, stock ponds, wetlands, floodplains, groundwater basins, wells, springs, and water rights in the Project area. Water resources in the Project area reflect the area's arid land where: channels are generally dry for long periods of time; streamflow results from high-intensity, short duration summer thunderstorms and less intense, longer duration winter storms; runoff is typically erratic and sediment-laden; springs are few and limited in extent; and wetlands and shallow groundwater are localized.

The intermittent movement of water from the higher elevations is towards the south and southeast towards the Gila River as well as north, northeast, and east towards the Colorado River. The Colorado River moves water from north to south through the Project area.

6.4 Management Techniques

6.4.1 Soils

6.4.1.1 Topsoil

Clearing of vegetation and topsoil would be required. These activities could result in newly exposed, disturbed soils that could be subject to topsoil loss and degradation. Indirect impacts associated with topsoil removal may include invasive plant colonization, soil erosion, and reduction of soil water retention. Preservation of topsoil is important for successful reclamation such as re-establishment of native vegetation, minimization of soil erosion, and retained or improved soil water retention. Topsoil that is used to reclaim disturbed areas immediately after construction activities would begin to revert to more natural conditions.

Temporary use areas such as staging/storage and concrete batch plants would be located in areas of lesser ecological impact and previously disturbed areas to the extent practicable. This approach would minimize adverse impacts to topsoil. Some temporary use areas may be necessary in previously undisturbed areas. In these cases, proactive measures would be taken to preserve the local topsoil and return the sites to their pre-disturbance conditions following completion of construction activities. For all temporary use areas, a layer of topsoil would be initially removed from the area, in conformance with the Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

In general, the need for soil removal from temporary disturbance areas is anticipated to be minimal and would ultimately depend upon local site conditions at the selected area. Limited soil removal may be required for temporary disturbance areas based on geologic conditions for the following scenarios:

- Areas with unconsolidated soils, which could not support the types of vehicles required to be used, soil types would typically include sandy soils. In this scenario, a temporary rock base may be installed to support vehicle traffic, and one to two inches of sandy soil may be temporarily displaced when the temporary rock base is removed.

- Areas with soils utilized for agricultural activities. In this scenario, topsoil may be removed from sites where temporary construction activities would occur and stored in an area where contamination would be limited. Typically, three to six inches of fertile topsoil may be temporarily displaced during construction activities.

- Areas where uneven soils are present and not able to support construction of transmission structures. In this scenario, grading of 0.5 to three feet of topsoil may be required where terrain would not allow a usable working pad. Soil would be temporarily displaced, then graded and contoured once construction is complete.

- Areas where terrain may cause erosion during construction. In this scenario, topsoil may be disturbed to place erosion control measures in place during construction and through site reclamation.

6.4.1.2 Topsoil Stripping

Topsoil stripping may be necessary where land is to be disturbed due to construction activities. The minimal amount of topsoil will be removed or stripped to accommodate construction activities. Stockpiling of topsoil may be necessary until construction activities are completed and the topsoil can be re-applied. Freshly stripped and placed topsoil retains more viable seed, micro-organisms and nutrients than stockpiled soil. Vegetation establishment is generally improved by the direct return of topsoil and is considered a BMP for topsoil management.

A general procedure for soil handling during topsoil stripping is presented below and includes soil handling measures which optimize the retention of soil characteristics (in terms of nutrients and micro-organisms) and favorable to plant growth for natural regeneration (e.g., seed banks).

- Topsoil will be recovered using appropriate equipment. Depending on compaction and recovery rates, deep ripping may be required to maximize topsoil recovery with care taken not to mix topsoil with subsoil.

- During the stripping process there may be some unexpected changes in the depth and the nature of the soil. Where practical the inclusion of obviously poorer quality material will be avoided such as subsoil clay with mottles, saline material and material dominated with stones.

- Contractors bringing machinery onto the site will be required to present such machinery in a weed-free condition. Noxious weed species management techniques are included in Appendix F-7 – Vegetation Management Plan.

- Disturbance areas will be stripped progressively, as required, in order to reduce erosion and sediment generation, to reduce the extent of topsoil stockpiles and to utilize stripped topsoil as soon as possible for rehabilitation. Rehabilitation of disturbed areas, such as roads and embankments, will be undertaken as soon as practicable after these structures are completed or as areas are no longer required for operational purposes.

Vegetation cover can make the removal of specific topsoil depths difficult. Excessive quantities of vegetative matter in long-term stockpiles may promote chemical and biological degradation of the seed reserves that are a future source of natural regeneration during rehabilitation. Therefore, prior to stripping, vegetation will be removed or reduced by clearing. All cleared vegetative material may be mulched during reclamation activities (see Appendix L-1 Reclamation, Vegetation, and Monitoring Plan), or if suitable, placed as habitat within the proposed areas. In general, the requirement to clear larger vegetation (shrubs and trees) within the disturbance areas is comparatively small due to the relatively sparse vegetation cover in the Project area's arid environment. If feasible, cleared vegetation may be chipped to provide a cost-effective mulch and soil amendment.

6.4.1.3 Topsoil Stockpiling

The following topsoil stockpiling management measures aim to conserve topsoil in a condition as close as possible to its original state. Stockpile locations will be subject to the following management actions.

- Grazing stock, machinery, and vehicles will be excluded.

- Overland water flow onto or across stockpile site will be kept to a practical minimum.

- Where possible, stockpile sites will be selected to maximize protection from the prevailing winds, particularly if the material is friable in nature (e.g., sand or silt). Establishing stockpiles within an area protected from the prevailing winds or in windrows, may be appropriate for these circumstances.

- All long-term topsoil material stockpiles will be located outside the active construction pathways and away from drainage lines.

- Drainage from higher areas will be diverted around stockpile areas to prevent erosion.
- As required, sediment controls will be installed downstream of stockpile areas to collect run-off.
- Topsoil stockpile locations will be strategically located to assist the sequence of future rehabilitation.

Separate stockpiles for topsoil and subsoil will be formed in low mounds of minimum height (10 feet maximum) and maximum flat surface area, consistent with the storage area available. Stockpiling using a greater number of low mounds or windrowing berms rather than stockpiling, is preferable. Topsoil stockpiles will be clearly signposted for easy identification and to avoid any inadvertent losses.

Stockpiling of topsoil should preferably be kept to the shortest possible period. Dispersive clays (Sodosol and Vertosols on sandy alluvial plains) should not be stockpiled over any wet season without erosion or sediment control measures being used.

In general, topsoil stockpiles will be managed so that:

- Storage time is minimized.
- Sodosols will be stockpiled separately (if they are to be used in rehabilitation).
- Locations are accurately surveyed, and data is recorded relating to the soil type and volume.
- Stockpiles are located outside of dry washes and floodplains.
- Stockpiles are located in areas away from drainages or windy areas in order to minimize the risk of soil and wind erosion.
- Appropriate weed control strategies are implemented particularly for any noxious and invasive weeds. Immediate revegetation will provide vegetative competition to assist with the control of undesirable plant species.
- Where practical and applicable, stockpiles will have sediment control measures installed.
- Stockpiles are delineated to avoid vehicle and pedestrian traffic and accidental removal/disturbance.
- Topsoil stockpiles possess a suitable embankment grade to limit the potential for erosion of the outer pile face.

In addition to the above, adherence to the following environmental protection measure would minimize damage to topsoil.

BMP-SOIL-03: (Compliance with CMA-LUPA-BIO-7) - Covers for topsoil stockpiles would be of materials resistant to damage and/or degradation from exposure to ultraviolet light and other elements and would be replaced (as needed) if they deteriorate, become worn, or damaged.

BMP-BIO-15: Reclamation and Restoration (Compliance with CMA-LUPA-BIO-7) – As a part of the Habitat Restoration and Monitoring Plan, the soil horizons would be stored separately for the areas where the success of restoration could be crucial for rare plant species.

6.4.1.4 Topsoil and Subsoil Erosion Control

Erosion takes many forms owing to the effects of climate, topography, land use, groundcover, and the erodibility of the soil type. The main agent of erosion in the Project area is water resulting in rain splash erosion, rill erosion, tunnel erosion, gully erosion, and sheet erosion. Wind is a secondary agent of erosion. Soil characteristics identified in Table G-3-1 suggest that disturbed areas would experience low to high erosion potential either by water and/or wind. Sediment redistribution of the soil resource as a result of wind and water erosion could cause damages to Waters of the United States, prime farmlands, and air quality.

Areas located on steep slopes are inherently susceptible to erosion. The majority of Project reclaimed areas would incorporate a flat to gently sloped surface during regrading and reclamation activities. Potential for erosion would be increased on disturbed areas after soil salvage operations due to removal of the vegetative cover and the loss of surface soil structure. Cutting and removal of vegetation may occur; however, where practicable, downed vegetation and undisturbed low vegetation would be left in place within the disturbance areas to serve as soil protection and erosion control. Vegetation would only be cleared to the extent necessary, minimizing impacts to soil resources.

Soil erosion after redistribution on re-graded sites would also have a greater potential until the soil is stabilized by successful revegetation. Windblown dust would result from the disturbance of fine textured soils during construction and reclamation activities through the completion of the Project.

Progressive rehabilitation will be undertaken to stabilize disturbed areas as quickly as practical and to limit erosion. Erosion and sediment control measures will be employed as part of the SWPPP for this Project.

The design parameters for the construction of erosion control work will be in accordance with established principles for engineering and soil conservation methods. A number of variables must be considered, such as time of concentration, rainfall intensity, erosivity, gradient, scour velocities, and flow estimations. The erosion control options that may be employed are summarized in Table G-2-5.

TABLE G-2-5 POTENTIAL TOPSOIL EROSION CONTROL MEASURES

Area	Control Measure
Erosion control and cleared land	Restrict clearing to areas essential for the work. Windrow vegetation debris along the contour. Minimize length of time soil is exposed. Divert run-off from undisturbed areas away from the work. Direct run-off from cleared areas to sediment control devices.
Exposed subsoils	Minimize length of time subsoil is exposed. Direct run-off from exposed areas to sediment control devices. Use erosion control measures such as those described above and below.

Area	Control Measure
Temporary soil stabilization	Preservation of existing vegetation, hydraulic mulch, hydroseeding, soil binders, straw mulch, geotextiles, erosion control blankets and mats, wood mulching, earth dikes, drainage swales, and ditches, outlet protection/velocity dissipation devices, and slope drains.
Temporary sediment control	Silt fence, desilting basin, sediment trap, check dam, fiber rolls, gravel bag berm, sandbag barrier, straw bale barrier.
Wind erosion control	Water application or other dust palliatives.
Non-stormwater management	Temporary stream crossings, vehicle and equipment cleaning, streambank stabilization, water conservation, and techniques for concrete and other construction activities.

In addition to the above, adherence to the following environmental protection measure would minimize soil erosion.

APM-WQ-01: SWPPP Development and Implementation – Following Project approval, DCRT or their contractor would prepare and implement a SWPPP or an amendment to an existing SWPPP to minimize construction impacts on surface water and groundwater quality. Implementation of the SWPPP would help stabilize graded areas and reduce erosion and sedimentation. The Plan would designate BMPs that would be adhered to during construction activities. Erosion and sediment control measures, such as straw wattles, covers, and silt fences, would be installed prior to ground disturbance, based on the anticipated volume and intensity of precipitation, the nature of stormwater runoff in the Project Area, and the soil types within the Project Area. Suitable stabilization measures would be used to protect exposed areas during construction activities, as necessary and final stabilization would be completed when construction materials, waste, and temporary erosion and sediment control measure have been removed. During construction activities, measures would be implemented to prevent contaminant discharge from vehicles and equipment, including complying with the Spill Prevention, Control, and Countermeasures requirements in 40 CFR Part 112. The Project SWPPP would include erosion control and sediment transport BMPs to be used during construction. BMPs, where applicable, would be designed by using specific criteria from recognized BMP design guidance manuals. Erosion-minimizing efforts may include measures such as the following:

- Defining ingress and egress within the Project site.
- Implementing a dust control program during construction.
- Properly containing stockpiled soils.

Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized (see SWPPP, Section 3). The Plan would include the following components, in accordance with ADEQ requirements for coverage under the General Permit:

- Stormwater team qualifications and contact information.
- Identification of operators.

- Nature of construction activities.
- Sequence and estimated dates of construction activities.
- Site description.
- Site map(s).
- Receiving waters.
- Control measures to be used during construction activity.
- Summary of potential pollutant sources.
- Use of treatment chemicals.
- Pollution prevention procedures, including spill prevention and response and waste management procedures.

APM-GEO-01: Erosion and Sedimentation (Compliance with CMA/LUPA-BIO-9 and CMA/LUPA-SW-8) – DCRT would implement a SWPPP for the Project. A monitoring program would be established to ensure that the prescribed BMPs are followed throughout transmission line construction. Examples of these BMPs include:

- Preparation, training, and maintenance for clear work-site practices, tracking controls, and materials management to minimize the direct work impacts on soil and erosion.
- Installation of temporary silt fences and other containment features (including gravel bags and fiber rolls) surrounding work areas to prevent the loss of soil during rain events and other disturbances.
- Utilization of storm drain inlet protection, including sediment filters and ponding barriers, to retain sediments on site and prevent excess discharge into storm drains.
- Implementation of soil erosion controls, including preservation of existing vegetation, temporary soil stabilization through hydroseeding, mulching, and other techniques.
- Stockpiling soils at least 100 feet from drainages to the extent possible. If soil stockpiles are within 100 feet from a drainage proper measures would be implemented such as soil tackifiers, straw wattles around the pile, and/or covering the stockpile.

APM-BIO-14: Minimizing Vegetation Clearing – In areas with suitable topography, minimal or no vegetation clearing and soil disturbance would be conducted for site access and construction (i.e., overland driving/overland access). Overland driving/overland access would be used in areas that support the necessary construction equipment. Upgrading of existing access roads and construction of new access roads would be implemented as necessary for the safe construction activities.

BMP-BIO-42: Dead and Downed Wood (Compliance with CMA/LUPA-BIO-VEG-2) – Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.

Only BLM specified non-toxic substances approved by state and federal regulations shall be used for dust control. The use of any chemical dust control measures on or near any area that may wash into or blow onto Metropolitan Water District of Southern California fee property or agricultural lands participating in the Fallowing Program will be conditioned on the approval of Metropolitan or its designated representative.

6.4.1.5 Topsoil Application

The application procedure is essentially the reverse of the stripping procedure. First, the overburden materials will be profiled to the design slopes, then if suitable, subsoil should be placed in position, followed by the topsoil. All soils will be spread uniformly and evenly across the site to the extent practicable. The following measures may be used to minimize the loss of topsoil material that is re-spread on reclaimed areas and to promote successful vegetation establishment:

- Minimize the length of time that topsoil material is to be stockpiled.
- During removal of soils from the stockpiles, take care to minimize structural degradation of the soils.
- Re-spread topsoil material in even and uniform layers at a thickness appropriate for the landform and land capability of the area to be reclaimed to the extent practicable.
- Contour and leave in a soil roughened state to encourage rainfall infiltration and minimize run-off.
- Soon after re-spreading, seed with appropriate species to establish revegetation cover as early as possible.
- Construct collection drains and sedimentation dams to collect run-off and remove suspended sediment.
- Regularly inspect and maintain reclaimed areas to facilitate sediment and erosion control and revegetation success.
- Reclaimed areas of returned topsoil will be ripped, with care taken not to bring subsurface materials to the surface (e.g., large rocks). Ripping should only be sufficient to allow equipment to work efficiently. Ripping along slopes should be along contour.
- Regularly inspect rehabilitated areas for noxious and invasive weeds and control significant infestations by procedures outlined in the Vegetation Management Plan (Appendix F-7).

6.4.1.6 Biological Crusts

One of the primary impacts of concern for construction is disturbance to soil biological crusts. It is expected that soils within the ROW have the ability to support soil biotic crust; therefore, it is expected that disturbance caused by excavation and compaction during construction may directly affect biological soil crusts. Disturbance to fragile biological crusts could increase wind and water erosion and delay reestablishment of plant communities post construction. Clearing and grading of the ancillary facilities, structure work areas, and access roads could also adversely affect any soil biological crusts in the immediate vicinity. Large portions of the Project have been routed to parallel existing linear infrastructure, thus reducing impacts to previously undisturbed soils.

BMP-SOIL-07: (California only) (Compliance with CMA/LUPA-SW-10) - To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.

6.4.1.7 Desert Pavement

Desert pavement is a natural mosaic of closely-packed pebbles, cobblestones, and boulders commonly found in a desert where the wind has swept away all smaller particles. The removal of small particles by wind does not continue indefinitely, because once the pavement forms, it acts as a barrier to resist further erosion.

To the extent feasible, construction activities will avoid disturbance of desert pavements. Disturbance areas throughout the Project will be minimized during construction to reduce impacts to desert pavement. All vehicular traffic and foot traffic will be restricted to the designated limits of the project except in the case of physical or safety constraints. Prior to construction, appropriate flagging or fencing will delineate work area boundaries. Damage to desert pavements will be avoided by selecting and using construction equipment that is appropriately sized for each portion of the work. Use of larger and heavier equipment than needed would result in larger areas of damage and greater compaction and shearing disturbance of soils. It would produce greater trauma to plants and other habitat components.

In addition to the above, adherence to the following environmental protection measures would minimize impacts to desert pavement.

BMP-SOIL-05: (California only) (Compliance with CMA/LUPA-SW-9) - Desert pavement and desert varnish in activity areas in California shall be assessed by qualified geological or biological monitors prior to construction. If disturbance from an activity is likely to exceed 10 percent of the desert pavement and/or desert varnish identified within the activity boundary, the BLM would determine whether the erosional and ecologic impacts of exceeding the 10 percent cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement and/or desert varnish disturbance.

6.4.1.8 Soil Productivity

Direct impacts to soil resources as a result of construction activities include the loss of soil productivity due to the removal of soils during new surface disturbance. There would be long-term loss of soil productivity on acres not reclaimed during the life of the Project. Other soils disturbed but reclaimed would likely have long-term loss of soil productivity

that would improve over time because of reclamation efforts. Following topsoil management techniques described in Section 6.4.1.1 – Topsoil will retain and/or improve soil productivity. Soils will be reclaimed as described in Appendix L-1 – Reclamation, Vegetation, and Monitoring Plan.

In addition to the above, adherence to the following environmental protection measure would minimize the loss of soil productivity or retain soil productivity.

BMP-SOIL-01: (California only) - During reclamation and revegetation efforts, a BLM soil scientist and/or botanist review plans and approve, as appropriate, to determine type and location of any scarification.

6.4.1.9 Compaction

Direct physical impacts to soil resources include compaction and crushing of the topsoil by equipment during salvage, stockpiling, construction, and reclamation activities. Potential physical effects of soil compaction may include reduced permeability and porosity, damage to microbiotic crusts, increased bulk density, decreased available water holding capacity, and increased erosion potential. With adherence to the APMs and BMPs listed below, physical effects of soil compaction would be reduced.

BMP-BIO-38: Use of State-of-the-Art and Commercially-Available Technology (Compliance with CMA - LUPA-BIO-9 and 15) – Use state-of-the-art, commercially-available construction and installation techniques, as approved by BLM, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

BMP-SOIL-02: (California only) – During reclamation and revegetation efforts, the BLM would review plans and approve, as appropriate, to determine where soil compaction would be appropriate, to avoid potential adverse conditions created by compaction.

6.4.1.10 Active Sand Dune Habitat

Impacts to areas of wind-blown sand would range from no impacts, if avoided, to long-term negligible to minor impacts to dune habitat because of the intermittent nature of the structure foundations, and the spacing between structures.

6.4.1.11 Soil Hazards

Project-related construction (and, to a far lesser extent, operation) fugitive-dust emissions could include emissions of spores from a soil dwelling fungus (*Coccidioides immitis* and *C. posadasii*), which occurs across arid areas in the southwestern United States and may occur in the Project area. When soil is disturbed by activities such as grading, digging, vehicle operation on dirt roads, or high winds, the fungal spores can become airborne and potentially inhaled, which can result in what is known as “Valley Fever.” There is a risk of Valley Fever and exacerbation of spore emissions. Project construction conducted in a way that minimizes fugitive-dust emissions would minimize emissions of the fungal spores. The following environmental protection measures would minimize the risk of soil hazards.

APM-AQ-01: Fugitive Dust (Compliance with CMA/LUPA-AIR-01, 02, 03, and 05; CMA/LUPA-BIO-13) – The following control measures would be implemented, as

applicable, to reduce PM10 and PM2.5 emissions during construction, in conjunction with an Fugitive Dust Control Plan and Construction Emissions Mitigation Plan for the Project (Appendix H-1).

Basic Control Measures

The following measures would be implemented as applicable at all construction sites:

- Water active construction areas sufficiently to minimize fugitive dust.
- The use of one or more water trucks that would water access roads daily as needed to control dust throughout the construction period.
- Cover trucks hauling soil, sand, and other loose materials and require all trucks to maintain at least six inches of freeboard.
- Pave, apply water, or apply nontoxic soil stabilizers as applicable on for all unpaved access roads, parking areas, and staging areas at construction sites to minimize fugitive dust.

Enhanced Control Measures

In addition to the “basic control measures” listed above, the following control measures may be implemented at all construction sites greater than four acres:

- Water, hydroseed, or apply nontoxic soil stabilizers to inactive construction areas to minimize fugitive dust.
- Enclose, cover, water, or apply nontoxic soil binders to exposed stockpiles.
- Limit traffic speeds on unpaved roads.
- Replant vegetation in disturbed areas as quickly as possible, consistent with seasonal survival considerations.

Optional Control Measures

Depending on the extent of dust generation, implementation of the following optional control measures may occur at larger construction sites, near sensitive receptors (residences or other occupied buildings, parks, or trails within 1,000 feet of earthmoving operations that are substantial; for example, more than excavation for tower foundations), or in situations which for any other reason may warrant additional emissions reductions:

- Install wheel washers for all existing trucks or wash off the tires or tracks of all trucks and equipment leaving the site.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour.

Limit the area subject to excavation, grading, and other construction activity at any one time.

BMP-AQ-01: Dust Palliatives (Compliance with CMA-LUPA-BIO-6 and 13) – Dust palliatives would be applied, in lieu of water, to inactive construction areas (disturbed lands or soil stockpiles that are unused for 14 consecutive days). Dust palliatives would be chosen by the Dust Control Site Coordinator and or construction contractor. Dust palliatives would be environmentally safe; comply with federal, state, and local regulations; and would not produce a noxious odor or contaminate surface water or groundwater and, therefore, would not pose runoff concerns during rain events. Application rates for dust palliatives would follow the manufacturer's recommendations. Material Safety Data Sheets for any palliatives would be available on site and provided to the BLM 14 days prior to use.

APM-AQ-04: Minimize Potential Emission of Naturally Occurring Coccidioides immitis Fungal Spores – In addition to the AQ-01 measures to control general fugitive dust emissions, the following measures would be implemented prior to and during construction to create awareness of the risks and inhalation prevention procedures with respect to Coccidioides immitis fungal spores, which are naturally present in soils in the desert southwest, and inhalation of which can cause valley fever:

- Prior to construction, and for each phase of construction, implement an Environmental Awareness Program for workers to ensure they are informed of the risks of contracting valley fever and the protective measures needed to minimize personal exposure to fugitive dust, as well as to minimize possible dust exposure of nearby residents and the public.

- Inform workers of the possible symptoms of valley fever and encourage them to seek medical treatment if these symptoms manifest.

APM-HAZ-01: Hazardous Substance Control and Emergency Response (Compliance with CMA/LUPA-SW-6 and SW-7) – DCRT would implement its hazardous substance control and emergency response procedures as needed in conjunction with a Hazardous Substance Control and Containment Plan and Emergency Response Plan for the Project. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it were necessary to store chemicals on site, they would be managed in accordance with all applicable regulations.

Material safety data sheets would be maintained and kept available on site, as applicable. Project construction would involve soil surface blading/leveling and excavation. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil would be tested and, if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to:

- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.
- Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected; work would be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

6.4.2 Hydrology

6.4.2.1 Sediment Loading and Movement

Sediment loading is the movement of organic and inorganic particles by water. In general, the greater the flow, the more sediment that will be conveyed. Water flow can be strong enough to suspend particles in the water column as they move downstream, or simply push them along the bottom of a waterway. Transported sediment may include mineral matter, chemicals and pollutants, and organic material. Soil disturbance activities could increase sediment loading and movement in Project waterways, which could subsequently reduce both floodplain capacity and energy dissipation during a flood event. Soil erosion near waterways may also increase due to soil disturbance activities. Soil erosion is described in Section 6.4.1.4. Adherence to the following environmental protection measures will eliminate and/or reduce sediment loading and movement in Project waterways.

APM-WQ-03: Vehicles and Equipment Fueling and Maintenance – Vehicle and equipment fueling and maintenance operations would be conducted in designated areas only; these areas would be equipped with appropriate spill control materials and containment.

BMP-WQ-04: (California only): Non-petroleum Dust Palliatives – Palliatives used for dust control would be non-petroleum products in addition to nontoxic, as specified in AQ-01.

BMP-WQ-07: Structures in Floodplains – No permanent structures would be placed in floodplains that are narrower at the ROW crossing than the typical span width of 1,200 feet (i.e., it is assumed that such floodplains could be spanned and avoided).

BMP-BIO-19: Colorado River (Compliance with CMA/LUPA-SW-13 and 16) – In the vicinity of the Colorado River, existing structure spacing and conductor heights would be matched to the greatest extent practical to reduce the potential for bird collisions with the power line. The transmission line would span the Colorado River and the minimum number of structures possible would be located within the undeveloped floodplain. The term “vicinity of the Colorado River” is defined to mean the river crossing, floodplain, and associated agricultural lands. In these areas, conductor bundles would be in a horizontal, parallel configuration, and match existing structure spacing and conductor heights to the greatest extent practical to reduce the potential for bird collisions with the power line. No guyed structures would be used at these locations.

CMA-LUPA-SW-1: (California only): Soil and Water General – Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity-specific National Environmental Policy Act analysis.

CMA-LUPA-SW-2: (California only): Soil and Water General – Buffer zones, setbacks, and activity limitations specifically for soil and water (ground and surface) resources will be determined on an activity/site-specific basis through the environmental review process, and will be consistent with the soil and water resource goals and objectives to protect these resources. Specific requirements, such as buffer zones and setbacks, may be based, in part, on the results of the Water Supply Assessment defined below. In general, placement of long-term facilities within buffers or protected zones for soil and water resources is discouraged, but may be permitted if soil and water resource management objectives can be maintained.

CMA-LUPA-SW-14: (California only): Surface Water – All relevant requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be complied with.

6.4.2.2 Alterations

Crossing of ephemeral washes by construction equipment may alter surface or subsurface water movement. Restoring disturbed areas to their pre-construction conditions (contours, hydrology, segregation, and restoration of topsoil), would eliminate or reduce potential negative impacts during revegetation efforts (see Appendix L-1 of the POD – Reclamation, Vegetation, and Monitoring Plan). Jurisdictional (Waters of the United States) washes will be identified by field surveys and Project activities will result in no fill at these locations and channel banks will be retained or returned to pre-construction conditions.

BMP-WQ-06: Avoidance of Hydrologic Alterations (Compliance with CMA/LUPA-SW-21 and 22) – Considerations shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they would dissipate by percolation into the landscape. All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the Project area, or specific mitigation measures shall be implemented that would minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS and other agencies, as appropriate.

6.5 Other Environmental Protection Measures

Other specific stipulations and methods presented in Appendix L-1 of the POD – Reclamation, Vegetation, and Monitoring Plan, Appendix F-7 – Vegetation Management Plan, I-2 – Spill Prevention, Control, and Countermeasures Plan, and F-2 – Plant and Wildlife Species Conservation Measures Plan contain environmental protection measures that will result in the protection and minimization of impacts to soils and hydrologic resources. The following environmental protection measures will also minimize the potential impacts to soils and hydrology.

APM-WQ-02: WEAP Development and Implementation – The Project's worker environmental awareness program would communicate environmental issues and appropriate work practices specific to this Project. This awareness would include spill prevention and response measures and proper BMP implementation. The training would emphasize site-specific physical conditions to improve hazard prevention (such as identification of flow paths to nearest water bodies) and would include a review of all site-specific water quality requirements, including applicable portions of erosion control and sediment transport BMPs, Health and Safety Plan, and Hazardous Substance Control and Emergency Response Plan.

CMA-LUPA-SW-3: (California only): Soil and Water General – Where a seeming conflict between CMAs within or between resources arises, the CMA(s) resulting in the most resource protection apply.

CMA-LUPA-SW-4: (California only): Soil and Water General – Nothing in the "Exceptions" below applies to or takes precedence over any of the CMAs for biological resources.

CMA-LUPA-SW-12: (California only): Surface Water – Except in Development Focus Areas, exclude long-term structures in, playas (dry lake beds), and Wild and Scenic River corridors, except as allowed with minor incursions (see definition in the Glossary of Terms).

BMP-SOIL-06: (California only) (Compliance with CMA/LUPA-SW-11) - Side-casting of soil during road construction shall be avoided.

APM-BIO-15: Reclamation and Restoration (Compliance with CMA/LUPA-BIO-7 and CMA/LUPA-BIO-8) – A Habitat Restoration and Monitoring Plan would be developed, approved by BLM, and implemented for construction and operation of the Project. Revegetate all sites disturbed during construction that would not be required for operation of the transmission line, and restore disturbed areas to the extent practicable, given the arid desert environment. The Plan would describe in detail methods for surveying and characterizing vegetation in disturbed areas before construction; topsoil salvage and management, erosion control, post-construction recontouring and site preparation, seeding and planting, and post-construction watering, monitoring, and remediation. It would be designed to reduce impacts on special status species to the extent practicable.

BMP-BIO-38: Use of State-of-the-Art and Commercially-Available Technology (Compliance with CMA/LUPA-BIO-15) – Use state-of-the-art, commercially-available construction and installation techniques, as approved by BLM, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

BMP-AES-09: Site Linear Facilities along Natural Lines within the Landscape – Siting of facilities, especially linear facilities (e.g., transmission lines, pipelines, roads), should take advantage of natural lines within the landscape (e.g., natural breaks in the landscape topography, the edges of clearings, or transitions in vegetation). Siting of facilities on steep slopes should be avoided. Siting linear facilities along naturally occurring lines in the landscape can reduce apparent contrast through repetition of the line element or through combination of multiple line elements into a single line element. Facilities sited on steep slopes are often more visible (particularly if either the Project or viewer is elevated); they may also be more susceptible to soil erosion, which could also contribute to negative visual impacts.

6.6 Monitoring

Monitoring of soil erosion control measures will continue until reclamation efforts are considered complete as outlined in Appendix L-1 – Reclamation, Vegetation and Monitoring Plan, and accelerated erosion has been controlled. The following provides guidance for monitoring and environmental protection measures.

APM-WQ-01: SWPPP Development and Implementation (Portions) – Erosion control measures identified would be installed in an area before construction begins and would be properly maintained until construction is complete and final stabilization begins. Temporary measures such as silt fences or wattles, intended to minimize sediment transport from temporarily disturbed areas, would remain in place until disturbed areas have stabilized.

6.7 Operation and Maintenance

After construction and reclamation, monitoring the soil erosion control measures will continue on an annual basis during the operation and maintenance phase until affected soils and hydrology have been stabilized. Monitoring should continue until reclamation efforts are considered complete.

7 References

Bureau of Land Management (BLM). 2001. Handbook H-4810-1 Rangeland Health Standards. Available at https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_h4180-1.pdf. Accessed December 2018.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 p., plus appendices.

United States Army Corps of Engineers (USACE). 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

_____. 2008b. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. U.S. Army Engineer Research and Development Center. Hanover, NH.

United States Environmental Protection Agency (USEPA). 1972. Clean Water Act (CWA) 33 United States Code [U.S.C.] §1251 et seq., formerly the Federal Water Pollution Control Act of 1972.

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Appendix 2C Summary Applicable CMAs and Compliance

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2C.1 LUPA WIDE CMAS

2C.1.1 Biological Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Biological Resources	LUPA-BIO-1	Conduct a habitat assessment (see Glossary of Terms) of Focus and BLM Special Status Species' suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms) for Focus and BLM Special Status Species. If required by the relevant species-specific CMAs, conduct any subsequent protocol or adequate presence/ absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species-specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat.	Section 3.4 Section 4.4	Compliance with this CMA is achieved through data contained in the Biological Resources Technical Reports (including rare plant studies), which is incorporated into Chapter 3 and Appendix 3 of this EIS, and analysis presented in Chapter 4 and Appendix 4. Additional preconstruction studies along the Selected Alternative route in California would be undertaken for rare plants (APM-BIO-24 and BMP-BIO-31), protected plants (BMP-BIO-11), rare vegetation alliances (APM-BIO-24), riparian and xeroriparian habitat (APM-BIO-13), Mojave fringe-toed lizard (APM-BIO-25 and BMP-BIO-49), desert tortoise (APM/BMP-BIO-23), burrowing owl (APM-BIO-25 and APM-BIO-30), nesting migratory birds (APM-BIO-30), dune vegetation (BMP-BIO-53) and sand transport corridors (BMP-BIO-54).
		• BLM will not require protocol surveys in sites determined by the designated biologist to be unviable for occupancy of the species, or if baseline studies inferred absence during the current or previous active season.		

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	Utilize the most recent and applicable assessment protocols and guidance documents for vegetation types and jurisdictional waters and wetlands that have been approved by BLM, and the appropriate responsible regulatory agencies, as applicable.		
	LUPA-BIO-2	Designated biologist(s) (see Glossary of Terms), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-02 and BMP-BIO-02.
Resource Setback Standards	LUPA-BIO-3	Resource setbacks (see Glossary of Terms) have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA. Allowable minor incursions (see Glossary of Terms), as per specific CMAs do not affect the following setback measurement descriptions. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:	Section 4.4.7 Appendix 2A	The CDCA Plan would be further amended to eliminate this setback for sensitive plants for the Project. Compliance with this CMA is achieved, in part, through application of APM-BIO-04, APM-BIO-11, BMP-BIO-31, BMP-BIO-50, and BMP-BIO-52.
		• The edge of each of the DRECP desert vegetation types, including but not limited to those in the riparian or wetland vegetation groups (as defined by alliances within the vegetation type descriptions and mapped based on the vegetation type habitat assessments described in LUPA-BIO-1).		
		• The edge of the vegetation extent for specified Focus and BLM sensitive plant species.		
		• The edge of suitable habitat or active nest substrates for the appropriate Focus and BLM Special Status Species.		

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Seasonal Restrictions	LUPA-BIO-4	For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-20, BMP-BIO-31, and BMP-BIO-32.
		Species-specific seasonal restriction dates are described in the applicable CMAs.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-32.
		Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction. The proposed installation and use of a visual barrier to avoid a species seasonal restriction will be analyzed in the activity/project specific environmental analysis.	Appendix 2A Appendix 4	The use of visual barriers is allowed for nesting migratory birds when included in the nest management plan (Appendix 2B) in accordance with AMP BIO-20 and BMP-BIO-29.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Worker Education	LUPA-BIO-5	All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:	Appendix 2, 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-01. Required worker training would be Included as a part of the Environmental Health and Safety Plan (Appendix 2B).
		• Site-specific biological and nonbiological resources.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-01.
		• Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-01.
		• The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-01.
		• Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-01.
		• Measures that personnel can take to promote the conservation of biological and nonbiological resources.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-01.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Subsidized Predators Standards	LUPA-BIO-6	Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites including the following:	Appendix 2A Appendix 4	
		• Common Raven management actions will be implemented for all activities to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.	Section 4.4.4 Appendix 2A Appendix 4	Compliance with this CMA is achieved through application of AMP BIO-05, AMP BIO-06, and BMP-BIO-28.
		• The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife and wildlife predators.	Appendix 2A Appendix 4	Compliance with this CMA is achieved through application of BMPs AQ-01 and BIO-34.
		• Following the most recent national policy and guidance, BLM will take actions to not introduce, dispose of, or release any non-native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies containing native species.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12 and BMP-BIO-31.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	All activity work areas will be kept free of trash and debris. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-06.
		• In addition to implementing the measures above on activity sites, each activity will provide compensatory mitigation that contributes to LUPA-wide raven management.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-28.
Restoration of Areas Disturbed by Construction Activities but Not Converted by Long-Term Disturbance	LUPA-BIO-7	Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below:	Section 4.4.5 Appendix 2A Appendix 4	Compliance with this CMA is achieved through application of APM-BIO-15.
		• Implement site-specific habitat restoration actions for the areas affected including specifying and using:	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		o The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed)	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	o Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities)	Section 4.3.4 Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-15 and BMP-SOIL-3.
		o Equipment	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		o Timing (e.g., appropriate season, sufficient rainfall)	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		o Location	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		o Success criteria	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		o Monitoring measures	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		o Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		• Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site.	Section 4.4.7 Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-11, APM/BMP-BIO-15 and BMP-BIO-41.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
General Closure and Decommissioning Standards	LUPA-BIO-8	All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following:	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		• Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measurable criteria).	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		• Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
		• Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species.	Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-11, APM/BMP-BIO-15.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-15.
Water and Wetland Dependent Species Resources	LUPA-BIO-9	Implement the following general LUPA CMA for water and wetland dependent resources: • Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-08, APM-BIO-07, APM-BIO-10, and APM-HAZ-01.
		o On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.	Appendix 2A	Compliance with this CMA is achieved through application of APM-HAZ-01.
		o Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-08 and APM-HAZ-01.
		o Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-08 and BMP-HAZ-03.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-10, BMP-BIO-38, and APM-WQ-01.
		o Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.	Appendix 2A	Compliance with this CMA is achieved through application of APM-WQ-01.
		o Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.	Appendix 2A	Compliance with this CMA is achieved through application of APM-WQ-01.
		o Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.	Appendix 2A	Compliance with this CMA is achieved through application of APM-WQ-01.
		o Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.	Appendix 2A	Compliance with this CMA is achieved through application of APM-WQ-01. The CA portion of the Project Area is scheduled for soil survey in the near future. Updated soils data would be incorporated in the EIS when available and analysis and BMPs updated as needed.
		o Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.	Appendix 2A	Compliance with this CMA is achieved through application of APM-WQ-01.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	o Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.	Appendix 2A	Compliance with this CMA is achieved through application of APM-WQ-01.
Standard Practices for Weed Management	LUPA-BIO-10	Consistent with BLM state and national policies and guidance, integrated weed management actions, will be carried out during all phases of activities, as appropriate, and at a minimum will include the following:	Section 2.2.5 Section 4.4.4 Appendix 2, 2A	Compliance with this CMA is achieved through application of APM-BIO-12 and the Noxious Weed Management Plan (Appendix 2B).
		• Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Reestablish native vegetation quickly on disturbed sites.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12 and APM-BIO-15.
		• Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Use certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Nuisance Animals and Invasive Species	LUPA-BIO-11	Implement the following CMAs for controlling nuisance animals and invasive species:	Section 2.2.5 Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12 and the Noxious Weed Management Plan (Appendix 2B).
		• No fumigant, treated bait, or other means of poisoning nuisance animals including rodenticides will be used in areas where Focus and BLM Special Status Species are known or suspected to occur.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12. The Noxious Weed Control Plan would include requirements and practices for the application of herbicides, including identification of floodplains and washes to limit application areas.
		• Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.
		• When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-12.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Noise	LUPA-BIO-12	For activities that may impact Focus or BLM Special Status Species, implement the following LUPA CMA for noise:		
		• To the extent feasible, and determined necessary by BLM to protect Focus and BLM sensitive wildlife species, locate stationary noise sources that exceed background ambient noise levels away from known or likely locations of and BLM sensitive wildlife species and their suitable habitat.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-NO-07.
		• Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level, if the activity will contribute to noise levels above existing background ambient levels.	Appendix 2A	Compliance with this CMA is achieved through application of APM-NO-01.
		• Use noise controls on standard construction equipment including mufflers to reduce noise	Appendix 2A	Compliance with this CMA is achieved through application of APM-NO-01.
General Siting and Design	LUPA-BIO-13	Implement the following CMA for project siting and design:	Appendix 2A Appendix 4	Compliance with this CMA is partially achieved through application of T&T-05.
		• To the maximum extent practicable site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species (see “avoid to the maximum extent practicable” in Glossary of Terms).	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-11, APM-BIO-13, BMP-BIO-31, and BMP-BIO-52.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• The siting of projects along the edges (i.e. general linkage border) of the biological linkages identified in Appendix D (Figures D-1 and D-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent vegetation type and inclusion of other physical and biological features conducive to Focus and BLM Special Status Species' dispersal, and (2) informed by existing available information on modeled focus and BLM Special Status Species habitat and element occurrence data, mapped delineations of vegetation types, and based on available empirical data, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, projects will be sited and designed to maintain the function of F Special Status Species connectivity and their associated habitats in the following linkage and connectivity areas:	N/A	Though identified linkages are not within the Project area, implementation of BMP-BIO-52 minimizes impacts to microphyll woodlands wherever it occurs on BLM land in California.
		o Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains (the majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC).	N/A	Though the identified linkage, centered on Wiley's Well Road, is 4.5 miles from the Project and outside the linkage corridor (2.5 miles to each side of Wiley's Well Road), implementation of BMP-BIO-52 minimizes impacts to microphyll woodlands wherever it occurs on BLM land in California.
		• Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect vegetation types and focus and BLM Special Status Species.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-04, APM-BIO-22, and APM-BIO-23.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• Long-term nighttime lighting on project features will be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-33.
		• All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for Focus and BLM Special Status Species. Long-term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-33.
		• To the maximum extent practicable (see Glossary of Terms), restrict construction activity to existing roads, routes, and utility corridors to minimize the number and length/size of new roads, routes, disturbance, laydown, and borrow areas.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-& BMP-BIO-03, APM-BIO-17, BMP-BIO-31, BMP-BIO-52, BMP-BIO-53, BMP-BIO-55, and BMP-T&T-04.
		• To the maximum extent practicable (see Glossary of Terms), confine vehicular traffic to designated open routes of travel to and from the project site, and prohibit, within project boundaries, cross- country vehicle and equipment use outside of approved designated work areas to prevent unnecessary ground and vegetation disturbance.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-17, BMP-BIO-31, BMP-BIO-52, BMP-BIO-53, BMP-BIO-55, BMP-T&T-07, and BMP-T&T-08.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• To the maximum extent practicable (see Glossary of Terms), construction of new roads and/or routes will be avoided within Focus and BLM Special Status Species suitable habitat within identified linkages for those Focus and BLM Special Status Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of "no net gain" of project roads and/or routes.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-& BMP-BIO-03, APM-BMP-BIO-31, BMP-BIO-50, BMP-BIO-52, BMP-BIO-53, and BMP-BIO-55.
		• Use nontoxic road sealants and soil stabilizing agents.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-WQ-04 and APM/BMP-AQ-01.
Biology: General Standard Practices	LUPA-BIO-14	Implement the following general standard practices to protect Focus and BLM Special Status Species:	Section 4.4.4 Appendix 2A Appendix 4	
		• Feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on a site is prohibited.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-06, BMP-BIO-36, BMP-BIO-37, and BMP-WQ-04.
		• Any wildlife encountered during the course of an activity, including construction, operation, and decommissioning will be allowed to leave the area unharmed.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-35 and BMP-BIO-36.
		• Domestic pets are prohibited on sites. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-05.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• All construction materials will be visually checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of these inspections will be allowed to leave the construction area unharmed.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-35.
		• All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, they will be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing will be installed around the trench(s) or excavation(s). Open trenches or other excavations will be inspected by a designated biologist immediately before backfilling, excavation, or other earthwork.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-09.
		• Minimize natural vegetation removal through implementation of crush and drive or cut or mow vegetation rather than removing entirely.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-14 and BMP-VEG-02.
	LUPA-BIO-15	Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-38 and BMP-VEG-01.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Activity-Specific Bird and Bat CMAs	LUPA-BIO-16	For activities that may impact Focus and BLM sensitive birds, protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity-specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities.	Section 4.4.4 Appendix 2A Appendix 4	Compliance with this CMA is achieved through application of APM/BMP-BIO-19, APM/BMP-BIO-21, BMP-BIO-29, BMP-BIO-30, and BMP-BIO-45.
		Activity-specific measures to avoid and minimize impacts may include, but are not limited to:		
		• Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers.	Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-19, APM/BMP-BIO-21, BMP-BIO-29, and BMP-BIO-40.
		• For activities that impact bird and bat Focus and BLM Special Status Species, during project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the project site using the most current survey methods and best procedures available at the time.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-29.
		• Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks.	Chapter 2 Appendix 2	The Proposed Action follows the existing DPV1 transmission line. Action alternative segments follow other linear utilities with associated access (with exception of a short connector road at the Colorado River Substation), and/or are located within BLM utility corridors.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes.	Chapter 2 Appendix 2	Guyed structures are not proposed for the California portion of the Project.
		• When fencing is necessary, use bird and bat compatible design standards.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-39.
		• Using lighting that does not attract birds and bats or their prey to project sites including using non-steady burning lights (red, dual red and white strobe, strobe- like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen).	Section 4.4.4 Appendix 2A	Compliance with the CMA is achieved through application of BMP-BIO-29 and BMP-BIO-33.
		• Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-21 and BMP-BIO-29.
		• Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-21 and BMP-BIO-29.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Activity-Specific Bird and Bat CMAs	LUPA-BIO-17	For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a Bird and Bat Conservation Strategy (BBCS) will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The BBCS actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate, and may include, but is not limited to:	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of AMP/BMP-BIO-19, BMP-BIO-21, and BMP-BIO-29.
		• Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-21 and BMP-BIO-29.
		• Activity-specific operational avoidance and minimization actions that reduce the level of mortality on the populations of bird and bat species, such as:	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-21 and BMP-BIO-29.
		o Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction.	N/A	N/A
		The following provides the DRECP vegetation type and Focus and BLM Special Status Species biological CMAs to be implemented throughout the LUPA Decision Area.		
		Riparian and Wetland Vegetation Types and Associated Species (RIPWET)		
		Riparian Vegetation Types		

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	Con't	• Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-46, BMP-BIO-47, BMP-BIO-50, BMP-BIO-51, and BMP-BIO-52.
		Riparian and Wetland Bird Focus Species		
		• Southwestern Willow Flycatcher	Section 3.4.2 Appendix 2A	Though no suitable nesting habitat is present in the Project area, ground disturbance during the nesting season requires surveys for, and protection of all active bird nests, including the southwestern willow flycatcher. If nests are found protective buffers are applied. APM-BIO-20 and BMP-BIO-29 apply.
		• Western Yellow-billed Cuckoo	Section 3.4.2 Appendix 2A	Though no suitable nesting habitat is present in the Project area, ground disturbance during the nesting season requires surveys for, and protection of all active bird nests, including the western yellow-billed cuckoo. If nests are found protective buffers are applied. APM-BIO-20 and BMP-BIO-29 apply.
		• Yuma Clapper Rail	Section 3.4.2 Appendix 2A	Though no suitable nesting habitat is present in the Project area, ground disturbance during the nesting season requires surveys for, and protection of all active bird nests, including the Yuma clapper rail. If nests are found protective buffers are applied. APM-BIO-20 and BMP-BIO-29 apply.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Other Riparian & Wetland Focus Species: Tehachapi Slender Salamander	LUPA-BIO-RIPWET-1	The riparian and wetland DRECP vegetation types and other features listed in Table 17 will be avoided to the maximum extent practicable, except for allowable minor incursions (see Glossary of Terms for "avoidance to the maximum extent practicable" and "minor incursion") with the specified setbacks.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of AMP/BMP-BIO-11, AMP/BMP-BIO-19, BMP-BIO-50, BMP-BIO-51, and BMP-BIO-52
		For minor incursion (see "minor incursion" in the Glossary of Terms) to the DRECP riparian vegetation types, wetland vegetation types, or encroachments on the setbacks listed in Table 17, the hydrologic function of the avoided riparian or wetland communities will be maintained.	Appendix 2A	Compliance with this CMA is achieved through application of AMP/BMP-BIO-19 and BMP-BIO-47.
		• Minor incursions in the riparian and wetland vegetation types or other features including the setbacks listed in Table 17 will occur outside of the avian nesting season, February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW if the minor incursion(s) is likely to result in impacts to nesting birds.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-20 and BMP-BIO-29.
BLM Special Status Riparian Bird Species	LUPA-BIO-RIPWET-3	For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM Special Status riparian and wetland bird species, conduct a pre-construction/activity nesting bird survey for BLM Special Status riparian and wetland birds according to agency-approved protocols.	Section 4.4.4 Appendix 2A Appendix 4	Compliance with this CMA is achieved through application of APM-BIO-02, APM-BIO-20, and APM-BIO-25.
		• Based on the results of the nesting bird survey above, setback activities that are likely to impact BLM Special Status riparian and wetland bird species, including but not limited to pre-construction, construction and decommissioning, 0.25 mile from active nests Special Status during the breeding season (February 1 through August 31 or otherwise determined by BLM, USFWS and CDFW). For activities in areas covered by this provision that occur during the breeding season and that last longer than one	Section 4.4.4 Section 4.4.7 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-02, APM-BIO-20, and APM-BIO-25.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
		week, nesting bird surveys may need to be repeated, as determined by BLM, in coordination with USFWS and CDFW, as appropriate. No pre-activity nesting bird surveys are necessary for activities occurring outside of the breeding season.		
Dune DRECP Vegetation Types, Aeolian Processes and Associated Species (DUNE): Aeolian Processes	LUPA-BIO-DUNE-1	Because DRECP sand dune vegetation types and Aeolian sand transport corridors are, by definition, shifting resources, activities that potentially occur within or bordering the sand dune DRECP vegetation types and/or Aeolian sand transport corridors must conduct studies to verify the location [refer to Appendix D, Figure D-7] and extent of the sand resource(s) for the activity-specific environmental analysis to determine:	Section 3.3.2 Section 3.4.2 Section 4.3.4 Section 4.4.4 Appendix 2A	Compliance with this CMA is partially achieved through data contained in the Biological Resources Technical Reports, which is incorporated into Chapter 3 and Appendix 3 of this EIS, and analysis presented in Chapter 4 and Appendix 4. BMP-BIO-53 and BMP-BIO-54 apply.
		• Whether the proposed activity(s) occur within a sand dune or an Aeolian sand transport corridor	Section 3.3.2 Section 3.4.2 Section 4.3.4 Section 4.4.4 Appendix 2A	Portions of Segments ca-07, ca-09, and x-19 would cross areas of active windblown sand. BMP-BIO-53 and BMP-BIO-54 apply.
		• If the activity(s) is subject to dune/Aeolian sand transport corridor CMAs	Section 3.3.2 Section 3.4.2 Section 4.3.4 Section 4.4.4 Appendix 2A	Because portions of Segments ca-07, ca-09, and x-19 would cross areas of active windblown sand, those segments would be subject to dune/Aeolian sand transport corridor CMAs. BMP-BIO-54 applies.
		• If the activity(s) needs to be reconfigured to satisfy applicable avoidance requirements	Section 3.3.2 Section 3.4.2 Section 4.3.4 Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-54.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-BIO-DUNE-2	Activities that potentially affect the amount of sand entering or transported within Aeolian sand transport corridors will be designed and operated to:		
		• Maintain the quality and function of Aeolian transport corridors and sand deposition zones, unless related to maintenance of existing [at the time of the DRECP LUPA ROD] facilities/operations/activities	Section 4.3.4 Appendix 2A	Portions of Segments ca-07, ca-09, and x-19 would cross areas of active windblown sand. Compliance with this CMA is achieved through application of BMP-BIO-54.
		• Avoid a reduction in sand-bearing sediments within the Aeolian system	Section 4.3.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-54.
		• Minimize mortality to DUNE associated Focus and BLM Special Status Species	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-31, BMP-BIO-49, and BMP-BIO-53.
	LUPA-BIO-DUNE-3	Any facilities or activities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this transport function must be approved by BLM in coordination with USFWS and CDFW as appropriate.	Appendix 2A	Compliance with this CMA is achieved through application of BMPs WQ-06 and WQ-07.
Mohave Fringe-Toed Lizard	LUPA-BIO-DUNE-4	Dune formations and other sand accumulations (i.e., sand ramps, sand sheets) with suitable habitat characteristics for the Mojave fringe-toed lizard (i.e., unconsolidated blow-sand) will be mapped according to mapping standards established by the BLM National Operations Center.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-25 and BMP-BIO-49.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Con't		For minor incursions (see "minor incursion" in the Glossary of Terms) into sand dunes and sand transport areas the activity will be sited in the mapped zone with the least impacts to sand dunes and sand transport and Mojave fringe-toed lizards.	Section 4.4.4 Appendix 2A	All access and structures in sand dunes and transport areas would be microsited in consultation with the BLM. Compliance with this CMA is achieved through application of APM-BIO-25, BMP-BIO-49, BMP-BIO-53, BMP-BIO-54, and BMP-BIO-55.
	LUPA-BIO-DUNE-5	If suitable habitat characteristics are identified during the habitat assessment, clearance surveys (see Glossary of Terms) for Mojave fringe-toed lizard will be performed in suitable habitat areas.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-02, APM-BIO-25, and BMP-BIO-49.
		The following CMAs will be implemented for bat Focus and BLM Special Status Species, including but not limited to those listed below:	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-29, BMP-BIO-33, BMP-BIO-39, and BMP-BIO-40.
		• California Leaf-nosed Bat		
		• Pallid Bat		
		• Townsend's Big-eared Bat		
Bat Species (BAT)	LUPA-BIO-BAT-1	Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below. Refer to CMA DFA-VPL-BIO-BAT-1 for distances within DFAs and VPLs.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-40; However, no bat roosts are expected in the portion of the Project area within the CDCA.
Plant Species (PLANT): Plant Focus and BLM Special Status Species CMAs	LUPA-BIO-PLANT-1	Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant Focus and BLM Special Status Species.	Section 3.4.2 Section 4.4.4 Appendix 2A	The rare plant surveys previously conducted, in conjunction with planned pre-construction surveys will meet the BLM's survey requirements. APM-BIO-24 applies.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-BIO-PLANT-2	Implement an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species (see Appendix Q, Baseline Biology Report, in the Proposed LUPA and Final EIS [2015], or the most recent data and modeling).	Section 4.4.4 Section 4.4.7 Appendix 2, 2A	The CDCA Plan would be further amended to eliminate this setback for the Project. Compliance with this CMA is achieved through application of BMP-BIO-31.
	LUPA-BIO-PLANT-3	Impacts to suitable habitat for Focus and BLM Special Status plant species should be avoided to the extent feasible and are limited [capped] to a maximum of 1% of their suitable habitat throughout the entire LUPA Decision Area. The baseline condition for measuring suitable habitat is the DRECP modeled suitable habitat for these species utilized in the EIS analysis (2014 and 2015), or the most recent suitable habitat modeling.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through data contained in the Biological Resources Technical Reports, which is incorporated into Chapter 3 and Appendix 3 of this EIS, and analysis presented in Chapter 4 and Appendix 4. BMP-BIO-31 applies.
Special Vegetation Features (SVF)	LUPA-BIO-SVF-1	For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: Yucca clones, creosote rings, Saguaro cacti, Joshua tree woodland, microphyll woodland, Crucifixion thorn stands. BLM guidelines for mapping/surveying cacti, yuccas, and succulents shall be followed.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-11, BMP-BIO-16, APM-BIO-24, BMP-BIO-41, BMP-BIO-52, and BMP-VEG-01.
	LUPA-BIO-SVF-6	Microphyll woodland: impacts to microphyll woodland (see Glossary of Terms) will be avoided, except for minor incursions (see Glossary of Terms).	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-50, BMP-BIO-51, and BMP-BIO-52.
General Vegetation Management (VEG)	LUPA-BIO-VEG-1	Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-41.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-BIO-VEG-2	Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-42.
	LUPA-BIO-VEG-3	Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-43.
	LUPA-BIO-VEG-5	All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-41.
	LUPA-BIO-VEG-6	BLM may consider disposal of succulents through public sale, as per current up-to-date state and national policy.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-41.
Individual Focus Species (IFS): Desert Tortoise	LUPA-BIO-IFS-3	All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-44.
	LUPA-BIO-IFS-5	Following the clearance surveys (see Glossary of Terms) within sites that are fenced with long-term desert tortoise exclusion fencing a designated biologist (see Glossary of Terms) will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way.	Section 4.4.4 Appendix 2A Appendix 4	Compliance with this CMA is achieved through application of APM/BMP-BIO-23 and BMP-BIO-44.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
		• A designated biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-23 and BMP-BIO-44.
		• As an alternative, such materials shall be capped before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-23 and BMP-BIO-44.
	LUPA-BIO-IFS-6	When working in areas where protocol or clearance surveys are required (see Appendix D), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-02, APM-BIO-23, APM-BIO-25, and BMP-BIO-44.
	LUPA-BIO-IFS-7	A designated biologist (see Glossary of Terms) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-02, APM-BIO-23, and BMP-BIO-44.
	LUPA-BIO-IFS-8	Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-23 and BMP-BIO-44.
	LUPA-BIO-IFS-9	Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-44.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Bendire's Thrasher	LUPA-BIO-IFS-11	If Bendire's thrasher is present, conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure that Bendire's thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).	Appendix 4.4.4	Though Bendire's thrasher is not expected to be present in the Project area, ground disturbance during the nesting season requires surveys for, and protection of all active bird nests, including Bendire's thrasher. If nests are found protective buffers are applied. APM-BIO-20 and BMP-BIO-29 apply.
Burrowing Owl	LUPA-BIO-IFS-12	If burrowing owls are present, a designated biologist (see Glossary of Terms) will conduct appropriate activity-specific biological monitoring (see Glossary of Terms) to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APMs BIO-02, AMPBIO-25, BMP-BIO-29, and BMP-BIO-30.
	LUPA-BIO-IFS-13	If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist (see Glossary of Terms) through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-30.
	LUPA-BIO-IFS-14	Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-30.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Golden Eagle	LUPA-BIO-IFS-24	Provide protection from loss and harassment of active golden eagle nests through the following actions:		
		• Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-45.
	LUPA-BIO-IFS-25	Cumulative loss of golden eagle foraging habitat within a 1- to 4-mile radius around active or alternative golden eagle nests (as identified or defined in the most recent USFWS guidance and/or policy) will be limited to less than 20%. See CONS-BIO-IFS-5 for the requirement in Conservation Lands.	Section 3.4.2 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-45.
	LUPA-BIO-IFS-26	For activities that impact golden eagles, applicants will conduct a risk assessment per the applicable USFWS guidance (e.g. the Eagle Conservation Plan Guidance) using best available information as well as the data collected in the pre-project golden eagle surveys.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-45.
	LUPA-BIO-IFS-27	If a permit for golden eagle take is determined to be necessary, an application will be submitted to the USFWS in order to pursue a take permit.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-45.
	LUPA-BIO-IFS-28	In order to evaluate the potential risk to golden eagles, the following activities are required to conduct 2 years of pre-project golden eagle surveys in accordance with USFWS Eagle Conservation Plan Guidance.	Section 3.4.2 N/A	No reasonably foreseeable expectation for take of golden eagles

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Compensation	LUPA-BIO-COMP-1	Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA Decision Area will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-COMP-2 through -4, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-46. All compensation requirements would be captured in a Compensation Plan (mitigation measure BIO-1).
		Refer to CMA LUPA-COMP-1 and 2 for the timing requirements for initiation or completion of compensation.	N/A	Acknowledged
	LUPA-BIO-COMP-2	Birds and Bats – The compensation for the mortality impacts to bird and bat Focus and BLM Special Status Species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, a Resource Equivalency Analysis. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same “bird years” metric as described in Appendix D) is used to estimate the necessary compensation fee.	Section 4.4.4 Appendix 2A	MM BIO-1 requires the preparation of a Compensation Plan, which would aggregate biological compensatory mitigation requirements. Through APM/BMP-BIO-21 the required monitoring would provide data on bird mortality from which compensation fees would be determined.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
		Each activity, as determined appropriate by BLM in coordination with USFWS, and CDFW as applicable, will include a monitoring strategy to provide activity-specific information on mortality effects on birds and bats in order to determine the amount and type of compensation required to offset the effects of the activity, as described above and in detail in Appendix D. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the activity. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation will be consistent with the most up to date DOI mitigation policy.	Section 4.4.4 Appendix 2A	All biological compensatory mitigation requirements would be captured in a Compensation Plan (mitigation measure BIO-1).

2C.1.2 Air Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Air Resources	LUPA-AIR-1	All activities must meet the following requirements:		
		• Applicable National Ambient Air Quality Standards (Section 109)	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, BMP-AQ-05.
		• State Implementation Plans (Section 110)	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, BMP-AQ-05.
		• Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.)	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, BMP-AQ-05.
		• Conformity Analyses and Determinations (Section 176[c])	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, BMP-AQ-05.
		• Apply best management practices on a case by case basis	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, BMP-AQ-05.
		• Applicable local Air Quality Management Jurisdictions (e.g., 403 SCAQMD)	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, BMP-AQ-05.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-AIR-2	Because project authorizations are a federal undertaking, air quality standards for fugitive dust may not exceed local standards and requirements.	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, AQ-05.
	LUPA-AIR-3	Where impacts to air quality may be significant under NEPA, requiring analysis through an Environmental Impact Statement, require documentation for activities to include a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project (including cumulative and indirect impacts and greenhouse gas emissions). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and proposed mitigation measures to minimize net PM10 and PM2.5 emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01, AQ-02, and MISC-01.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-AIR-4	Because fugitive dust is the number one source of PM10 and PM2.5 emissions in the Mojave and Sonoran Deserts, fugitive dust impacts to air quality must be analyzed for all activities/projects requiring an Environmental Impact Statement and Environmental Assessment.	Section 4.2.1	Air Quality impacts are assessed in the EIS.
		• The NEPA air quality analysis may include modeling of the sources of PM10 and PM2.5 that occur prior to construction and/or ground disturbance from the activity/project, and show the timing, duration and transport of emissions off site. When utilized, the modeling will also identify how the generation and movement of PM10 and PM2.5 will change during and after construction and/or ground disturbance of the activity/project under all activity/project specific NEPA alternatives. The BLM air resource specialist and Authorizing Officer will determine if modeling is required as part of the NEPA analysis based on estimated types and amounts of emissions.	N/A	The NOC, in conjunction with the California BLM determined modeling is not required for this Project.
	LUPA-AIR-5	• A fugitive Dust Control Plan will be developed for all projects where the NEPA analysis shows an impact on air quality from fugitive dust.	Appendix 2A	Compliance with this CMA is achieved through application of APM-AQ-01.

2C.1.3 Cultural Resources and Tribal Interests

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Cultural Resources and Tribal Interests	LUPA-CUL-4	Design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes.	Appendix 2A	Compliance with LUPA-CUL-4 would be satisfied with BMP-CULT-03, which states that the applicant would follow avoidance and stipulations outlined in the PA and appropriate Historic Property Treatment Plans (HPTPs), and APM-CULT-01 and APM-CULT-02, in which the applicant commits to following those stipulations.

2C.1.4 Land Use

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Lands and Realty	LUPA-LANDS-4	Nonfederal lands within the boundaries of BLM LUPA land use allocations are not affected by the LUPA.	N/A	Acknowledged
	LUPA-LANDS-5	The MUCs used to determine land tenure in the CDCA Plan will be replaced by areas listed in the CMAs below.	Section 4.7.5	Acknowledged
	LUPA-LANDS-8	The CDCA Plan requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors, or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment. This CMA does not apply the Bishop and Bakersfield RMPs.	Section 4.7.5	The Project would comply with this CMA because it would be entirely within a DFA; additionally, some of the Project would also be within designated utility corridors.

2C.1.5 Minerals

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Minerals	LUPA-MIN-5	Areas Located Outside Identified Mineral Areas		
		• Areas which could not be characterized due to insufficient data and mineral potential may fluctuate dependent on market economy, extraction technology, and other geologic information-requiring periodic updating. Authorizations are subject to the governing laws and regulations and LUPA requirements.	N/A	Compliance would be achieved at a later date, should the BLM change the characterization of lands within the Project ROW.

2C.1.6 Paleontological Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Paleontology	LUPA-PALEO-1	If not previously available, prepare paleontological sensitivity maps consistent with the Potential Fossil Yield Classification for activities prior to NEPA analysis.	Appendix 7, Figure 3.2-1	The Project would comply - specific PFYC maps were created using existing PFYC maps of the area and associated geologic unit tables, in addition to known fossil localities.
	LUPA-PALEO-2	Incorporate all guidance provided by the Paleontological Resources Protection Act.	Appendix 2B	The Project will be in full compliance with the Paleontological Resources Preservation Act (P.L. 111-11, Title VI, Subtitle D). The BLM's management of paleontological resources is further directed through BLM IM 2016-124, IM 2009-011, and IM 2008-009.
	LUPA-PALEO-3	Ensure proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated.	Appendix 2A	Compliance with this CMA is achieved through application of APM-PALEO-01.
	LUPA-PALEO-4	Paleontological surveys and construction monitors are required for ground disturbing activities that require an EIS.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-PALEO-02.

2C.1.7 Soil and Water Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Soil and Water General	LUPA-SW-1	Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity-specific NEPA analysis.	Section 3.2.10	Compliance with this CMA is achieved through APMs and BMPs in Biological Resources, Soil Resources, and Water Resources in Appendix 2A. The water resources to which this CMA applies are identified in Section 3.2.10.
	LUPA-SW-2	Buffer zones, setbacks, and activity limitations specifically for soil and water (ground and surface) resources will be determined on an activity/site-specific basis through the environmental review process and will be consistent with the soil and water resource goals and objectives to protect these resources. Specific requirements, such as buffer zones and setbacks, may be based, in part, on the results of the Water Supply Assessment defined below. In general, placement of long-term facilities within buffers or protected zones for soil and water resources is discouraged but may be permitted if soil and water resource management objectives can be maintained.	Sections 4.3 and 4.2.10	Compliance with this CMA is achieved by the environmental review in Sections 4.3 and 4.2.10, and the reasoning in the ROD regarding the selected alternative meeting soil and water resource management objectives.
	LUPA-SW-3	Where a seeming conflict between CMAs within or between resources arises, the CMA(s) resulting in the most resource protection apply.	N/A	Acknowledged. No conflicts between CMAs noted.
	LUPA-SW-4	Nothing in the “Exceptions” below applies to or takes precedence over any of the CMAs for biological resources.		

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Groundwater Resources	LUPA-SW-5	Exceptions to any of the specific soil and water stipulations contained in this section, as well as those listed below under the subheadings "Soil Resources," "Surface Water," and "Groundwater Resources," may be granted by the authorized officer if the applicant submits a plan, or, for BLM-initiated actions, the BLM provides documentation, that demonstrates:		
		• The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.	Section 2.2.5	Water would be acquired from private commercial sources.
Soil Resources	LUPA-SW-6	In addition to the applicable required governmental safeguards, third party activities will implement up-to-date standard industry construction practices to prevent toxic substances from leaching into the soil.	Appendix 2A	Compliance with this CMA is achieved through application of APM-HAZ-01.
	LUPA-SW-7	Prepare an emergency response plan, approved by the BLM contaminant remediation specialist, that ensures rapid response in the event of spills of toxic substances over soils.	Appendix 2A	Compliance with this CMA is achieved through application of APM-HAZ-01.
	LUPA-SW-8	As determined necessary on an activity specific basis, prepare a site plan specific to major soil types present (≥5% of footprint or laydown surfaces) in Wind Erodibility Groups 1 and 2 and in Hydrology Soil Class D as defined by the USDA Natural Resource Conservation Service to minimize water and air erosion from disturbed soils on activity sites.	Appendix 2A	Compliance with this CMA is achieved through application of APM-GEO-01.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-SW-9	The extent of desert pavement within the proposed boundary of an activity shall be mapped if it is anticipated that the activity may create erosional or ecologic impacts. Mapping will use the best available data and standards, as determined by BLM. Disturbance of desert pavement within the boundary of an activity shall be limited to the extent possible. If disturbance from an activity is likely to exceed 10% of the desert pavement mapped within the activity boundary, the BLM will determine whether the erosional and ecologic impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.	Appendix 2A	Compliance with this CMA is achieved through application of BMPs SOIL-04 and SOIL-05.
	LUPA-SW-10	The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped if it is anticipated that an activity will impact these resources. To the extent possible, avoid disturbance of desert biologically intact soil crusts, and soils highly susceptible to wind and water erosion.	Appendix 2A	Required mapping of sensitive soil areas is contained in the project record. In addition, Compliance with this CMA is achieved through application of BMP-SOIL-07.
	LUPA-SW-11	Where possible, side casting shall be avoided where road construction requires cut- and-fill procedures.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-SOIL-06.
Surface Water	LUPA-SW-12	Except in DFAs, exclude long-term structures in, playas (dry lake beds), and Wild and Scenic River corridors, except as allowed with minor incursions (see definition in the Glossary of Terms).	N/A	The Project would be within a DFA. Non-Federal surface waters outside the DFA would be spanned.
	LUPA-SW-13	BLM will manage all riparian areas to be maintained at, or brought to, proper functioning condition.	Appendix 2A	Compliance with this CMA is achieved through application of AMP/BMP-BIO-19 and BMP-BIO-47.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-SW-14	All relevant requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be complied with.	Section 4.2.10	The analysis includes a floodplain assessment and statement of findings that analyzes the potential floodplain impacts associated with the Project. The action alternatives would not be likely to disturb or affect any wetlands (e.g., all should be able to be avoided/spanned), thus a wetlands statement of findings is not included.
	LUPA-SW-15	Surface water diversion for beneficial use will not occur absent a state water right.	N/A	No surface water diversions are planned for the Project
	LUPA-SW-16	The 100-year floodplain boundaries for any surface water feature in the vicinity of the project will be identified. If maps are not available from the Federal Emergency Management Agency (FEMA), these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.	Section 4.2.10 Appendix 2A	Compliance with this CMA is also achieved through application of APM-BIO-19.
Groundwater	LUPA-SW-18	Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-WQ-05.
	LUPA-SW-20	After application of applicable avoidance and minimization measures, all remaining unavoidable residual impacts to surface waters from the proposed activity shall be mitigated to ensure no net loss of function and value, as determined by the BLM.	Section 4.2.10	Compliance is demonstrated by the fact that no residual impacts are identified.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-SW-21	Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-WQ-06.
	LUPA-SW-22	All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the project area, or specific mitigation measures shall be implemented that will minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with USFWS, CDFW, and other agencies, as appropriate. These beneficial uses may include municipal, domestic, or agricultural water supply; groundwater recharge; surface water replenishment; recreation; water quality enhancement; flood peak attenuation or flood water storage; and wildlife habitat.	Appendix 1, Table 1.7-3 Appendix 2A	Compliance with this CMA is achieved through application of BMP-WQ-06 and the Section 404 permitting process.

2C.1.8 Visual Resource Management

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Visual Resources Management	LUPA-VRM-1	Manage Visual Resources in accordance with the VRM classes shown on Figure 9.	Section 4.11	Conformance with VRM classes is demonstrated in the EIS analysis.
	LUPA-VRM-2	Ensure that activities within each of the VRM Class polygons meets the VRM objectives described above, as measured through a visual contrast rating process.	Section 4.11	Conformance with VRM classes is demonstrated in the EIS analysis.
	LUPA-VRM-3	Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other BMPs to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for reducing visual impacts see the “Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands”, available at http://www.blm.gov/style/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/renewable_references.Par.1568.File.dat/RenewableEnergyVisualImpacts_BMPs.pdf, or the most recent version of the document or BMPs for VRM, as determined by BLM.	Section 4.11	The Project would meet VRM objectives established for BLM-administered public lands within the Project Area in the PSFO.

2C.2 LUPA-WIDE TRANSMISSION CMAS

2C.2.1 Biological Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTION	COMPLIANCE SUMMARY
Biological Resources	LUPA-TRANS-BIO-1	Where feasible and appropriate for resource protection, site transmission activities along roads or other previously disturbed areas to minimize new surface disturbance, reduce perching opportunities for the Common Raven, and minimize collision risks for birds and bats.	Section 4.4.7 Appendix 2A	Compliance with this CMA is achieved through application of APM-AES-06, APM/BMP-BIO-19, BMP-AES-06, BMP-BIO-21, and BMP-BIO-28.
	LUPA-TRANS-BIO-2	Flight diverters will be installed on all transmission activities spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by BLM, in coordination with USFWS and CDFW as appropriate, and will be based on the best available scientific and commercial data regarding the prevention of bird collisions with transmission and guy wires.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-21 and BMP-BIO-48.
	LUPA-TRANS-BIO-3	When siting transmission activities, the alignment should avoid, to the maximum extent practicable, being located across canyons or on ridgelines. Site and design sufficient distance between transmission lines to prevent electrocution of condors.	Appendix 2A	Compliance with this CMA is achieved through application of APM/BMP-BIO-21, BMP-AES-07, and BMP-AES-08. However, there are no canyons or ridgelines in the portion of the Project area located within the CDCA Plan area.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTION	COMPLIANCE SUMMARY
Biological Resources	LUPA-TRANS-BIO-4	Siting of transmission activities will be prioritized within designated utility corridors, where possible, and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in Aeolian corridors, rare vegetation alliances and Focus and BLM Special Status Species. Transmission substations will be sited to avoid Aeolian corridors, rare vegetation alliances, and sand-dependent Focus and BLM Special Status Species habitats.	Section 3.3.2 Section 3.4.2 Chapter 2 Section 4.3.4 Section 4.4.4 Appendix 2, 2A	Portions of Segments ca-07, ca-09, and x-19 would cross areas of active windblown sand. Compliance with this CMA is achieved through application of APM-AES-05, BMP-BIO-53, and BMP-BIO-54.

2C.2.2 Cultural Resources and Tribal Interests

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTION	COMPLIANCE SUMMARY
Cultural Resources & Tribal Interests	LUPA-TRANS-CUL-1	For transmission (and renewable energy) activities, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:	Appendix 2D	Compliance with LUPA-TRANS-CUL-1 would be satisfied by APM-CULT-01 and APM-CULT-02, in which the applicant commits to conducting a cultural resources inventory of the direct and indirect APE, preparing HPTPs, and conducting cultural resource monitoring during Project construction, operations, and maintenance (as appropriate) to meet stipulations outlined in the PA Appendix 2D.
		• All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.		

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTION	COMPLIANCE SUMMARY
		• All appropriate costs associated with preliminary sensitivity analysis.		
		• All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.	N/A	Enforcement by BLM.
		• All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.		
	LUPA-TRANS-CUL-2	Consistent and in compliance with the NHPA Programmatic Agreement, signed February 5, 2016, or the most up to date signed version – for transmission (and renewable energy) activities, a compensatory mitigation fee will be required within the LUPA Decision Area to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the NHPA Programmatic Agreement for details regarding the mitigation fee.	Appendix 2D	Compensatory mitigation determinations pending within the BLM. Compliance with LUPA-TRANS-CULT-2 would be satisfied by BMP-CULT-05, which outlines the fee structure of the compensatory mitigation fee. The compensatory mitigation fee structure is also outlined in the stipulations contained within the PA.
	LUPA-TRANS-CUL-3	For transmission (and renewable energy) activities, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.	Appendix 2D	Management fee determinations pending within the BLM. Compliance with LUPA-TRANS-CUL-3 would be satisfied by BMP-CULT- 05, which outlines the fee structure of the management fee as part of the compensatory mitigation fee. The management fee and compensatory mitigation fee structure is also outlined in the stipulations contained within the PA.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTION	COMPLIANCE SUMMARY
	LUPA-TRANS-CUL-4	For transmission (and renewable energy) activities, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.		Sensitivity analysis responses pending BLM review. Compliance with LUPA-TRANS-CUL-4 would be satisfied with BMP-CUL-06. The BLM has prepared a sensitivity model (Kline 2017).
	LUPA-TRANS-CUL-5	For transmission (and renewable energy) activities, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Section 3.5	Class III inventory results pending BLM review. Compliance with LUPA-TRANS-CUL-5 would be satisfied by BMP-CULT-07, which requires cultural resources Class III survey of segments p-17 and p-18 to be conducted during the NEPA and CEQA analyses to meet the conditions of LUPA-TRANS-CUL-5 and DFA-VPL-CUL-5. The Class III survey of segments p-17 and p-18 has been conducted.
	LUPA-TRANS-CUL-6	For transmission (and renewable energy) activities, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.		Sensitivity analysis responses pending BLM review. Compliance with LUPA-TRANS-CUL-6 would be satisfied by BMP-CULT-08, which requires such justification from the Project applicant.

2C.3 DFA AND VPL-SPECIFIC CMAS

2C.3.1 Biological Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Biological Resources: North American Warm Desert Dune and Sand Flats	DFA-VPL-BIO-DUNE-1	Activities in DFAs and VPLs, including transmission substations, will be sited to avoid dune vegetation (i.e., North American Warm Desert Dune and Sand Flats). Unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to dune vegetation will be limited to transmission projects, except transmission substations, and access roads that will be sited to minimize unavoidable impacts.	Section 3.3.2 Section 3.4.2 Section 4.3.4 Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-53.
		• For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to dune vegetation, the following will be required:		
		o Access roads will be unpaved.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIP-53 and BMP-T&T-06.
		o Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-53 and BMP-T&T-06.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-VPL-BIO-DUNE-2	Within Aeolian corridors that transport sand to dune formations and vegetation types downwind inside and outside of the DFAs, all activities will be designed and operated to facilitate the flow of sand across activity sites, and avoid the trapping or diverting of sand from the Aeolian corridor. Buildings and structures within the site will take into account the direction of sand flow and, to the extent feasible, build and align structures to allow sand to flow through the site unimpeded. Fences will be designed to allow sand to flow through and not be trapped.	Section 4.3.4 Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of BMP-BIO-54. Buildings and fences are not proposed for the portion of the Project in California. Structures are proposed to be self-supported lattice, which would minimize obstruction to sand transport. Tangent lattice structures would allow winds to essentially blow through the structure, minimizing the impact on sand transport.
Individual Focus Species (IFS): Desert Tortoise	DFA-VPL-BIO-IFS-1	To the maximum extent practicable (see Glossary of Terms), activities will be sited in previously disturbed areas, areas of low-quality habitat, and areas with low habitat intactness in desert tortoise linkages and the Ord-Rodman TCA, identified in Appendix D.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-MISC-04.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Fire Prevention/Protection	DFA-VPL-BIO-FIRE-1	Implement the following standard practice for fire prevention/protection:		
		• Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment (including in vehicles), and establishing emergency response information relevant to the construction site.	Section 4.4.4 Appendix 2A	Compliance with this CMA is achieved through application of AMP/BMP-BIO-11, BMP-PH&S-02, and BMP-HAZ-02
Biological Compensation	DFA-VPL-BIO-COMP-1	Impacts to biological resources from all activities in DFAs and VPLs will be compensated using the same ratios and strategies as LUPA-BIO-COMP-1 through 4, with the exception identified below in DFA-VPL-BIO-COMP-2.	N/A	See LUPA-BIO-COMP-1 and 2. All biological compensatory mitigation requirements would be captured in a Compensation Plan (mitigation measure BIO-1).

2C.3.2 Cultural Resources and Tribal Interests

The following CMAs are for renewable energy and transmission land use authorizations only, in DFAs and VPLs. All other activities in DFAs and VPs are subject to the NHPA Section 106 process.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-VPL-CUL-1	For renewable energy activities and transmission, require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:	Appendix 2D	Compliance with DFA-VPL-CUL-1 would be satisfied by APM-CULT-01 and APM-CULT-02, in which the applicant commits to conducting a cultural resources inventory of the direct and indirect APE, preparing HPTPs, and conducting cultural resource monitoring during Project construction, operations, and maintenance (as appropriate) to meet stipulations outlined in the PA.
		• All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity.		
		• All appropriate costs associated with preliminary sensitivity analysis.	N/A	Enforcement by BLM.
		• All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.		
		• All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.		

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-VPL-CUL-2	Consistent and in compliance with the NHPA Programmatic Agreement, signed February 5, 2016, or the most up to date signed version -for renewable energy activities and transmission, a compensatory mitigation fee will be required within the LUPA Decision Area to address cumulative and some indirect adverse effects to historic properties. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the project. Refer to the Programmatic Agreement for details regarding the mitigation fee.	Appendix 2D	Compensatory mitigation determinations and final draft PA language pending within the BLM. Compliance with LUPA-TRANS-CULT-2 and DFA-VPL-CUL-2 would be satisfied by BMP-CULT-05, which outlines the fee structure of the compensatory mitigation fee. The compensatory mitigation fee structure is also outlined in the stipulations contained within the PA.
	DFA-VPL-CUL-3	For renewable energy activities and transmission, the management fee rate will be determined through the NHPA programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.	Appendix 2D	Management fee and mitigation fee determinations, and final draft PA language pending within the BLM. Compliance with DFA-VPL-CUL-3 would be satisfied by BMP-CULT- 05, which outlines the fee structure of the management fee as part of the compensatory mitigation fee. The management fee and compensatory mitigation fee structure is also outlined in the stipulations contained within the PA.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-VPL-CUL-4	For renewable energy activities and transmission, demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.		Sensitivity analysis responses pending BLM review. Compliance with DFA-VPL-CUL-4 would be satisfied with BMP-CUL-06. The BLM has prepared a sensitivity model (Kline 2017).
	DFA-VPL-CUL-5	For renewable energy activities and transmission, provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.	Section 3.5.2	Sensitivity analysis responses and Class III draft survey report pending BLM review. Compliance with DFA-VPL-CUL-5 would be satisfied by BMP-CULT-07, which requires cultural resources Class III survey of segments p-17 and p-18 to be conducted during the NEPA and CEQA analyses to meet the conditions of DFA-VPL-CUL-5. The Class III survey of segments p-17 and p-18 has been conducted.
	DFA-VPL-CUL-6	For renewable energy activities and transmission, provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.		Sensitivity analysis responses pending BLM review. Compliance with DFA-VPL-CUL-6 would be satisfied by BMP-CULT-08, which requires such justification from the Project applicant.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-VPL-CUL-7	For renewable energy activities and transmission, complete the NHPA Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar Programmatic Agreement.	Sections 5.3 and 5.5.1 Appendix 2D	Section 5.5.1 summarizes the process of drafting the Programmatic Agreement. Section 5.3 presents the efforts of Native American consultation with Indian tribes. Appendix 2D is the draft Programmatic Agreement for the Project. The PA would be executed prior to issuing a ROD or ROW grant.

2C.3.3 Visual Resource Management

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Visual Resources Management	DFA-VPL-VRM-1	Encourage development in a planned fashion within DFAs (e.g., similar to the planned unit development concept used for urban design—i.e., in-fill vs. scattered development, use of common road networks, Generator Tie Lines etc., use of similar support facility designs materials and colors etc.) to avoid industrial sprawl.	Section 3.7.2	The entire portion of the Project Area on BLM-administered lands in California is within a DFA. Portions of the Proposed Action and many of the Action Alternative segments would either be within or immediately adjacent to designated utility corridors on BLM-administered lands in California.
	DFA-VPL-VRM-2	Development in DFAs and VPLs are required to incorporate visual design standards and include the best available, most recent BMPs, as determined by BLM (e.g. Solar, Wind, West Wide Energy Corridor, and Geothermal PEISs, the "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*", and other programmatic BMP-documents).	Appendix 2A	See APMs and BMPs developed for visual resources, some of which came from the referenced document.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-VPL-VRM-3	Required Visual Resource BMPs. All development within the DFAs and VPLs will abide by the BMPs addressed in the most recent version of the document "*Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands"*, or its replacement, including, but not limited to the following:	Appendix 2A	See APMs and BMPs developed for visual resources, some of which came from the referenced document. J. Dalton is seeking additional direction regarding dark night skies from Washington; additions will be made once direction is received.
		• Transmission:		
		o Color-treat monopoles Shadow Gray per the BLM Environmental Color Chart CC001 unless a more effective color choice is selected by the local Field Office VRM specialist.	Appendix 2A	Compliance with this CMA is achieved through application of APM-& BMP-AES-04.
		o Lattice towers and conductors will have non-specular qualities.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-AES-04.
		o Lattice Towers will be located a minimum of 3/4 mile away from Key Observation Points such as roads, scenic overlooks, trails, campgrounds, navigable rivers and other areas people tend to congregate and located against a landscape backdrop when topography allows.	Appendix 7, Figure 3.11-8	The Project would comply with this CMA, as the KOPs for the portion of the Project located on Federal lands in California are a minimum of ¾ mile away from Project infrastructure, and self-supporting lattice structures are proposed.

2C.4 DFA-SPECIFIC CMAS

2C.4.1 Biological Resources

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Biological Resources	DFA-BIO-IFS-1	Conduct the following surveys as applicable in the DFAs as shown in Table 21.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-02, APM/BMP-BIO-23, APM-BIO-20, BMP-BIO-30, and BMP-BIO-45.
	DFA-BIO-IFS-2	Implement the following setbacks shown below in Table 22 as applicable in the DFAs.	Appendix 2A	Compliance with this CMA is achieved through application of APM-BIO-02, BMP-BIO-29, BMP-BIO-30, and BMP-BIO-45.

2C.4.2 Recreation

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Recreation	DFA-REC-1	Retain, to the extent possible, the identified recreation setting characteristics: physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls (see recreation setting characteristics matrix).	Appendix 2A	Compliance with this CMA is achieved through application of BMP-REC-01.
	DFA-REC-2	Avoid large-scale ground disturbance within one-half mile of Level 3	Appendix 2A	Compliance with this CMA is achieved through application of BMP-REC-01.
		Recreation facility footprint including route access and staging areas. If avoidance isn't practicable, the facility must be relocated to the same or higher standard and maintain recreation objectives and setting characteristics.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-REC-01.
	DFA-REC-4	When considering large-scale development in DFAs, retain to the extent possible existing, approved recreation activities.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-REC-01.
	DFA-REC-5	For displacement of dispersed recreation opportunities, commensurate compensation in the form of enhanced recreation operations, recreation facilities or opportunities will be required. If recreation displacement results in resource damage due to increased use in other areas, mitigate that damage through whatever measures are most appropriate as determined by the Authorized Officer.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-REC-01.

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	DFA-REC-7	If designated vehicle routes are directly impacted by activities (includes modification of existing route to accommodate industrial equipment, restricted access or full closure of designated route, pull outs, and staging areas to the public, etc.), mitigation will include the development of alternative routes to allow for continued vehicular access with proper signage, with a similar recreation experience. In addition, mitigation will also include the construction of an "OHV touring route" which circumvents the activity area and allows for interpretive signing materials to be placed at strategic locations along the new touring route, if determined to be appropriate by BLM.	Appendix 2A	Compliance with this CMA is achieved through application of BMP-REC-01.

2C.4.3 Lands and Realty

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Lands and Realty	DFA-LANDS-7	Transmission facilities are an allowable use and will not require a plan amendment within DFAs.	Section 4.7.9	The Project would be within the established DFA and therefore no RMPA would be required; thus, the Project complies with this CMA.

2C.4.4 Visual Resource Management

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
Visual Resources Management	DFA-VRM-1	Manage all DFAs as VRM Class IV to allow for industrial scale development. Employ best management practices to reduce visual contrast of facilities.	Section 4.11	The Project would comply with VRM Class IV objectives.
	DFA-VRM-2	Regional mitigation for visual impacts is required in DFAs. Mitigation is to be based on the VRI class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the activity area as it stands at the time the ROD is signed for the DRECP LUPA. Compensatory mitigation may take the form of reclamation of other BLM lands to maintain (neutral) or enhance (beneficial) visual values on VRI Class II and III lands. Other considerations may include acquisition of conservation easements to protect and sustain visual quality within the viewshed of BLM lands. The following mitigation ratios will be applied in DFAs:	Section 4.11	Analysis of impacts determined that the Project would not result in reduction of VRI Class II areas in California to lower VRI classes. Therefore, no compensatory mitigation would be required for the Project.
		VRI Class II 1:1 ratio		

2C.4.5 Compensation

CATEGORY	CMA #	CMA TEXT	RELEVANT EIS SECTIONS	COMPLIANCE SUMMARY
	LUPA-COMP-1	For third party actions, compensation activities must be initiated or completed within 12 months from the time the resource impact occurs (e.g. ground disturbance, habitat removal, route obliteration, etc. for construction activities; wildlife mortality, visual impacts, etc. due to operations).	N/A	Details of reclamation/restoration demonstrating compliance with the CMA will be contained in various plans referenced in the EIS and will be resolved with the BLM prior to issuance of the NTP. All compensation requirements would be captured in a Compensation Plan (mitigation measure BIO-1).
		• BLM will determine, in the environmental analysis, the activity/project-level timing of the compensation (i.e. initiated, completed or a combination) based on the specific resources being impacted, and scope and content of the activity.		
		• A 6-month extension may be authorized, subject to approval by the authorizing officer, dependent on the resources impacted and compensation due diligence of the project developer.		

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Appendix 2D Programmatic Agreement

PROGRAMMATIC AGREEMENT
AMONG
THE BUREAU OF LAND MANAGEMENT,
ARIZONA TUCSON FIELD OFFICE,
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER,
THE COLORADO RIVER INDIAN TRIBES,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE
TEN WEST LINK TRANSMISSION PROJECT
BETWEEN TONOPAH, LA PAZ COUNTY, ARIZONA
AND BLYTHE, RIVERSIDE COUNTY, CALIFORNIA

1. **WHEREAS,** DCR Transmission, LLC (the Applicant), intends to construct, operate and maintain the Ten West Link Transmission Project (the Undertaking) in Arizona and California according to general parameters contained in the Undertaking's Plan of Development (POD), as summarized in Stipulation II and Attachment 1; and

2. **WHEREAS,** the Undertaking consists of the construction, operation and maintenance of a 500 kV transmission line approximately 114 miles in length, proposed to begin at the Delaney Substation near Tonopah, Arizona and end at the Colorado River Substation west of Blythe, California, crossing lands with the following jurisdictions: the Bureau of Land Management (BLM); Bureau of Reclamation (Reclamation); U.S. Fish and Wildlife Service (FWS); Colorado River Indian Tribes (CRIT); Arizona State Land Department (ASLD); California State Land Commission (SLC); Counties of Maricopa and La Paz, Arizona and Riverside, California; Town of Quartzsite, Arizona; and private lands (Attachment 1); and

3. **WHEREAS,** the Yuma Field Office of the BLM may issue a right-of-way (ROW) grant to the Applicant for the construction, operation, and maintenance of the Undertaking, and if issued, the ROW grant will incorporate this Programmatic Agreement (PA); and

4. **WHEREAS,** the BLM has determined that issuance of the ROW grant and related authorizations is an Undertaking as defined at 36 C.F.R. § 800.16 that triggers the requirements of 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. § 300101 et seq., as amended), hereinafter referred to as Section 106, on Federal and non-Federal lands during the planning, construction, operation, and maintenance of the Undertaking; and

5. **WHEREAS,** this PA and the Historic Properties Treatment Plans (HPTPs), one for each State, that will be developed pursuant to this PA will be incorporated into the POD; and

6. **WHEREAS,** the Federal agencies involved have designated the BLM to serve as the lead Federal agency for the Undertaking, and has identified the area of potential effects (APE) as described in Stipulation V (also see Attachment 1); and

7. **WHEREAS,** the BLM in consultation with the other parties to this PA, has determined that the Undertaking will have adverse effects upon historic properties as defined in 36 C.F.R. § 800.16(l)(1); and this PA has been negotiated to resolve the adverse effect; and

8. **WHEREAS,** pursuant to 36 C.F.R. § 800.6 and 800.14, the BLM has consulted with the Arizona State Historic Preservation Officer and the California State Historic Preservation Officer (collectively, the SHPOs), and the CRIT Tribal Council, and they are Signatories to this PA; and

9. **WHEREAS**, the Arizona and California SHPOs and CRIT Tribal Historic Preservation Officer are authorized to enter this agreement in order to fulfill their roles of advising and assisting Federal agencies in carrying out Section 106 responsibilities under the following Federal statutes: Sections 101 and 106 of the NHPA, at § 800.2(c)(l)(i), and § 800.6(b)(1)(i); and

10. **WHEREAS,** the AZ SHPO is authorized to advise and assist the Federal and State agencies in carrying out their historic preservation responsibilities and cooperate with these agencies under A.R.S. § 41-511.04(D)(4); and

11. **WHEREAS,** pursuant to 36 C.F.R. § 800.6(a)(1)(i)(C), the BLM, on February 15, 2017, notified the Advisory Council on Historic Preservation (ACHP) that the Undertaking will have adverse effects on historic properties that will be resolved through the PA, and the ACHP declined on March 9, 2017 to participate as a party to the PA to resolve such adverse effects; and the BLM requested that the ACHP participate as a party to the PA on January 11, 2018; and the ACHP accepted on January 25, 2018 and are a Signatory to this PA; and

12. **WHEREAS,** CRIT has assumed the role of THPO with respect to lands within its reservation boundaries and this Undertaking may cross lands under its jurisdiction; and

13. **WHEREAS,** no provision of this PA will be construed by any of the Signatories, Invited Signatories, or Concurring Parties to the PA as: (a) abridging, debilitating, or in any way affecting any sovereign powers of CRIT; (b) affecting the trustee-beneficiary relationship between the United States Secretary of the Interior and CRIT (or individual Indian landowners); or (c) interfering with the government-to-government relationship between the United States and CRIT; and

14. **WHEREAS,** the Bureau of Indian Affairs Western Regional Office (BIA) is the agency responsible for issuing permits and approving ROWs on tribal and allotted lands of CRIT, and the BLM has consulted with the BIA about the effects of the Undertaking on historic properties and has invited them to be an Invited Signatory to this PA; and

15. **WHEREAS,** the Applicant has participated in Section 106 consultations and the BLM has consulted with the Applicant about the effects of the Undertaking on historic properties and has invited them to be an Invited Signatory to this PA; and

16. **WHEREAS,** no provision of this PA shall be construed by any of the Signatories, Invited Signatories, or Concurring Parties to the PA as: (a) diminishing or reducing the Applicant's property rights or business operation discretion as provided by law, (b) expanding or increasing the authority of any governmental or Tribal entity beyond that explicitly provided by law or regulation or (c) waiving the Applicant's right to contest and/or appeal any governmental action; and

17. **WHEREAS,** the Undertaking crosses lands in California that are subject to the Programmatic Agreement Regarding Renewable Energy Development on a Portion of Public Lands Administered by the Bureau of Land Management – California, dated February 5,

2016 (the Desert Renewable Energy Conservation Plan or DRECP PA); the California portion of the PA tiers from this version of the DRECP PA, pursuant to Stipulation I(B)(2) of the DRECP PA; and certain stipulations of the DRECP PA apply to the portion of the Undertaking in California; and

18. **WHEREAS,** because the Undertaking crosses lands under the jurisdiction of the ASLD, the ASLD may use provisions of the PA to address the applicable requirements of the Arizona State Historic Preservation Act (A.R.S. § 41-861 et seq.) on State Trust lands in Arizona and may issue a ROW for the Undertaking; the BLM has consulted with the ASLD about the effects of the Undertaking on historic properties and has invited the ASLD to be an Invited Signatory to the PA; and

19. **WHEREAS,** the SLC may authorize alternatives of the Undertaking on State land and has certain responsibilities under California State laws and regulations to take into account and mitigate the impacts on properties eligible for or included on the California Register of Historic Places; and the SLC has declined in a Consulting Party Return Form dated March 6, 2017 to participate as a Consulting Party in the negotiation of the PA; and

20. **WHEREAS,** the BLM has consulted with the California Department of Transportation (Caltrans), which may issue ROWs to the Applicant for access to and construction of certain components of the Undertaking, about the effects of the Undertaking on historic properties and Caltrans has declined in a Consulting Party Return Form dated February 24, 2017 to participate as a Consulting Party in the negotiation of the PA; and

21. **WHEREAS,** the BLM has consulted with Arizona Department of Transportation (ADOT), which may issue ROWs to the Applicant for access to and construction of certain components of the Undertaking, about the effects of the Undertaking on historic properties and has invited ADOT to be an Invited Signatory to the PA; and

22. **WHEREAS,** the Lower Colorado Region of Reclamation is considering issuing a license to the Applicant to construct, operate, and maintain the proposed transmission line on any Reclamation lands crossed by the Undertaking; and the BLM has consulted with Reclamation about the effects of the Undertaking on historic properties and has invited Reclamation to be an Invited Signatory to the PA; and

23. **WHEREAS**, the Department of Defense Yuma Proving Ground (YPG) is considering issuing a license to the Applicant to construct, operate, and maintain the proposed transmission line on any YPG lands crossed by the Undertaking; and the BLM has consulted with YPG about the effects of the Undertaking on historic properties and has invited YPG to be an Invited Signatory to the PA; and

24. **WHEREAS,** the California Public Utilities Commission (CPUC) agrees that the California State Historic Preservation Officer (SHPO), per 36 CFR 800(c)(2) reflects the interests of the State of California and its citizens in the preservation of their cultural heritage and therefore the interests of the CPUC, as a State of California lead agency for purposes of compliance with the California Environmental Quality Act (CEQA); and

25. **WHEREAS,** the CPUC is the lead State agency for compliance with the California Environmental Quality Act (CEQA) and has certain responsibilities under California State laws and regulations to take into account and mitigate the impacts on properties eligible for or included on the California Register of Historical Resources; and the BLM has consulted

with the CPUC about the effects of the Undertaking on historic properties and has invited the CPUC to be an Invited Signatory to the PA; and

26. **WHEREAS,** the Undertaking may cross lands under the jurisdiction of La Paz and Maricopa Counties, Arizona and Riverside County, California. The Undertaking may cross lands under the jurisdiction of the Town of Quartzsite, Arizona; and the BLM has invited the above counties and the Town of Quartzsite, Arizona to be Consulting Parties. La Paz County and the Town of Quartzsite have accepted the invitation to be Consulting Parties. The BLM has consulted with them about the effects of the Undertaking on historic properties and has invited each of La Paz County and the Town of Quartzsite to be Invited Signatories to this PA; and

27. **WHEREAS,** the Arizona State Museum (ASM) has been invited to participate in the PA pursuant to 36 C.F.R. § 800.6(c)(2)(iii) as it has mandated authority and responsibilities under the Arizona Antiquities Act (AAA) A.R.S. § 41-841 et seq. that apply to that portion of the Undertaking on State lands as defined in the AAA in Arizona; and the ASM has mandated authority and responsibilities under A.R.S. § 41-865 that apply to that portion of the Undertaking on private lands; and the BLM has consulted with the ASM about the effects of the Undertaking on historic properties and has invited the ASM to be an Invited Signatory to the PA; and

28. **WHEREAS,** the Western Area Power Administration (WAPA) may participate in the Undertaking by providing funding to the Applicant; and the BLM has consulted with WAPA about the effects of the Undertaking on historic properties and has invited WAPA to be an Invited Signatory to the PA: and

29. **WHEREAS,** the BLM is responsible for government-to-government consultation with Indian tribes pursuant to 36 C.F.R. § 800.2(c)(2)(ii), the American Indian Religious Freedom Act (42 U.S.C. § 1996) (AIRFA), Executive Order 13175, and Section 3(c) of the Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001-13) (NAGPRA), and has formally invited the twenty-three (23) Indian tribes listed below to participate in consultations regarding the potential effects of the Undertaking on properties to which they ascribe traditional religious and cultural significance, provided that CRIT and the CRIT THPO take no position on whether consultation has occurred or is consistent with Federal law; and

30. **WHEREAS,** the Agua Caliente Band of Cahuilla Indians, the Ak-Chin Indian Community, the Augustine Band of Cahuilla Indians, the Cabazon Band of Mission Indians, the Chemehuevi Tribe, the Cocopah Tribe, the Fort McDowell Yavapai Nation, the Fort Mojave Indian Tribe, the Quechan Tribe, the Gila River Indian Community, the Salt River Pima-Maricopa Indian Community, the Hopi Tribe, the Moapa Band of Paiute Indians, the Morongo Band of Mission Indians, the San Manuel Band of Mission Indians, the Soboba Band of Luiseno Indians, the Tohono O'odham Nation, the Torres Martinez Desert Cahuilla Indians, the Twenty-Nine Palms Band of Mission Indians, the Yavapai-Apache Nation, the Yavapai-Prescott Indian Tribe, and the Pueblo of Zuni (collectively, the Tribes) have been contacted, invited to engage in consultations and invited to be Concurring Parties to the PA; and

31. **WHEREAS,** the Ak-Chin Indian Community, the Cocopah Tribe, the Fort Mojave Indian Tribe, the Gila River Indian Community, the Hopi Tribe, the Morongo Band of Mission

Indians, the Quechan Tribe, the Salt River Pima-Maricopa Indian Community, the Soboba Band of Luiseno Indians, the Tohono O'odham Nation, the Torres Martinez Desert Cahuilla Indians, the Twenty-Nine Palms Band of Mission Indians, and the Yavapai-Apache Nation, and the Yavapai-Prescott Indian Tribe have participated in consultations for the Undertaking and the development of the PA consistent with 36 C.F.R. § 800.2(c)(2); provided that CRIT and the CRIT THPO take no position on whether consultation has occurred or is consistent with Federal law; and

32. **WHEREAS,** the CPUC is responsible for government-to-government consultation with Indian tribes pursuant to CEQA for non-Federal lands, the CPUC has informed consulting Indian tribes in California that the BLM's consultation process fulfills part of CPUC's consultation obligations; and

33. **WHEREAS,** the BLM has provided the public with opportunities to comment on the Undertaking and participate in the National Environmental Policy Act (NEPA) process through a Notice of Intent to Prepare an Environmental Impact Statement (EIS) published in the Federal Register on March 23, 2016 for the development of the EIS; held three public scoping meetings in April 2016; published the Draft EIS on August 31, 2018 and held three public meetings in Phoenix, AZ on October 9, 2018, Quartzsite, AZ on October 10, 2018, and Blythe, CA on October 11, 2018. Public meeting materials included information about the NHPA and the Section 106 process, and the BLM considered comments received through the NEPA and NHPA processes concerning cultural resources in the development of the PA; and

34. **WHEREAS**, Human Remains, Associated/Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony recovered within or on Federal and tribal land will be treated in accordance with NAGPRA pursuant to 25 U.S.C. § 3001–13, ARPA pursuant to U.S.C. 470aa, and in accordance with the AIRFA pursuant to 42 U.S.C. § 1996; and

35. **WHEREAS,** Human Remains and Funerary Objects discovered on State or private land in Arizona will be treated in accordance with A.R.S. § 41-844 and A.R.S. § 41-865, respectively; and in California, in accordance with the Cal. Pub. Res. Code §§ 5097.98, 5097.991 and the Cal. Health & Safety Code § 7050.5(c); and

36. **WHEREAS,** Termination of the agreement by an Invited Signatory shall only apply to lands under their respective jurisdiction. In such case, the BLM shall comply with 36 C.F.R. § 800, subpart B, for all undertakings affecting the terminating Signatory's lands within the scope of the PA. Dispute resolution (Stipulation XV) is strongly encouraged prior to termination

NOW, THEREFORE, the BLM, the Arizona SHPO, the California SHPO, CRIT, and the ACHP (collectively, the Signatories) agree that the Undertaking shall be completed in accordance with the stipulations established in the PA in order to take into account the effects of the Undertaking on historic properties. The BLM shall ensure that the Undertaking is carried out in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties:

STIPULATIONS

I. **DEFINITIONS USED IN THIS PA:** Definitions used in this PA are included as Attachment 2.

II. DESCRIPTION OF THE UNDERTAKING

A. The Undertaking encompasses the construction phase of the proposed transmission line project that takes place after the BLM ROW grant is issued and includes the construction of associated project facilities as well as the reclamation of areas used during construction but not necessary for operation and maintenance of the facilities. The Undertaking may include surveys, geotechnical testing, engineering, mitigation planning and design, or other activities initiated prior to construction of the transmission line and project facilities. The potential effects to historic properties will be the most extensive and substantial during the construction phase. The Undertaking also encompasses those activities necessary to operate and maintain the transmission line and project facilities over the life of the project. Operation and maintenance activities are approved in the ROW grant and confined to the areas specified in the ROW grant. This PA stipulates the process necessary to comply with Section 106 obligations for construction and reclamation as well as operation and maintenance of the proposed transmission line and associated facilities. A detailed description and a map of the Undertaking are included as Attachment 1.

B. Changes to approved operations and maintenance activities, including new actions on BLM lands outside of the approved BLM ROW grant, require BLM approval and may necessitate a separate Section 106 review and additional ROWs, subject to Stipulation XI.

C. If decommissioning occurs in the future, it will be considered a separate undertaking. The ROW grant shall stipulate, and the BLM shall ensure, that decommissioning will be considered a new action for Section 106 review, and that historic properties potentially affected by decommissioning will be considered in accordance with the pertinent laws, regulations, and policies extant at the time.

III. TRIBAL CONSULTATION

A. The BLM acknowledges its government-to-government responsibilities to the Tribes for Section 106 review and implementation of the PA and commits to accord tribal officials the appropriate respect and dignity as leaders of sovereign nations. The BLM shall facilitate meaningful consultation with the Tribes during the planning and implementation of the Undertaking.

B. The BLM will continue to engage the Tribes in meetings and discussions regarding the Undertaking. The BLM has invited the Tribes to engage at the earliest stages of the Undertaking to gather ethnographic information, property information, and other resource information to help identify areas which may be of religious and cultural significance to them and which may be eligible for the National Register of Historic Places (NRHP). Engaging in consultation at the earliest stages of project planning has assisted and will continue to assist the BLM in identifying significant issues and resources that may not be identified during conventional cultural resources survey and identification efforts. As part of the consultation process the BLM shall endeavor to provide information and maps that are easily understood by tribal representatives.

C. The BLM will continue to discuss and seek agreement with the Tribes regarding processes of consultation that are clear, open and transparent. If a Tribe would like

government-to-government consultation with the BLM will honor the request on an individual basis at the earliest possible time. If a Tribe would like to establish regular meetings with a BLM Field Office regarding the Undertaking, the Tribe and the BLM Field Manager should consult to develop specific procedures for consultation.

D. The BLM will require the Applicant to hire tribal monitors during archaeological surveys, construction monitoring, reclamation, and archaeological field work activities for the Undertaking, including the monitoring of ground-disturbing activities. The BLM will ensure that tribal participation is in coordination with archaeological surveys by the Applicant's cultural resources consultant. Procedures for participation during the construction and reclamation activities of the Undertaking will be coordinated with all the Tribes with whom the BLM consulted through the development of a Tribal Participation Plan specific to the Undertaking. All the Tribes with whom the BLM consulted will be afforded the opportunity to be hired by the Applicant to monitor and be on site during ground disturbance construction activities for facilities, roads, or other components associated with the Undertaking.

E. The objective of consultation is for BLM to seek agreement with the Tribes regarding matters arising in the Section 106 process. The BLM will identify as early as possible any potential historic properties, properties with cultural or religious significance to Indian tribes (including landscape-level resource concerns), or tribal concerns associated with the Undertaking in order to avoid, minimize or mitigate effects on historic properties.

F. The BLM shall make reasonable attempts to contact the Tribes to confirm that the party has elected not to comment or agrees with the course of action proposed by the BLM. "Reasonable attempts" include two forms of written communication, including a formal letter and/or email to the Tribal Chairperson and designated representative for the Tribe; and two follow-up phone calls to the Tribe's designated representative. Unless otherwise agreed to, the BLM shall respond to any request from a Tribe for information and clarification about any proposed language or element that is part of the implementation of the PA, within thirty (30) calendar days of receipt of the request. Where the time period for review or comment has passed after such reasonable attempts, the BLM may proceed with the course of action proposed.

G. The BLM shall coordinate with the CPUC on tribal consultation efforts for all non-Federal lands in California, including outreach, information sharing, and other activities, to allow the CPUC to fulfill its tribal consultation obligations under CEQA. The CPUC is responsible for tribal consultation under California State law.

H. In all instances where the BLM provides documents for review by the THPO or Tribes, the BLM shall either incorporate requested changes into the document or provide a written explanation of its inability to make such changes. The BLM shall consult with the appropriate reviewer(s) to resolve differences and/or disagreements.

IV. STANDARDS AND QUALIFICATIONS

A. PROFESSIONAL QUALIFICATIONS. The BLM will ensure that all actions prescribed by this PA shall be carried out by or under the direct supervision of a person or persons meeting, at a minimum, the applicable professional qualification standards

set forth in the Office *of* Personnel management professional qualifications for archaeology and historic preservation, or the Secretary of the Interior's Professional Qualification Standards (PQS), as appropriate (48 Fed. Reg. 44739 dated September 29, 2983, and C.F.R. § 61. The PQS are available online at: http://www.nps.gov/history/local-law/arch_stnds_9.htm.

1. Individuals must also meet the regional experience or other requirements of a BLM-issued Cultural Resources Use Permit issued under the authority of the Archaeological Resources Protection Act of 1979 (ARPA) (16 U.S.C. 470aa-mm) and U.S.C. 431-433) and its regulations (43 C.F.R. § 7), the Antiquities Act of 1906 (P. L. 59-209; 34 Stat. 225, 16 U.S.C. 431-433) and its regulations (43 C.F.R. § 3), and/or the Federal Land Policy and Management Act of 1976 (FLPMA) (Public Law 94-570). However, nothing in this Stipulation may be interpreted to preclude any party qualified under the terms of this paragraph from using the services of persons who do not meet the PQS, so long as the work of such persons is directly supervised in the field and laboratory by someone who meets the PQS.

2. On State lands in Arizona, all actions prescribed by this PA shall be carried out by or under the direct supervision of an AAA-permitted consultant.

B. DOCUMENTATION STANDARDS. The BLM will ensure that reporting on and documenting the actions cited in this PA shall conform to every reasonable extent with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 Fed. Reg. 44716-40 dated September 29, 1982) and take into consideration the ACHP's handbook, *Section 106 Archaeology Guidance* (http://www.achp.gov/archguide) as well as *Guidelines for Identifying Cultural Resources* BLM Manual H-8110 and Guidelines for Evaluating and Documenting Traditional Cultural Properties, National Register *Bulletin 38*, 1989. The following guidelines are available during development of this PA. Should the guidelines be updated after the execution of the PA, the latest versions will take precedent. In the event that any guidelines are modified in the future to conflict with this PA, the BLM shall notify all Consulting Parties and will consult to determine how this PA should be revised, if necessary, pursuant to **Stipulation XVI**.

1. Arizona:

a. The BLM will ensure that on State land in Arizona, all activities and documentation shall be consistent with the AAA and its implementing rules. Additionally, rules for implementing the AAA and AZ SHPO guidance on implementing the Arizona State Historic Preservation Act shall conform to specifications and guidelines contained in *Guidelines for State Historic Preservation Act.* Additionally, *AZ SHPO Standards for Documents Submitted for SHPO Review in Compliance with Historic Preservation Laws* (Revised January 2016) shall guide inventory reports for all work done in Arizona.

b. In Arizona, the Applicant shall ensure that its cultural resources contractor obtains the appropriate AAA permit from the ASM prior to conducting archaeological work for the Undertaking.

2. California: The BLM will ensure that on State land in California, all activities and documentation shall be consistent with the standards as outlined in the California Office of Historic Preservation Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (ARMR Guidelines) for the Preparation and Review of Archaeological Reports.

3. CRIT: The Applicant shall ensure that its cultural resources contractor obtains any necessary permits from CRIT prior to working on CRIT lands. Afterwards, the Applicant's cultural resources contractor shall approach the BIA to consult and determine the need to obtain an ARPA permit.

C. CONFIDENTIALITY. Information concerning the nature and location of any historic property, archaeological resource (historic or prehistoric), or other confidential cultural resource will be considered sensitive and protected from release under the provisions of the Freedom of Information Act (FOIA) (5 U.S.C. § 552, as amended by Public Law No. 104-231, 110 Stat. 3048), Section 9 of ARPA (16 U.S.C. § 470hh), Section 304 of the NHPA (54 U.S.C. § 307103), and Executive Order 13007. For the purposes of consultation under this PA, the BLM may release certain information for the benefit of the resource. Consideration may result in the sharing of summary reports that do not contain sensitive location information. Other than the respective SHPOs/THPO and the ACHP, the BLM will only consider the release of complete reports or other information concerning the nature and location of any historic property, archaeological resource, or other confidential cultural resource to a Consulting Party with a demonstrated interest in the information requested and a signed data sharing agreement. The data sharing agreement shall include provisions to ensure protection to tribal sovereign immunity. It shall also permit tribal members to review reports and information without individually signing the agreement, provided that the affiliated THPO or tribe has signed the data sharing agreement. All Consulting Parties will ensure that all sensitive information is protected from release.

D. CURATION STANDARDS.

1. Collections from Federal Lands:

a. All records and materials removed from Federal lands as a result of the actions required by this PA shall be curated in accordance with 36 C.F.R. § 79, and the provisions of the NAGPRA, 43 C.F.R. § 10, as applicable.

b. Materials that are archaeological resources under ARPA, NAGPRA materials, or historic properties under the NHPA are subject to the processes and procedures set forth in the applicable laws and regulations. In accordance with 43 C.F.R. 7.33, the BLM land manager may determine that certain materials are not or are no longer of archaeological interest and therefore not considered archaeological resources. For those materials that are determined to not be archaeological resources under 43 C.F.R 7.33, the BLM land manager may determine appropriate conservation measures, including, but not limited to, avoidance, leaving materials in situ or relocated nearest the discovery locale as practicable, reburial, curation, or any other measure as the BLM land manager deems appropriate under applicable laws, regulations, and BLM policies related to such activity. Any reburial or conservation

decisions will be conducted by or in consultation with the relevant Tribes or their representatives, as provided for in the Tribal Participation Plan.

2. Collections from State Lands:

a. All artifacts recovered from lands owned, controlled or operated by the State of Arizona, including associated records and documentation, shall be curated at the ASM, or an approved and certified repository, in accordance with the standards and guidelines required by the ASM.

b. To the extent permitted under Sections 5097.98 and 5097.991 of the California Public Resources Code and by private property owners, the materials and records results from the actions required by this PA for lands owned, controlled or operated by the State of California and private lands in California, including associated records and documentation, shall be curated in accordance with 36 C.F.R. § 79.

3. Collections from CRIT lands: On lands within the Colorado River Indian Reservation, all records and materials resulting from the actions required by this PA shall be managed in accordance with tribal law, including any CRIT reburial policy.

4. Collections from Private Lands: To the extent a private landowner requests that the materials be removed from the site, the BLM will seek to have the materials donated through a written donation agreement developed in consultation with the Tribes or their representatives. The BLM will seek to have all materials from each State curated together in the same curation facility within the State.

V. IDENTIFICATION, EVALUATION, AND FINDINGS OF EFFECT

A. AREAS OF POTENTIAL EFFECTS (APEs, see map in Attachment 1) are defined as:

1. Direct effects: The APE for direct effects for the Undertaking will include all areas likely to be affected by construction and reclamation activities. This APE will include the 200-foot-wide permitted ROW corridor for one 500 kV transmission line and access roads (within the corridor), plus 100 feet on either side of the corridor (400 feet total width). This width will allow for adjustments in transmission line or access road placement to avoid when possible any modern infrastructure, natural features such as drainages and bedrock outcrops, or cultural resources such as archaeological sites and historic buildings or structures.

a. Proposed new access routes and existing roads requiring improvement outside the transmission line ROW will have a 150-foot wide direct effects APE (75 feet from centerline).

b. The direct effects APE for staging areas, borrow areas, substations and other transmission infrastructure will include the footprint of the facility and a buffer of 250 feet around the footprint of the proposed activity/facility.

c. The direct effects APE for pulling/tensioning sites that fall outside the ROW will be the footprint of the site plus a 250-foot buffer around the footprint of these sites.

d. The BLM has provided the APE definitions above concurrently to the SHPOs/THPO and Consulting Parties for a single thirty (30)-calendar-day review and comment period.

2. Indirect effects: There are two APEs to account for indirect effects, one that addresses effects from the construction of the transmission line components that will be visible after construction, and one that addresses atmospheric effects from new or maintained access routes. The indirect effects APE for visible transmission line components (consisting of the transmission towers and the series compensation station) shall be within 3 miles from the center of the ROW unless consultation identifies a reasonable need to expand this APE in certain locations. The indirect effects APE for new or maintained roads (includes new or maintained roads within the 200-foot ROW) shall be 1/8-mile from the centerline of the access road, or to the nearest existing road, transmission line tower, or other pre-existing built feature on the landscape, as applicable.

a. BLM will use a Geographic Information System (GIS) view shed analysis to identify areas in both of the indirect effects APE from which the Undertaking may be visible.

b. The indirect effects APE may extend beyond the 1/8-mile and 3-mile conventions to encompass properties that have traditional religious and cultural importance, including traditional cultural properties (TCPs) or other geographically extensive historic properties, such as trails, when a Consulting Party requests and the BLM and SHPO/THPO concur that the APE be extended.

3. Cumulative effects: The APE for cumulative effects shall be the same as that for direct and indirect effects combined and shall be reasonably foreseeable.

4. Final APE

a. The final APE is shown on the map included with Attachment 1, the Agency Preferred Alternative in the Draft Environmental Impact Statement published on August 31, 2018.

b. Should the APE require modification as a result of a refinement in the construction POD, the BLM will consult with the Consulting Parties for no more than fifteen (15) calendar days to establish the new APE. The BLM will then prepare a description and map(s) of the modified APE and any additional identification efforts and provide them to the Consulting Parties within thirty (30) calendar days of the day upon which agreement was reached.

B. Identification of Historic Properties and/or Historic Districts: The BLM shall ensure that the Applicant completes a cultural resources inventory to identify historic properties and/or historic districts that could be affected by the Undertaking to include the following reports:

1. Class I Literature Review, Ethnographic Overview, and Research Design and Work Plan

a. A Class I records search and literature review (as defined in Attachment 2) of Federal and State agency files has been completed for a 1.0-mile wide corridor

(.5 miles on either side of centerline) along all alternatives of the proposed Undertaking. The Class I report will inform all subsequent phases and will be used as a reference document to support the Class III surveys (as defined in Attachment 2) conducted for this Undertaking. The BLM will ensure that additional file searches are conducted as needed to address changes in the APE and to be current in advance of any additional Class III inventories.

b. The BLM has consulted and will continue to consult with the Tribes to identify any resources that have cultural or religious significance to the Tribes.

i. The Applicant, through its cultural resources contractor, has completed an ethnographic literature review (Ethnographic Overview) based on the review of existing information about resources with cultural or religious significance to the Tribes.

ii. The BLM requires the development of an Ethnographic Assessment for a specific geographic area within the Undertaking's APE because a Tribe has indicated that they have additional information not included in the Ethnographic Overview that should be considered in the Section 106 identification efforts. All the Tribes with whom the BLM consulted will be afforded the opportunity to participate in the Ethnographic Assessment per a work plan to be developed by the Applicant's cultural resources contractor and to review the resulting draft report.

c. The BLM has submitted the Class I report (Brodbeck and Glenny 2017 – See Attachment 3. References Cited) and Ethnographic Overview (Leard and Brodbeck 2017) to the SHPOs, Tribes, and Federal and State land managing agencies for review and comment and to seek any additional information regarding resources in the APE with cultural or religious significance to the Tribes.

d. Research Design and Work Plan: The information in the Class I report has been used to develop a Research Design and Work Plan for all cultural resources inventory studies for the proposed Undertaking. The BLM has submitted the Research Design and Work Plan (Brodbeck et al. 2017) to the Consulting Parties for a thirty (30) day review and comment period and has concurrently requested SHPOs/THPO review and concurrence on the proposed identification efforts. The Research Design and Work Plan describes the proposed Class III inventory, the geo-archaeological study, the built environment survey, and the identification and assessment of effects to historic properties in the indirect effects APE.

e. The AZ SHPO commented on the above documents, including the geo-archaeological study referenced in **Stipulation V.B.2** below, in a letter to the BLM dated August 23, 2017. The CA SHPO concurred in a letter to the BLM dated November 16, 2017. The CRIT THPO commented on the above documents in a letter to the BLM dated November 9, 2017.

2. Geo-archaeological Study: At the BLM's request, the Applicant, through its cultural resources contractor, has completed a geo-archaeological study of the entire

direct effects APE (Brodbeck et al 2017), which is included in the Research Design and Work Plan (**Stipulation V.B.1.d**). The study considers natural and archaeological site formation processes to determine the likelihood of subsurface archaeological remains within the APE. The purpose of the geo-archaeological study is to assist in the identification of locations where archaeological remains that cannot be seen on the surface are likely to be found, in anticipation of the Class III inventory and construction.

3. Class III Inventory of Geotechnical Testing Locations

a. The Applicant, through their cultural resources contractor, will complete a Class III inventory of geotechnical testing locations required prior to final engineering.

b. The Applicant, through their cultural resources contractor, will submit the Class III Inventory Report of geotechnical testing locations to the BLM Upon approval by the BLM, the report will be submitted to the SHPOs/THPO and the CPUC for a thirty (30)-calendar day review.

4. Pre-Construction Class III Inventory: Any part of the APE for direct effects for the final selected route that has not already been inventoried to current standards, or not considered by the BLM, the SHPOs/THPO, or other land managing agencies to be adequately inventoried, and which can be accessed safely and legally, shall be completely inventoried at a Class III level to the standards of the BLM and SHPO for Arizona and California as detailed in **Stipulation IV.A and B.** Determinations of eligibility, findings of effect, and possible treatment shall be made by the BLM in consultation with the SHPOs/THPO and appropriate Consulting Parties, including Tribes. Identification efforts shall be performed regardless of the ownership (public, private, State, or Tribal) of the lands. The Applicant shall be responsible for gaining access to non-BLM lands. In the event access to non-BLM lands is not obtained, the Applicant will provide documentation to BLM sufficient to demonstrate two (2) unsuccessful efforts to secure access or showing that the landowner has affirmatively denied such access. Where access cannot be obtained, resorting to other means for survey such as aerial imagery may be used to determine likelihood of presence of historic properties. The Class III Inventory will be conducted with sensitivity for locations or other features identified as important through Tribal consultation or ethnographic studies.

All previously recorded cultural resources within the direct effects APE will be re-visited and the associated records updated and revised as appropriate, including NRHP eligibility recommendations and determinations. Previously recorded cultural resources and newly recorded cultural resources whose boundaries lie partially within or straddle the direct effects APE will be fully recorded outside the direct effects APE, to the extent practical and within .25 miles of the direct effects APE, regardless of surface ownership in order to provide context for any necessary treatment within the direct effects APE.

5. Historic Built-Environment Study: The BLM will require the Applicant, through their cultural resources contractor, to complete a separate Historic Built-Environment study for the entire APE to identify built-environment resources

within the direct and indirect APE and assess their eligibility for listing in the NRHP. For the APE for direct effects as defined in **Stipulation V.A**, all historic and in-use linear cultural resources such as canals, roads, trails, and railroads will be identified and recorded where they intersect the APE and will be fully recorded within the APE.

C. Determination of Eligibility and Finding of Effect

1. For each cultural resource within the APE, the BLM shall consult with the SHPOs/THPO and any Native American tribe that attaches religious and cultural significance to any identified resource and other Consulting Parties to determine NRHP eligibility pursuant to 36 C.F.R. § 800.4(c)(1) following guidance in *How to Apply the National Register Criteria for Evaluation.* If the BLM and the SHPOs/THPO cannot reach concurrence on NRHP eligibility, the documentation will be forwarded to the Keeper of the National Register (Keeper) for a formal determination.

2. The Applicant, through their cultural resources contractor, will use existing resources to the extent available to identify historic properties eligible under Criteria A, B and/or C, that fall within the indirect effects APE and that may be affected by the Undertaking. The Applicant will ensure that ethnographic and other information provided by the Consulting Parties will be included in this identification and assessment effort, including comments on the eligibility of and effects on TCPs. Some historic properties eligible under Criterion D may be included at the BLM's discretion, if requested by a Consulting Party. This analysis will include potential impacts to historic properties within the indirect effects APE from increased access occurring as a result of the Undertaking. The methods for assessing indirect effects are described in the Research Design and Work Plan.

The BLM shall make findings of the effects to historic properties identified in the APE in consultation with the SHPOs/THPO after Consulting Party comment. If the BLM and the SHPOs/THPO cannot reach concurrence on findings, the question will be referred to the ACHP, per 36 C.F.R. § 800.5(c)(2).

D. Reporting

1. For each State, the Applicant shall prepare a comprehensive Inventory Report or Reports incorporating findings from the Class III Intensive Field Inventory, the geo-archaeological study, the Historic Built-Environment study, and the study on the effects of the Undertaking on historic properties in the APE for indirect effects. The comprehensive Inventory Report or reports will include a summary of results from the Ethnographic Overview and Ethnographic Assessment; and any additional information provided by the Consulting Parties about places of concern to them, the location of those places in relationship to the Undertaking, and an assessment of the effect of the Undertaking on those places. The reports shall include recommendations on NRHP eligibility and treatment recommendations for historic properties within the APEs for direct, indirect and cumulative effects of the Undertaking as described in **Stipulation V.A**. Any assessment that avoidance during construction is not possible will be supported by documentary evidence from the Applicant.

2. The Applicant shall submit drafts of the Inventory Report for each State to the BLM. The BLM will provide the reports to the SHPOs, THPO, appropriate land managers, the ASM, the CPUC, and the Tribes within each State for review, concurrent with BLM review. These parties will provide written comments to the BLM within sixty (60) calendar days regarding:

a. The adequacy of the identification effort;

b. The NRHP eligibility of the cultural resources identified;

c. The assessment of effects of the Undertaking on the historic properties identified.

d. The presence of TCPs or any properties of traditional religious or cultural importance to the Tribes that were not identified in the inventory but that may be affected by the Undertaking.

3. The BLM shall ensure that comments received within sixty (60) calendar days are considered in development of the revised Inventory Reports. The BLM shall submit a consolidated set of comments on the draft Inventory Report within fifteen (15) calendar days following end of the review period. The applicant shall have forty-five (45) calendar days to address comments and return a revised Inventory Report to the BLM. The BLM will submit the revised Inventory Report to the appropriate SHPO/THPO, Tribes, and Consulting Parties for a sixty (60)-calendar-day concurrent review, and will request SHPO/THPO concurrence on the BLM's determinations of NRHP eligibility and treatment recommendations for each historic property identified. The BLM will notify the Consulting Parties via electronic mail (email) of the submittal and the date that comments are due. If the sixty (60)-calendar-day review time frame cannot be met, the SHPO/THPO, Tribe or Consulting Party will notify the lead BLM Office main point of contact by email requesting a review extension. The lead BLM Office will determine whether to grant an extension, not to exceed an additional thirty (30) calendar days.

4. The Inventory Reports will provide the following (except for unevaluated cultural resources [see definition in Attachment 2] or properties found during possible future variances and discoveries):

a. Characterization of the efforts to identify historic properties

b. Inventory of cultural resources and recommendations of NRHP eligibility

c. Recommendations for treatment measures to be applied to historic properties affected by the Undertaking.

VI. RESOLUTION OF ADVERSE EFFECTS: The BLM, in consultation with the Applicant, the SHPOs/THPO, and Consulting Parties, shall ensure that an HPTP is developed and implemented to avoid, minimize and/or mitigate Project-related adverse effects on historic properties.

A. Avoidance

1. The BLM shall make every reasonable effort to avoid adverse effects to historic properties, including those of traditional religious and cultural significance to Tribes, with input from Consulting Parties and affected Tribes.
2. Avoidance measures for historic properties may include (but are not limited to) realignment of the transmission line, fencing of historic properties with a buffer zone during construction, monitoring of construction near the boundaries of historic properties, or placing towers, maintenance roads and ancillary facilities outside of the boundaries of historic properties.
3. BLM will ensure that the Applicant, through their cultural resources contractor, includes a description of these proposed efforts for each applicable historic property in the Class III Inventory Report and in the applicable State HPTP.

B. Minimization of Adverse Effects

1. When complete avoidance of adverse effects to historic properties is not possible, the BLM shall ensure that the Applicant, in consultation with the Consulting Parties, makes a good faith effort to minimize adverse effects on historic properties by efforts minimizing the visual effects of the Undertaking.
2. The BLM shall ensure that the Applicant, through their cultural resources contractor, includes a description of these proposed efforts for each applicable historic property in the Class III Inventory Report and in the applicable State HPTP.

C. The BLM shall ensure that the Applicant, through its cultural resources contractor, prepares an HPTP for each State that addresses the effects of the proposed Undertaking on historic properties, including properties of traditional religious and cultural importance to Tribes, and TCPs. The HPTP shall address direct, indirect and cumulative effects from construction and reclamation as well as from operation and maintenance of the proposed transmission line and associated facilities. The HPTP will be incorporated into the POD as an appendix.

D. The HPTPs will be consistent with the Secretary of the Interior's Standards for Archeology and Historic Preservation (48 FR 44716) (*Federal Register*, September 29, 1983), hereinafter referred to as Secretary's Standards; the ACHP's Section 106 Archaeology Guidance (2009); and all applicable NPS guidance for evaluating and documenting NRHP properties (e.g., *Guidelines for Evaluating and Documenting Traditional Cultural Properties*, *Guidelines for Evaluating and Documenting Rural Historic Landscapes*); and the Rules Implementing the AAA in Arizona as well as the guidelines in California.

E. The HPTPs will include treatment measures developed through the efforts of all Consulting Parties that address adverse effects on all historic properties that will be adversely affected.

F. The HPTP must include the following information:

1. All identified historic properties within the APE by land ownership and by township. The HPTPs will identify the specific avoidance, minimization, and/or treatment strategies proposed to address the direct, indirect, and cumulative adverse effects of the Undertaking on historic properties. Any finding that avoidance during

construction is not possible will be supported by documentary evidence from the Applicant.

2. Research questions and goals that are applicable to the Undertaking area and can be addressed through data recovery and archival studies, along with an explanation of their relevance and importance. These research questions and goals will incorporate the concept of historic contexts as defined in *National Register Bulletin 16*.

3. A description of fieldwork and analytical methods and strategies applicable to the Undertaking, along with an explanation of their relevance to the research questions. If phased data recovery will be employed, describe the fieldwork and analytical methods and strategies that will be employed during each phase. Treatment methods will be developed for each class of property identified in the Inventory Report and may include, but are not limited to, excavation, archival research, ethnographic studies, and oral history, as appropriate and as agreed upon by the Consulting Parties.

4. The level of effort to be expended on the treatment of each property. For archaeological data recovery, this will include methods of sampling, i.e., sample size, and rationale for specific sample unit selection.

5. Data needs for each research question, i.e., items (for example, ceramics, obsidian, thermal features) that need to be present to be able to address the research question.

6. Results of tribal consultation regarding the incorporation of tribal perspectives into the cultural history, research design, data recovery/treatment methodology, analysis and interpretation.

7. A plan for the use of tribal monitors during archaeological field work.

8. Professional qualifications of staff, including archaeological field personnel, laboratory and analysis personnel, personnel in charge of report writing, and subcontractors.

9. Permits required and obtained.

10. Curation arrangements.

11. Project suspension/termination plan.

12. Monitoring and Discovery plan, as described in **Stipulation VIII** below.

13. Protocol for sensitive treatment of human remains, as described in **Stipulation VIII** below.

14. Historic Properties Management Plan (HPMP), as described in **Stipulation IX** below. The HPMP describes management of historic properties during operation and maintenance.

15. Treatment measures will include but not be limited to those that address public outreach as appropriate, such as journal articles, public site visits, brochures, or web sites focusing on the historic properties impacted by the Undertaking. Any proposed public outreach will be developed in consultation with the Tribes to ensure that sensitive cultural resource material is kept confidential.

16. Treatment measures may include but not be limited to the synthesis of regional data and the study of related collections.

G. The HPTPs will provide a table listing each historic property, including:

1. The site number and name of the historic property or unevaluated property by land ownership and by township, range, and section number. Locational information for historic properties shall be included as an appendix that can be redacted for the version of the HPTP available to the general public;

2. A brief description of the historic property or unevaluated property;

3. The type of disturbance that will affect the historic property or unevaluated property;

4. For unevaluated properties, the testing plan for determining the eligibility of the property; for nature and extent testing; and for establishing required treatment;

a. The BLM will ensure that the Applicant, through their cultural resources contractor, implements the approved testing plan in the HPTP and submits a draft testing report including eligibility and treatment recommendations to the BLM.

b. BLM shall review the testing report and provide comments to the Applicant within fifteen (15) calendar days. The Applicant shall respond to the BLM's comments and submit a revised testing report within fifteen (15) calendar days of receipt of comments. Upon the BLM's approval of the testing report, the BLM will submit the eligibility determinations, the treatment recommendations, and the supporting reports for unevaluated cultural resources via email and regular mail to the respective SHPOs/THPO and land manager as well as to the CPUC in California with a request for concurrence. The SHPOs/THPO and land manager will respond to the BLM within fifteen (15) calendar days. If the SHPOs/THPO or the land manager do not respond to the BLM within fifteen (15) calendar days, the BLM will make a good faith effort to contact the entity via email or telephone, rather than assume concurrence with the determination(s) of NRHP eligibility. A "good faith effort" includes two forms of communication, including an email and a telephone call to the SHPOs/THPO or land manager point of contact for the Undertaking. After no response to a good faith effort, the BLM will proceed.

c. Where resources are identified that are evaluated as not eligible under Criteria A-C, and where their Criterion D values are unknown but will be avoided by project design or by implementing protection measures, the BLM will treat such resources as eligible for the NRHP under Criterion D without formal evaluation, and their significant values will be avoided. In California, the Applicant must submit a formal letter committing to the avoidance of any resources that are unevaluated under Criterion D; this applies to resources identified on Federal and non-Federal lands. Any such resources must be included in the HPMP.

5. The nature or kind of each required treatment measure (avoidance, minimization, mitigation) pertaining to each historic property (e.g., landscape photography, archaeological data recovery, etc.);

6. The identification of treatment measures, if any, which must be completed prior to authorization of ground-disturbing activities (e.g., barricading or fencing, archaeological data recovery, landscape photography) and/or those measures which may be completed after authorization of ground disturbance (e.g., historical research, installation of an interpretive kiosk, public education materials, etc.); and

7. The documentation and reporting procedures for each proposed treatment measure, including data management and dissemination methodologies and a proposed schedule of reports.

H. The HPTP may include but is not limited to the following examples of treatment measures for adverse effects:

1. Treatment measures for tribal values that focus on benefit to tribes through public outreach or other means; completion of NRHP nomination forms; Historic American Building Survey, Historic American Engineering Record, and Historic American Landscape Survey documentation to be submitted to the Library of Congress; documentation of local or regional resources to be submitted to the appropriate SHPO/THPO or State Archives; and partnerships and funding for public archaeology projects; print publication (brochure/book); digital media publication (website/podcast/video).

2. Treatment measures may also include, but not limited to, conservation easements, including easements held by a Tribe, OR purchase of land containing historic properties for transfer to a protective preservation organization or a Tribe, with willing consent of landowner

a. These options should only be considered in rare and special cases because of their difficulty of implementation and preservation in perpetuity.

b. Implementation of either of these options would require a commitment to long term monitoring, a second legally binding agreement document, and a third-party preservation entity to hold the easement or covenant, and the involvement of the SHPO/THPO.

I. Review and Approval of the HPTPs

1. The Applicant shall submit the draft HPTP to the BLM for initial review and comments. BLM shall review the draft HPTP and provide comments to the Applicant within thirty (30) calendar days. The Applicant shall respond to BLM's comments and submit a revised HPTP within thirty (30) calendar days of receipt of comments. Upon approval by the BLM, the BLM shall provide the SHPOs/THPO and other Consulting Parties within each State a copy for review, requesting comments on the adequacy of the proposed treatment measures. These parties will be notified of the review period via email and will have sixty (60) calendar days to review and comment on the plan. If the SHPO/THPO does not respond to the BLM within sixty (60) calendar days, the BLM will contact the SHPO/THPO via email or

telephone rather than assume concurrence with the proposed treatment measures embodied in the respective HPTP. After a good faith effort, the BLM will proceed.

2. The BLM will convene at least one consultation meeting to discuss comments on the HPTP in each State with all interested Consulting Parties after the sixty (60)-calendar-day comment period. Tribes may request individual government-to-government consultation meetings, rather than or in addition to participating in the collective consultation meeting. If the sixty (60)-calendar-day review time frame cannot be met, the SHPO/THPO, Tribe or Consulting Party will notify the lead BLM Office main point of contact by email requesting a review extension. The lead BLM Office will determine whether to grant an extension, not to exceed an additional thirty (30) calendar days.

3. The BLM shall consolidate the comments from Consulting Parties in each State and advise the Applicant of necessary revisions to the draft HPTP. The BLM shall ensure that all comments are taken into consideration in revising the HPTP and will provide the revised HPTP to the SHPO/THPO for a twenty-one (21)-calendar-day review period. Comments from Consulting Parties will be addressed in the final HPTP. The BLM will notify and provide the Applicant and the Consulting Parties with a copy of the final HPTP when approved.

J. During the treatment phase, if deviations to the approved HPTP are warranted, the Applicant will submit proposed deviations from the HPTP to the BLM for review prior to implementation. The BLM shall provide copies of the proposed deviation via email to the appropriate SHPO/THPO, the Tribes, the ASM and land manager(s) within the respective State for a five (5)-calendar-day review. The BLM shall consider comments received within the review period and shall determine the adequacy of the proposed deviation. The BLM will notify the Applicant if and when the deviation has been approved.

VII. MONITORING, POST-REVIEW DISCOVERIES, AND UNANTICIPATED EFFECTS

A. All monitoring shall follow clearly stated objectives and methodologies for achieving those objectives delineated in the Monitoring and Discovery Plan (MDP) or the HPMP, both of which are parts of the HPTP, such as to ensure avoidance or minimization during construction and reclamation; to measure the effectiveness of avoidance, minimization and treatment measures; to assess the effects of operations and maintenance activities; or to help define treatments for historic properties with long-term concerns. The MDP describes the monitoring and discovery protocol during construction and reclamation. The HPMP describes the monitoring and discovery protocol during operations and maintenance.

B. Monitoring During Construction and Reclamation

1. The Applicant, through their cultural resources contractor, shall conduct monitoring during construction activities as described in the MDP, to manage post-review discoveries and unanticipated effects during project construction. Monitoring locations will include all areas identified in the MDPs in the HPTPs, including areas of ground disturbance not associated with historic properties. Monitoring

procedures, the evaluation of NRHP eligibility, tribal consultation, and the treatment of discovered historic properties shall be handled in accordance with the MDPs in the HPTPs.

2. Post-review discoveries: Any cultural resources determined by the BLM to be historic properties that were discovered or adversely affected during construction and not subjected to pre-construction treatment will be addressed in accordance with the MDP.

3. Roles and responsibilities of the Applicant, the Applicant's cultural resources contractor, the BLM, and the Tribes, including those pertaining to the determinations of eligibility, and treatment of discoveries, are described in the MDP.

4. The MDP includes a Tribal Participation Plan to be prepared as an appendix so that it can be used as a stand-alone document. The BLM will require the Applicant to hire tribes' designated representatives (tribal cultural consultants or tribal monitors) to monitor and be on site during Class III cultural resources inventory, as well as all ground disturbing construction activities for facilities, roads or other components associated with the Undertaking, post-construction reclamation activities, and any archaeological field work required by the HPTP or any subsequent plan. The Tribal Participation Plan describes the logistics and protocols for tribal participation.

C. Post-Review Discoveries

1. Cultural Resources: All discoveries made during construction shall be addressed in accordance with the MDP, which is a part of the HPTP. A process for timely Tribal notification of discoveries shall be included in the MDP.

a. In Arizona on State and private land, the BLM shall ensure that the discoveries are treated according to A.R.S. § 41-841, and that the SHPO is notified of the discovery.

b. In California on State and private land, the BLM shall ensure that discoveries follow the process in California Public Resources Code (PRC) Sections § 5020 et seq.; § 21000 et seq.; California Code of Regulations (CCR), Title 14, Chapter 3, Sections § 4850 et seq.; § 15000 et seq.; and that the SHPO is notified of the discovery.

2. Human Remains

a. The BLM and Applicant shall ensure that in the event human remains are discovered during the construction activities, work within 300 feet of the discovery will cease and the area will be secured; the Applicant will immediately contact the BLM authorized officer. The BLM will notify the appropriate County officials as outlined in the MDP.

b. The BLM and the Applicant shall ensure that any human remains, funerary objects, items of cultural patrimony, or sacred objects encountered during any construction activities are treated with the respect due such materials and consistent with the MDP.

c. The BLM shall ensure that any Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony discovered on Federal or tribal lands shall be treated in accordance with the provisions of NAGPRA and its implementing regulations at 43 C.F.R. § 10.

d. In consultation with the Tribes and prior to any ground disturbing work associated with construction and with the HPTP, the BLM shall seek to develop a written NAGPRA plan of action pursuant to 43 C.F.R. § 10.5(e) to manage the inadvertent discovery or intentional excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony.

e. On lands within the exterior boundaries of the Colorado River Indian Reservation, the CRIT THPO will be contacted and consulted to ensure compliance with NAGPRA and tribal law.

f. In Arizona, the BLM shall ensure that, in consultation with the ASM, human remains and/or funerary objects identified on State and/or private land, will comply with the methods and procedures within A.R.S. § 41-844 and A.R.S. § 41-865 and their implementing rules. The Applicant, through their cultural resources contractor and working through the ASM, shall obtain "burial agreements" with Indian tribes pursuant to Rules Implementing A.R.S. § 41-844 and A.R.S. § 41-865, which govern discoveries of human remains and funerary objects on State, city, county and private lands. The SHPO shall be notified of such discoveries.

g. In California, the BLM shall ensure that the Native American Heritage Commission is notified so that Native American human remains and/or funerary objects discovered on non-Federal lands in California are treated in accordance with the applicable requirements of the Cal. Pub. Res. Code §§ 5097.98, 5097.991 and the Cal. Health & Safety Code § 7050.5(c).

h. When the BLM has verified that the requirements of the NAGPRA and Arizona and/or California State laws and tribal law have been met, the BLM may authorize the Applicant to resume operations in the vicinity of the discovery, as described in the MDP.

VIII. HISTORIC PROPERTIES MANAGEMENT

A. The BLM shall ensure that an HPMP will be developed as part of the HPTP (but as a stand-alone document) to establish the protocol for the long-term management of historic properties during operations and maintenance. The HPMP will be developed in consultation with the SHPOs/THPO and the Consulting Parties. The HPMP will identify how historic properties will be managed throughout the operations and maintenance of the Undertaking. The BLM will ensure that the Applicant implements the terms of the HPMP, with BLM oversight.

B. The HPMP will prescribe the monitoring of or other protective measures for historic properties (such as fencing, barricades, limiting access, or other protective measures) that may be affected by operations and maintenance within the area of the ROW grant or by increased access to historic properties through the access road network associated with the Undertaking and the related risk of vandalism to those properties.

C. The HPMP shall lay out a protocol for monitoring and protective measures that includes:

1. The specific historic properties to be monitored or subjected to protective measures; the reason for monitoring of each historic property (e.g., proximity to Undertaking components with the potential for damage from operation and maintenance, a property identified as being of particular importance to a Tribe, a property especially susceptible to vandalism, etc.); and schedule for monitoring of each historic property;

2. How these historic properties will be avoided during operations and maintenance and how impacts would be minimized or mitigated if they could no longer be avoided during operations and maintenance;

3. The professional qualifications of archaeologists doing the monitoring;

4. A protocol for involving the Tribes in monitoring;

5. A protocol for the schedule, production and distribution of monitoring reports; and the review of monitoring reports;

6. The objectives that long-term monitoring would achieve as part of the effort to avoid, minimize and/or mitigate adverse effects to those properties.

IX. REPORTING

A. Preliminary/End of Fieldwork Report

1. Upon completion of fieldwork at each historic property or group of historic properties, the Applicant, through their cultural resources contractor, shall provide the BLM with a Preliminary/End of Fieldwork Report of treatment completed at that site. The Preliminary/End of Fieldwork Report will include a brief characterization of the site assemblage/contents, the types of analyses yet to be completed, and a brief description of how the provisions of the HPTP were implemented. The Preliminary/End of Fieldwork Report shall include a description of any deviations from the HPTP that were implemented and the reasons for such deviations.

2. BLM shall review the Preliminary/End of Fieldwork Report and provide comments to the Applicant within seven (7) calendar days. The Applicant shall respond to BLM's comments and submit a revised report within seven (7) calendar days of receipt of comments. After the BLM's approval, the BLM shall provide a copy of the Preliminary/End of Fieldwork Report for each site via email and regular mail to the appropriate SHPO/THPO and other Consulting Parties for review. For previously unevaluated sites subjected to eligibility testing (discussed in **Stipulation VI.G.4**), the review period will be fifteen (15) calendar days for comments and concurrence with eligibility determinations and findings of effect as well as review of the proposed treatment. For sites at which data recovery was conducted as per the HPTP, the review period for the adequacy of treatment measures will be fifteen (15) calendar days. The BLM shall consider comments submitted during the review period and shall consult with the appropriate reviewer(s) and SHPOs/THPO to resolve differences and/or disagreements. If the

SHPO/THPO does not respond to the BLM within fifteen (15) calendar days, the BLM will contact the SHPO/THPO via email or telephone rather than assume concurrence with the contents of the Report. After a good faith effort, the BLM will proceed.

B. Final Treatment Reports

1. The BLM shall ensure that the Applicant, through their cultural resource contractor, prepares a draft Final Treatment Report for each State that incorporates the results of all the site-specific Preliminary/End of Fieldwork Reports along with post-fieldwork data analysis and synthesis into a comprehensive regional overview for each State. The Final Treatment Reports will also include updated site forms that reflect treatment.

2. The BLM shall review the draft Treatment Reports and provide a copy to the appropriate SHPO/THPO and Consulting Parties for a sixty (60)-calendar-day review, and comment period. The BLM will notify these parties of the submittal and review periods via electronic mail. The BLM shall consider comments received during the review period and shall consult with the appropriate reviewer(s) to resolve differences and/or disagreements. If the SHPO/THPO does not respond to the BLM within sixty (60) calendar days, the BLM will contact the SHPO/THPO via email or telephone rather than assume concurrence with the contents of the Report. After a good faith effort, the BLM will proceed. If the sixty (60) calendar-day review time frame cannot be met, the SHPO/THPO, Tribe or Consulting Party will notify the lead BLM Office main point of contact by e-mail requesting a review extension. The lead BLM Office will determine whether to grant an extension, not to exceed an additional thirty (30) calendar days.

3. The BLM shall ensure that the Applicant prepares a revised Treatment Report that considers comments received on the draft Treatment Report. The BLM shall provide copies to the appropriate SHPO/THPO and other Consulting Parties for a concurrent thirty (30)-calendar-day review period. The BLM will notify these parties of the submittal and review periods via electronic mail. The BLM shall consider comments submitted during the review period and shall consult with the appropriate reviewer(s) to resolve differences and/or disagreements. If the SHPO/THPO does not respond to the BLM within thirty (30) calendar days, the BLM will contact the SHPO/THPO via email or telephone rather than assume concurrence with the Report contents. After a good faith effort, the BLM will proceed. The BLM shall notify the Applicant when the final Treatment Report has been accepted and will distribute the final version to the Consulting Parties.

4. All Final Treatment Reports will be completed within three years of the termination of fieldwork. The BLM may grant an extension in the event of extenuating circumstances.

X. INITIATION OF CONSTRUCTION ACTIVITIES

A. Land managing agencies may issue a Notice to Proceed (NTP) for any and all segments of the Undertaking only if such authorizations will not restrict subsequent measures to

avoid, minimize or mitigate the adverse effects to historic properties through rerouting of the corridor or placement of ancillary facilities.

B. For each segment of the Undertaking, upon the BLM's acceptance of the final Inventory Report for each State, as described in **Stipulation V**, the BLM, at its discretion and pending compliance with all other applicable laws and regulations, may issue an NTP on lands under any ownership or jurisdiction, subject to the appropriate jurisdiction's right-of-entry and ROW requirements, where there are no historic properties present.

C. For each segment of the Undertaking, upon the BLM's acceptance of the final HPTP for each State, the BLM, at its discretion and pending compliance with all other applicable laws and regulations, may issue an NTP on lands under any ownership or jurisdiction, subject to the appropriate jurisdiction's right-of-entry and ROW requirements, if historic properties are present but will not be adversely affected, and all stipulations in the HPTP are in place to ensure no adverse effect. Such measures may include a buffer for avoidance clearly marked in the field and provision for any monitoring, if required (as described in the approved HPTP/MDP/HPMP).

D. For each segment of the Undertaking, if historic properties are present and such historic properties may be adversely affected by the Undertaking, then the BLM may issue an NTP for that segment only if the BLM has accepted a final Preliminary/End of Fieldwork Report of treatment that has occurred at each site described in the HPTP for that segment, and in consultation with all Consulting Parties.

E. Contingent upon **Stipulation XI.D**, the BLM, at its discretion, and pending compliance with all other applicable laws and regulations, may issue an NPT on lands under any ownership or jurisdiction, subject to the appropriate jurisdiction's right-of-entry and ROW requirements for segments where provisions of the HPTP have been successfully implemented.

XI. CHANGES IN CONSTRUCTION ACTIVITIES

A. General requirements for variances: The BLM will require that a Class III inventory be conducted for any variances or amendments to the ROW grant or any other changes to the Undertaking that are outside the APE surveyed for the Undertaking. Where the BLM determines that additional inventory is needed, the BLM will issue an NTP only after the Section 106 process is completed. The BLM will determine where construction may continue while the additional work is being completed.

1. The APEs of all variance areas and the identification and evaluation of historic properties within variance areas will be consistent with those defined in **Stipulation V.**

2. A Record Search and Literature Review (Class I Inventory) and a Class III Intensive

3. Field Inventory will be performed on all variance areas, where not previously inventoried for cultural resources or where SHPO/THPO guidance indicates that new Class III inventory of previously inventoried areas is warranted.

4. The Applicant will assemble all variance reports into a second Class III inventory volume for the Undertaking.

B. Reporting and Review of Class III Inventory Results for Variances - Eligibility, Effects and Treatment: The BLM, SHPOs/THPO, and Consulting Parties will make every effort to expedite review of any changes to construction plans after initiation of construction. Results of the Inventory Report will be handled as follows:

1. If the inventory results in **no cultural resources or potential properties of traditional cultural or religious importance to Tribes identified**, the Applicant, through their cultural resources contractor, will submit copies of reports on SHPO Survey Report Summary Form (SRSF) (for Arizona) or in the ARMR format or as an addendum to an existing ARMR technical report (for California) to the lead BLM Office for distribution to the appropriate Federal and State agencies and Tribes. The BLM will provide an expedited review of the variance request, not to exceed two (2) working days following receipt, and will provide the Applicant, through their cultural resources contractor, with written approval/disapproval of the report via email. The report data will also be included in any final report for the Undertaking.

2. If the inventory and eligibility evaluation results in **no historic properties** identified (i.e., the cultural resources identified are not eligible), the Applicant, through their cultural resources contractor, will submit the draft Inventory Report to the lead BLM Office for distribution to the appropriate SHPO/THPO, Tribes and land manager for concurrent review. Reviewers will provide any comments to the lead BLM Office within fifteen (15) calendar days of receipt of the document. The Applicant, through their cultural resources contractor, will revise the Report as necessary, and resubmit it to the BLM within fifteen (15) calendar days. If the SHPO/THPO does not respond to the BLM within fifteen (15) calendar days, the BLM will contact the SHPO/THPO via email or telephone rather than assume concurrence with the contents of the report. After a good faith effort, the BLM will proceed. The BLM may issue the NTP or other applicable authorization to proceed at this point pursuant to **Stipulation XI**.

3. If the inventory results in **historic properties identified**, the Applicant, through their cultural resources contractor, will submit copies of the draft Inventory Report, including the recommendations of eligibility for and assessment of effect on any historic properties, to the lead BLM Office to distribute to the appropriate SHPO/THPO, Tribes and land managers for concurrent review. Reviewers will provide any comments to the lead BLM Office within thirty (30) calendar days. The Applicant, through their cultural resources contractor, will revise the Report as necessary, and resubmit it to the BLM within ten (10) calendar days. If the SHPO/THPO does not respond to the BLM within thirty (30) calendar days, the BLM will contact the SHPO/THPO via email or telephone rather than assume concurrence with the contents of the report. After no response to a good faith effort, the BLM will proceed.

a. No historic properties will be affected: If the variance is modified to avoid or minimize the effects of the Undertaking on the historic property (or properties),

the BLM may issue the NTP or other applicable authorization to proceed pursuant to **Stipulation XI.B**.

b. Historic properties will be adversely affected:

i. A Supplemental Treatment Plan for those properties will be developed and reviewed consistent with **Stipulation VI** of this PA.

ii. The Supplemental Treatment Plan shall be appended to the HPTP, and after the completion of these treatment measures, a Preliminary/End of Fieldwork Report will be prepared and distributed in accordance with **Stipulation IX.A**.

iii. The BLM shall ensure that the results of such treatment efforts are reported in the final Treatment Report for the Undertaking.

iv. Once the BLM determines that the approved treatment has been completed, the BLM may issue the NTP or other application for authorization to proceed pursuant to **Stipulation X.C**.

XII. CONSERVATION MANAGEMENT ACTIONS

A. BLM Internal Third-Party Review Process

1. The Applicant will hire a third-party cultural resources consultant to provide cultural resources technical support to the BLM. This support will include, but not be limited to, assisting the BLM as needed throughout the processes identified in **Stipulations V through XI**. The BLM must review and approve the scope of work for the third-party cultural resources consultant's services. Third-party cultural resources consultants must meet the same permitting requirements as the cultural resources consultant, consistent with **Stipulation IV.A,** and report directly to the BLM lead archaeologist for the project. The purpose of the third-party peer review is to ensure information accuracy and consistency with all BLM requirements and to assist the BLM in meeting its Section 106 compliance requirements.

2. Third-party peer reviews will include, but are not limited to the following activities:

a. Review of Class III Inventory Reports, treatment plans, and other documents required by this PA developed for the Undertaking.

b. Review of all fieldwork conducted by the cultural resources consultants, including on-site check-ins during fieldwork and post-fieldwork field verification assessments.

c. The third-party consultant may also complete other tasks to assist the BLM with meeting its Section 106 compliance requirements including, but not limited to drafting letters, meeting coordination, and Consulting Party coordination.

d. While the third-party consultant may assist the BLM with Section 106 compliance, the third-party consultant cannot conduct government-to-government consultation with the Tribes.

3. The results of the field verification under subsection 2.b and review of the information presented in the technical reports will be documented in a summary

report to be submitted to the BLM within sixty (60) calendar days of completion of the peer review of those components. The BLM will review the final third-party peer review report within sixty (60) calendar days of receipt. After acceptance by the BLM, the final third-party peer review report will be made available to Consulting Parties.

4. The BLM will consider the information presented in the third-party peer review when making determinations and findings for the portion of the project consistent with **Stipulation V.**

C. Compensatory Mitigation Fee for Cumulative Effects: Only for the portion of the Undertaking in California, the BLM will impose a compensatory mitigation fee that applies only to the portion of the Undertaking located within the DRECP Land Use Planning Amendment Area to address cumulative and some indirect adverse effects to historic properties.

1. The mitigation fee will be calculated in a manner that is commensurate to the size and regional impacts of the Undertaking, as determined by Appendix G of the DRECP PA.

2. If Appendix G of the DRECP PA has not been completed at the time the PA is executed, the BLM will develop resolution strategies to address cumulative and indirect adverse effects in a manner that is commensurate to the size and regional impacts of the Undertaking, in consultation with the Consulting Parties. The BLM will have final approval of these treatment measures and the BLM will ensure that these treatment measures are described in the HPTP. All types of project-specific treatment may be considered to mitigate the specific cumulative and indirect adverse effects of the Undertaking, as identified in **Stipulation V.B**.

D. Cultural Resources Sensitivity Orientation

1. Prior to conducting environmental orientation, the Applicant will provide their cultural resource orientation materials to BLM for a thirty (30)-calendar-day review. During that review period, BLM shall provide a fifteen (15)-calendar-day review by the Consulting Parties within five (5) calendar days of receipt of the orientation materials.

2. Before any company is authorized to work within the APE, the Applicant shall provide orientation to all personnel (including contractors, inspectors and monitors) involved in construction, operation and maintenance of the Undertaking on site avoidance and protection measures and statutes protecting all cultural resources. Orientation will include sensitivity orientation regarding properties of traditional religious and cultural significance to the Tribes and Tribal issues in general. The BLM shall ensure that information regarding properties of traditional religious and cultural significance to the Tribes presented during orientation is treated with respect and kept confidential. At a minimum, all personnel shall receive in-person orientation that discusses the importance of cultural resources, including linear resources such as trails; laws and regulations protecting them; penalties for violation; and requirements to avoid damage to historic properties and to report discoveries of cultural resources in accordance with the MDP. The Tribes will be

provided opportunities to participate in or provide materials to supplement the orientation program. This orientation program will also apply to personnel hired after the project has started. The Applicant shall maintain records demonstrating that the above described personnel orientation has been carried out and that all on-site workers have received the orientation.

3. If construction occurs outside of the approved ROW, the BLM will determine whether to issue a stop-work order and conduct damage assessment under ARPA, if appropriate, while the Applicant provides additional orientation (and documentation of that orientation) for personnel in the area.

XIII. APPLICANT'S RESPONSIBILITIES

A. The Applicant will post a financial security (such as a surety bond, letter of credit, etc.) with the BLM in an amount sufficient to cover all costs associated with implementing the HPTP, as negotiated by the Applicant where they contract for services in support of this PA. Such costs should cover all aspects of the HPTP implementation and may include, but are not limited to, inventory; treatment; post-field analyses; research and report preparation; interim and summary reports preparation; the curation of Project documentation, samples, and artifact collections in a BLM-approved curation facility; and the repatriation and reburial of any human remains, sacred objects, or objects of cultural patrimony. The Applicant will post a financial security prior to commencing any work to implement the HPTP.

B. The security posted is subject to forfeiture if the Applicant does not complete tasks within the time period established by the treatment selected; provided, however, that the BLM and the Applicant may agree to extend any such time periods. The BLM will notify the Applicant that the security is subject to forfeiture and will allow the Applicant thirty (30) calendar days to respond before action is taken to forfeit the security.

C. The BLM will release the financial security, in whole or in part, as specific tasks are completed and accepted by the BLM.

D. Project Suspension/Termination Plan

1. If the Undertaking is suspended or terminated for any reason, the Applicant shall provide a plan outlining the steps they will take in order to complete any data recovery or other treatment measures that are in progress at the time of project termination.

2. As part of this plan, the Applicant will also outline how they will complete the analysis, interpretation, reporting, and curation of artifacts obtained during the treatment measures at all historic properties up to the time of suspension or termination.

E. The BLM shall actively oversee activities pursuant to this PA. Should the Applicant or its cultural resources contractor fail to comply with any provision of this PA, the BLM may, at its discretion, counsel the Applicant and/or its cultural resources contractor regarding performance requirements or suspend the permits under which this PA is executed. Such suspension could, at the BLM's discretion, result in the issuance of a

"stop work" order for the entire Undertaking if the BLM determines that the severity of the failure to comply warrants it. The provisions of the PA are mandatory and can be enforced through any administrative or legal remedies available by law.

F. The BLM will remain responsible to inspect for compliance with the terms and conditions of the BLM ROW grant pertaining to historic properties for the life of the grant, including enforcing provisions of this PA and the required HPMP related to operations and maintenance. The BLM will ensure that the appropriate BLM cultural resources specialist participates in these compliance reviews.

XIV. PA ANNUAL REPORT AND REVIEW: The Consulting Parties shall evaluate the implementation and operation of the PA on an annual basis. There shall be an annual meeting among the Consulting Parties on or near the anniversary date of the execution of this Agreement to review the progress and effectiveness of the PA. The BLM will set up this meeting, in coordination with all the Consulting Parties.

A. Prior to each annual meeting, the BLM will provide Consulting Parties with an annual letter report (Annual Report) to review the progress under the PA and under each approved HPTP. The Annual Report will include an update on project schedule, status, and any ongoing cultural resources monitoring or treatment activities, discovery situations, proposed future actions, or outstanding tasks to be completed under the PA or the HPTP. Consulting Parties will have thirty (30) calendar days to review the Annual Report and provide comments to the BLM, who will then use the comments when developing the agenda for the annual meeting.

B. The Annual Report shall address issues and describe actions and accomplishments over the past year, as well as plans for the coming year, as appropriate, and shall minimally include the following components:

1. Historic property surveys and results;
2. Status of treatment activities;
3. Ongoing and completed public education activities;
4. Any issues that are affecting or may affect the ability of the BLM to continue to meet the terms of the PA;
5. Any disputes and objections received, and how they were resolved;
6. Any additional parties who have become Signatories or Concurring Parties to the PA in the past year; and
7. Proposed plans for next year's activities, per each State's HPTP.

C. Within fourteen (14) calendar days after each annual meeting, the BLM will summarize the meeting, including proposed action items identified during the annual meeting and how they are to be addressed, in a letter to Consulting Parties. Proposed action items must be directly linked with the implementation of the PA and the HPTP. Consulting Parties will have twenty (20) calendar days to review and comment on the meeting notes and, if necessary, provide the BLM with any changes that need to be considered in revising the meeting notes. If changes are needed, the BLM will produce revised meeting notes within thirty (30) calendar days of receipt of comments and will provide the final notes to the Consulting Parties. The BLM, in consultation with the Consulting Parties, must approve of the proposed action items before they are fully implemented.

D. Evaluation of the implementation of the PA may also include in-person meetings or conference calls among Consulting Parties, and suggestions for possible modifications or amendments to the PA. All Consulting Parties should be included in these consultations.

XV. DISPUTE RESOLUTION

A. Should any Consulting Party to this PA object at any time to any actions proposed or the manner in which the terms of this PA are implemented, that party shall notify the BLM in writing expressing its concern and including a proposed resolution. The BLM shall notify the Signatories of any objection and invite them to participate in resolution of the dispute. The BLM and the Signatories shall consult with such party to resolve the objection. If the BLM determines that such objection cannot be resolved, the BLM will notify all Consulting Parties of the dispute and will:

1. Forward all documentation relevant to the dispute, including the BLM's proposed resolution, to the ACHP, asking that office to provide the BLM with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the BLM shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and Consulting Parties and provide everyone with a copy of this written response. The BLM will then proceed according to its final decision.

2. If the ACHP does not provide its advice regarding the dispute within the thirty-(30) day period, the BLM may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the BLM shall prepare a written response that takes into account any timely comments regarding the dispute from the Consulting Parties and provide them and the ACHP with a copy of such written response.

3. The BLM will be responsible for carrying out all other actions subject to the terms of this PA that are not the subject of the dispute.

XVI. AMENDMENT: Any Signatory or Invited Signatory to this PA may request that it be amended by informing the BLM in writing of the reason for the request and the proposed amendment language, whereupon the BLM shall inform the other Signatories and request their views concerning the proposed amendment. If there is agreement among all Signatories, the document shall be amended accordingly and the amendment will be effective on the date a copy signed by all of the Signatories is executed by the ACHP. The BLM shall provide all Consulting Parties with a copy of the final amendment.

XVII. TERMINATION

A. Pursuant to 36 C.F.R. § 800.6(c) (8), if any Signatory or Invited Signatory to this PA determines that the terms of the PA cannot be or are not being carried out, then such party must provide written notice to the BLM and the other Signatories and Invited Signatories stating the reasons for the determination and requesting consultation to resolve the stated concerns through amendment of the PA. The Signatories and Invited

Signatories shall consult regarding potential amendments to the PA to resolve the stated concerns within thirty (30) calendar days of the written request. If the Signatories and Invited Signatories are unable to amend the PA or agree on other actions to resolve the concerns, the objecting party may terminate the PA by providing written notice to the Signatories and Invited Signatories.

B. Termination of the agreement by an Invited Signatory shall only apply to lands under their respective jurisdiction. In such case, the BLM shall comply with 36 C.F.R. § 800, subpart B, for all undertakings affecting the terminating Signatory's lands within the scope of the PA.

C. In the event that this PA is terminated, the BLM shall have six months after termination, or a longer time period if agreed to in writing by all Signatories, to either (a) have another PA executed by all Signatories, or (b) request, take into account, and respond to ACHP comments in accordance with 36 C.F.R. § 800.7. The BLM shall take reasonable steps to avoid adverse effects to historic properties until either option is carried out. The BLM will notify all parties to this PA as to the course of action it will pursue.

D. If neither option has been carried out within six months after termination (or a longer time period agreed to in writing by all Signatories), BLM shall, within fourteen (14) days thereafter, request ACHP formal comments and, within forty-five (45) days after the ACHP issues them, take into account and respond to them in accordance with 36 C.F.R. § 800.7. The BLM shall continue to take reasonable steps to avoid adverse effects to historic properties until this process is concluded.

XVIII. DURATION OF THE PA

A. This PA will expire if the Undertaking: a) has not been initiated, b) the BLM ROW grant expires or is withdrawn, or c) the stipulations of this PA have not been initiated within 10 years from the date of the execution of the PA. At such time, and prior to work continuing on the Undertaking, the BLM must either execute a memorandum of agreement pursuant to 36 C.F.R. § 800.6; execute a PA pursuant to 36 C.F.R. § 800.14(b); or request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7.

B. At least six months prior to the Sunset date, the Signatories and Invited Signatories shall consult to determine whether this PA remains satisfactory. If there is agreement, the agency will amend (revise and update) the PA in accordance with Stipulation XVI, as needed, in consultation with the Consulting Parties. The amended agreement must be signed and executed by all Signatories prior to the expiration date.

C. Unless the PA is terminated, expired, or amended, this PA will remain in full force and effect for 10 years. If, prior to the termination date, the BLM, in consultation with the other Signatories and Invited Signatories, determines that all terms of this PA have been fulfilled in a satisfactory manner, the BLM may notify consulting parties in writing of the BLM's determination to terminate the PA. The PA will terminate on the day that BLM so notifies the Consulting Parties.

D. The BLM will retain responsibility for administering the terms and conditions of the ROW grant pertaining to historic properties for the life of the grant, including enforcing provisions of this PA and the required HPMP related to operations and maintenance.

XIX. NON-ENDORSEMENT CLAUSE: Nothing in this PA should be interpreted to imply that any party endorses the Ten West Link Transmission Project.

XX. COUNTERPART SIGNATURES AND EXECUTION STATEMENT

A. This PA may be executed in counterparts, each separately and together constituting one and the same document. Execution and delivery of this PA by facsimile or email shall be sufficient for all purposes and shall be binding on any party to this PA.

B. Execution of this PA by the BLM, the SHPOs/THPO, and the ACHP and implementation of its terms evidence that the BLM has satisfied its Section 106 responsibilities with regard to the construction, operation and maintenance of the Ten West Link Transmission Project and has afforded the ACHP an opportunity to comment.

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THE COLORADO RIVER INDIAN TRIBES,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
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BETWEEN TONOPAH, LA PAZ COUNTY, ARIZONA
AND BLYTHE, RIVERSIDE COUNTY, CALIFORNIA**

BUREAU OF LAND MANAGEMENT

Raymond Suazo — Date: July 11, 2019
State Director

SIGNATORY PAGE

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ARIZONA STATE HISTORIC PRESERVATION OFFICER

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Kathryn Leonard Date:
State Historic Preservation Officer

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CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

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Julianne Polanco Date:
State Historic Preservation Officer

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COLORADO RIVER INDIAN TRIBES

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Dennis Patch Date:
Chairman

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ADVISORY COUNCIL ON HISTORIC PRESERVATION

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John M. Fowler Date:
Executive Director

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BUREAU OF INDIAN AFFAIRS

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Bryan Bowker Date:
Regional Director

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DCR Transmission, L.L.C.

Himanshu Saxena — Date: 7/16/2019
Chief Executive Officer

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Bureau of Reclamation

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Terrance J. Fulp, Ph.D. Date:
Regional Director

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Department of Defense, Yuma Proving Grounds

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Date:

Garrison Manager

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Arizona State Lands Department

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Lisa Atkins Date:
Arizona State Land Commissioner

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California Public Utilities Commission

_____

Stephanie Green Date:
CPUC Tribal Liaison

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Western Area Power Administration

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Ronald Moulton Date:
Southwest Regional Manager

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Arizona State Museum

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Patrick Lyons Date:
Director

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La Paz County

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Duce Minor Date:
Chairman

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Town of Quartzsite

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Jim Ferguson Date:
Town Manager

CONCURRING PARTY SIGNATORY PAGE

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Ak-Chin Indian Community

_____

Robert Miguel Date:
Chairman

CONCURRING PARTY SIGNATORY PAGE

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Fort Mojave Indian Tribe

_____

Timothy Williams Date:
Chairman

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Gila River Indian Community

_____

Stephen Roe Lewis Date:
Governor

CONCURRING PARTY SIGNATORY PAGE

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Hopi Tribe

_____

Timothy L. Nuvangyaoma Date:
Chairman

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Morongo Band of Mission Indians

_____

Robert Martin Date:
Chairman

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Fort Yuma-Quechan Tribe

_____

Jordan Joaquin Date:
President

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Salt River Pima-Maricopa Indian Community

_____

Martin Harvier Date:
President

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Soboba Band of Luiseno Indians

_____

Scott Cozart Date:
Chairman

CONCURRING PARTY SIGNATORY PAGE

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Tohono O'odham

_____

Edward D. Manuel Date:
Chairman

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BETWEEN TONOPAH, LA PAZ COUNTY, ARIZONA
AND BLYTHE, RIVERSIDE COUNTY, CALIFORNIA

Torres Martinez Desert Cahuilla Indians

_____

Thomas Tortez Date:
Chairperson

CONCURRING PARTY SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
THE BUREAU OF LAND MANAGEMENT,
ARIZONA TUCSON FIELD OFFICE,
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER,
THE COLORADO RIVER INDIAN TRIBES,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE
TEN WEST LINK TRANSMISSION PROJECT
BETWEEN TONOPAH, LA PAZ COUNTY, ARIZONA
AND BLYTHE, RIVERSIDE COUNTY, CALIFORNIA

Twenty-Nine Palms Band of Mission Indians

_____

Darrell Mike Date:
Chairman

CONCURRING PARTY SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
AMONG
THE BUREAU OF LAND MANAGEMENT,
ARIZONA TUCSON FIELD OFFICE,
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER,
THE COLORADO RIVER INDIAN TRIBES,
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REGARDING THE
TEN WEST LINK TRANSMISSION PROJECT
BETWEEN TONOPAH, LA PAZ COUNTY, ARIZONA
AND BLYTHE, RIVERSIDE COUNTY, CALIFORNIA

Yavapai-Apache Nation

_____

Jane Russell-Winiecki Date:
Chairwoman

CONCURRING PARTY SIGNATORY PAGE

**PROGRAMMATIC AGREEMENT
AMONG
THE BUREAU OF LAND MANAGEMENT,
ARIZONA TUCSON FIELD OFFICE,
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER,
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REGARDING THE
TEN WEST LINK TRANSMISSION PROJECT
BETWEEN TONOPAH, LA PAZ COUNTY, ARIZONA
AND BLYTHE, RIVERSIDE COUNTY, CALIFORNIA**

Yavapai-Prescott Indian Tribe

_____

Robert Ogo Date:
Vice President

ATTACHMENT 1: PROJECT DESCRIPTION AND MAP

Project Description

The Applicant filed a ROW application (SF-299) with the BLM on September 14, 2015 to construct, operate, maintain, and decommission an electric transmission line project in western Arizona and eastern California. **(This Undertaking does not consider decommissioning. As per Stipulation II.B, decommissioning will be a separate undertaking.)** The proposed Ten West Link Transmission Line Project (the Project) would consist of a series-compensated, single circuit, 500 kilovolt (kV) transmission line traversing approximately 114 miles.
The Project would be designed with a conductor capacity to transmit 3200 megawatts (MW) and provide interconnection capability for new energy projects located in the region.

The Project would begin at the existing Arizona Public Service Company (APS) Delaney Substation near Tonopah, Arizona, and terminate at the existing Southern California Edison (SCE) Colorado River Substation near Blythe, California. The Project would be located in Maricopa and La Paz counties in Arizona, and Riverside County in California.
The Applicant's proposed Project would be constructed using a combination of guyed V, self-supporting lattice, lattice H-frame and/or monopole structures. The Project would be primarily located within designated utility corridors largely following the existing Devers to Palo Verde (DPV) transmission line and other linear facilities including natural gas pipelines. The Project is designed to be located within a 200-foot wide ROW for the transmission line. In areas of colocation, the Project would maintain a 250-foot separation from the existing DPV 500-kV transmission line in accordance with requirements set forth by the California Independent System Operator (CAISO). To the extent possible, the Applicant proposes to use existing DPV access roads and other existing access roads. Approximately 97 miles of the Project would be in Arizona, and approximately 17 miles would be in California. The Project would cross approximately 83 miles of Federal land, including lands managed by the BLM and Reclamation. The Project would also cross lands administered by the ASLD, the SLC, and private lands. The Project would take approximately two years to construct. Once constructed, the Project would be in operation year-round.

The BLM has identified Alternative 2: BLM Utility Corridor Route (with the inclusion of subalternative 4d) as the Agency Preferred Alternative. This route was developed to emphasize the use of BLM utility corridors along Interstate 10 and parallel to the existing Palo Verde to Devers transmission line; avoid the Kofa National Wildlife Refuge; avoid Johnson Canyon and other high use recreation areas; minimize impacts to the Colorado River Indian Tribes Reservation; avoid residential and other developed areas; and avoid areas of dense cultural resources near the Mule Mountains south of Blythe, California.

MAP OF UNDERTAKING

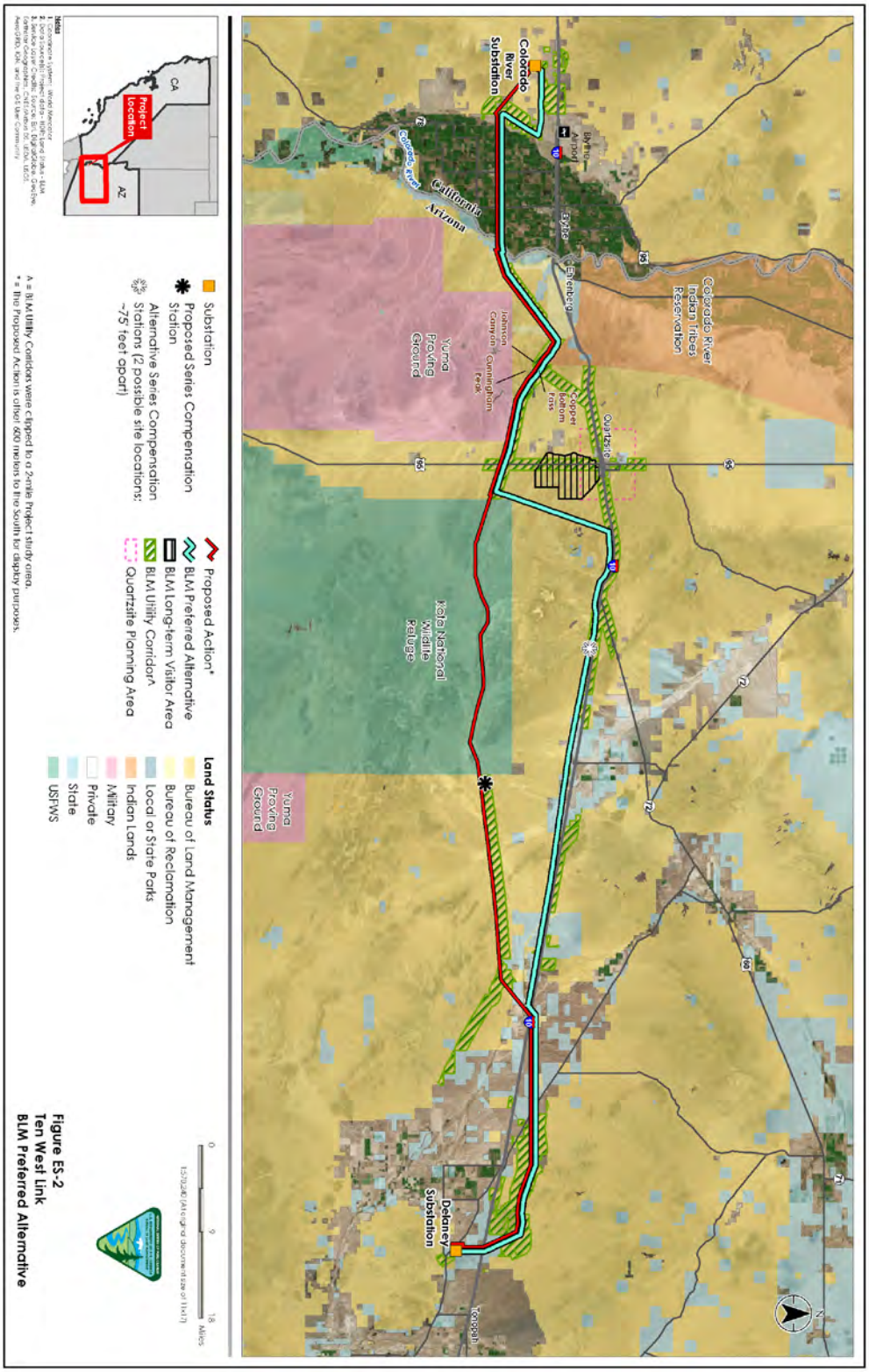

Figure ES-2
Ten West Link
BLM Preferred Alternative

ATTACHMENT 2: DEFINITIONS FOR TERMS USED IN THIS PA

Adverse Effect – Alteration of the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register of Historic Places (NRHP).

Area of Potential Effects (APE) – The geographic area or areas within which an undertaking may directly, indirectly or cumulatively cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking [36 C.F.R. §800.16(d)].

Authorized Officer – The Authorized Officer for this Undertaking is the BLM Yuma Field Office Manager and/or his or her delegated representative.

Consultation – The process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters that arise during the Section 106 process. The Secretary of Interior's "Standards and Guidelines for Federal Agency Preservation Programs pursuant to the National Historic Preservation Act" provide further guidance on consultation.

Consulting Party – Any party (including Tribes) that has participated in the development of this PA and has indicated intent to participate in consultations during its implementation either by signing in concurrence or by written notification to the Agency Official. The refusal of any party invited to sign the PA, other than the Signatories, does not invalidate the PA. Consulting Parties include:

Signatories – Parties who have legal responsibilities for completion of the stipulations in the PA. The Signatories have sole authority to execute the PA, and together with the Invited Signatories, to amend or terminate the PA.

Invited Signatories – The authorized official may invite additional parties to sign the PA and upon signing, they have the same rights with regard to amendments and termination as the Signatories. These parties have legal or financial responsibility in terms of the Undertaking, such as the issuance of a permit, license or ROW, and they have a compliance responsibility under the NHPA or a state cultural resource statute.

Concurring Parties – A party who signs this PA but is not legally or financially responsible for completion of stipulations set forth in the PA.

Construction and Reclamation– The construction phase begins when the BLM has issued a ROW grant to the Applicant for the Undertaking. It includes all activities related to construction of the Undertaking, including activities required to be completed in advance of construction, as well as all activities completed in order to reclaim lands disturbed during construction for two years after construction is completed or until cost recovery agreements related to construction expire.

Cultural Resource – Any location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, landscapes, buildings, structures, objects, and places that possess historic and/or cultural significance as well as places with important public and scientific uses and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources may be but are not necessarily eligible for the NRHP.

Cultural Resource Consultant/Contractor (CRC) – A qualified and permitted professional consultant in cultural resources (archaeologist, historian, ethnographer, historic architect, architectural historian, or anthropologist) who is responsible for implementing cultural resource inventories and who prepares cultural resource documents, reports, analysis, records, and professional literature. CRCs must meet the Secretary of the Interior's Professional Qualification Standards and hold appropriate permits from land managing agencies and/or the Arizona State Museum for lands in Arizona.

Cultural Resource Inventory (from H-8100-1) –

Class I – Existing data inventory: Large-scale review of known cultural resource data

Class II – Sampling field inventory: Sample oriented field inventory

Class III – Intensive field survey: A complete surface inventory of a specific area involving a systematic field examination of an area to gather information regarding the number, location, condition, distribution, and significance of cultural resources present, typically requiring a systematic pedestrian review of an area with transect intervals that shall not exceed 15 meters.

Day – Refers to calendar day unless otherwise stated.

Decommissioning – The action in which the transmission line and/or related facilities such as substations are taken out of commission (cease to operate) and are physically dismantled.

Effects – Alterations to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP:

Direct effects are caused by the Undertaking and occur at the same time and place as the undertaking.

Indirect effects are also caused by the Undertaking and are effects that may be visual, atmospheric, or audible that could diminish the integrity of the historic properties. Indirect effects may include increased vandalism and looting resulting from increased access.

Cumulative effects are the impacts on cultural resources which result from the incremental impact of the Undertaking when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (per 40.C.F.R. § 1508.7). Cumulative effects may be direct or indirect and result from incremental effects related to the Undertaking over time (e.g., increased access because

of new roads, future transmission lines along the same corridor, new projects feeding into the Undertaking, etc.). Additional roads and visitors to the area (construction personnel, recreationists, etc.) also increase opportunities for impacts from pot hunting, vandalism of historic properties, and disruption of spiritually important sites.

Eligible (for Inclusion in the NRHP) – Includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties not formally determined or listed, but that meet the NRHP criteria as determined by the Federal Agency in consultation with the SHPO/THPO, Tribes, and other parties.

Historic Property – Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria (36 C.F.R. § 800.16[l][1]).

Historic Properties Management Plan (HPMP) – A document that details the procedures and protocols to ensure the long-term protection and preservation of historic properties within the ROW for the duration of the ROW grant.

Historic Properties Treatment Plan (HPTP) – A document that details the procedures and techniques for resolving adverse effects to historic properties within the APE through avoidance, minimization, and/or mitigation (treatment) caused by construction.

Indian Tribe – An Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation, or village corporation, as those terms are defined in Section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. § 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (36 C.F.R. § 800.16[m]).

Integrity – Refers to location, design, setting, materials, workmanship, feeling and association as defined in 36 C.F.R. § 60.

Interested tribal members – Tribal members who have identified themselves either as individuals or a group, through consultations with the BLM, the THPO, or the tribal member designated to participate in consultations concerning this Undertaking, as being interested in attending field inspection visits with the BLM and/or the CRC.

Inventory Report – The (Class III – see above description) Inventory Report documents the results of the cultural resources inventory detailing the areas surveyed; the survey methodologies used; the cultural framework of the project area and its relationship to the evaluation of significance; and the cultural resources discovered and documented. It provides recommendations to the lead Federal agency on NRHP-eligibility of the cultural resources identified within the inventoried area. It includes assessments of direct, indirect, and cumulative effects for historic properties within the APE of the Undertaking.

Monitoring and Discovery Plan – The Monitoring and Discovery Plan (1) provides a detailed plan to monitor compliance with stipulations of the HPTP to avoid, minimize, or mitigate adverse effects of the Undertaking; (2) may include specific plans where monitoring is necessary to help resolve adverse effects to historic properties; (3) establishes procedures to follow in the event that previously undiscovered cultural resources are encountered during the Undertaking; and (4) may include a Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action developed specifically to address the handling of human remains pursuant to 43 C.F.R. § 10; and (5) describes how the Undertaking will comply with A.R.S. § 41-844 (with respect to State, county, and city lands) and A.R.S. § 41-865 (with respect to private lands) in Arizona; and in California, with the Cal. Pub. Res. Code §§ 5097.98, 5097.991 and the Cal. Health & Safety Code § 7050.5(c). All monitoring plans shall explicitly state the objectives of the monitoring and provide a methodology for attaining these objectives. The Tribal Participation Plan is a component of the MDP.

Monitoring Report – A document that summarizes the results of monitoring activities performed as outlined within the MDP of the HPTP for each state.

NAGPRA Plan of Action (POA) – A written document that establishes procedures for ensuring the proper treatment of Native American remains and related grave goods encountered on Federal lands pursuant to 43 C.F.R. § 10.

National Register of Historic Places (NRHP) – The official list of the Nation's historic places worthy of preservation. Authorized under the National Historic Preservation Act of 1966, it is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. The National Register is administered by the National Park Service under the Secretary of the Interior. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.

NRHP Criteria – The criteria of significance established by the Secretary of the Interior for use in evaluating the eligibility of properties for inclusion in the NRHP (36 C.F.R. § 60).

Operation and Maintenance – Activities associated with operation and maintenance of the approved ROW over the life of the ROW grant. This includes all activities related to the functioning of the Undertaking after construction and reclamation are completed and prior to any activities related to decommissioning of the Undertaking. Activities during this time are generally infrequent, predictable, and routine. Any actions not specifically approved in the ROW grant, such as changes in equipment used or actions outside the ROW grant area require approval of the BLM.

Plan of Development (POD) – The Final POD is a BLM approved document that will be an enforceable term and condition as part of the BLM approved ROW grant. Contributors in the development of the Final POD prior to construction will include the Arizona State Land Department (ASLD) and the California Land Commission (SLC). The ASLD and the SLC will be responsible for developing and enforcing their respective stipulations, as they deem necessary, to mitigate natural and cultural resource impacts on state administered lands. Should the ASLD

and/or the SLC choose to adopt the terms, conditions, and special stipulations as outlined in the Final POD on their respective state authorized ROWs, responsibility to enforce these Final POD terms, conditions, and stipulations is strictly their sole responsibility. Enforcement will be between the state agency and the applicant.

Post Review Discovery -- A previously unknown cultural resource identified in the APE during construction and after the review of the Class III Inventory Report.

Preliminary/End of Fieldwork Report – A document that summarizes results of the treatment activities undertaken on an individual historic property for the purposes of informing the BLM and Consulting Parties and gaining approval for the Undertaking to proceed prior to the acceptance of the final Treatment Report.

Programmatic Agreement (PA)– A document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex Project, or other situations in accordance with 36 C.F.R. § 800.14(b).

Reclamation – The activities necessary to restore lands disturbed by construction to as close to a pre-construction condition as possible. This may include ripping, re-seeding and contouring lands disturbed during construction, such as temporary access roads and staging areas.

Research Design and Work Plan – A document that describes the proposed Area of Potential Effect and the reports that the BLM proposes to fulfill identification efforts for the Project per 36 C.F.R. § 800.4.

Right-of-Way (ROW) – The public lands the BLM authorizes for use or occupation under a ROW grant. The POD is an essential component of the ROW grant, and the PA and the HPTP are appended to the POD.

Section 106 – Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the ACHP ("Protection of Historic Properties," 36 C.F.R. § 800, incorporating amendments effective August 5, 2004).

State Historic Preservation Officer (SHPO) – The official appointed or designated pursuant to Section 101(b)(1) of the NHPA to administer the State Historic Preservation Program or a representative designated to act for the State Historic Preservation Officer.

Traditional Cultural Property (TCP) - A property that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (*National Register Bulletin 38*).

Tribal Participation Plan - As used in this PA, a plan that outlines details and protocols for affording tribally designated representatives (tribal cultural consultants) the opportunity to monitor and be on site during all ground disturbing construction activities for facilities, roads or other components associated with the Undertaking. The Tribal Participation Plan is a component of the MDP.

Treatment Report – As used in this PA, a document that presents the complete results of treatment activities performed on all historic properties, addresses the research questions developed in the HPTP, and synthesizes the results into regional context.

Tribal Historic Preservation Officer (THPO) – The tribal official appointed by the Tribe's chief governing authority or designated by a tribal ordinance who has assumed the responsibilities of the SHPO for purposes of Section 106 compliance on tribal lands in accordance with 54 U.S.C. 302702.

Undertaking – A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval (36 C.F.R. § 800.16[y]). The Undertaking may include surveys, geotechnical testing, engineering, mitigation planning and design, or other activities initiated prior to construction of project facilities.

Unevaluated cultural resources -- As used in this PA, unevaluated cultural resources are those that require additional test excavations, archival or ethnographic research in order for a determination of National Register eligibility to be made.

Variance – A relatively minor change in construction activities (for example, a modification in the route of an access road) requiring the approval of the BLM, including compliance with Section 106 of the NHPA, prior to the issuance of a Notice to Proceed with construction.

ATTACHMENT 3. REFERENCES CITED

Brodbeck, Mark and Wayne Glenny
2017 Ten West Link 500Kv Transmission Line Project Cultural Resources Baseline Technical Report. Submitted to the Bureau of Land Management (BLM) Arizona State Office February 2017. HDR, Inc. Phoenix, AZ.

Brodbeck, Mark, Wayne Glenny, Jeanne Barnes, Beniamino Volta, and Daniel Leonard
2017 Ten West Link 500kV Transmission Line Project Research Design and Work Plan for Cultural Resources Identification Efforts. Submitted to the BLM Arizona State Office October 2017. HDR, Inc. Phoenix, AZ.

Leard, Dan and Mark Brodbeck
2017 Ten West Link 500kV Transmission Line Project Ethnographic Overview Report. Submitted to the BLM Arizona State Office March 2017. HDR, Inc. Phoenix, AZ.

Appendix 3 Tabular Data Associated with Chapter 3

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Appendix 3 Tabular Data Associated with Chapter 3

List of Tables

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3.1 INTRODUCTION

See Chapter 3.

3.2 NON-KEY RESOURCES

See Chapter 3.

3.3 SOIL RESOURCES

Table 3.3-1 Summary of STATSGO Mapped Soils within the Study Area

GENERAL MAP UNIT (STATSGO SOIL ASSOCIATION)	SEGMENT LOCATION	DESCRIPTION[a]	WIND ERODIBILITY GROUP[b,c]	SHRINK/ SWELL POTENTIAL[d]	CORROSION RISK[e]	
					CONCRETE	UNCOATED STEEL
Rositas-Ripley-Indio-Gilman (s275)	Colorado River and California Zone (ca-01, ca-02, ca-04, ca-05, ca-06, p-15w, p-16, x-09, x-10, x-11, x-12, x-13, x-15, x-16)	The soil association consists of very deep, well, or moderately well to somewhat excessively drained soils that formed in stratified stream alluvium, alluvium from mixed rock sources or from sandy aeolian material. The soils are on floodplains and alluvial fans, lacustrine basins, floodplains, dunes or sand sheets and have slopes of 0 to 30 percent.	1–6	0	Low–Moderate	Moderate–High
Rositas-Orita-Carrizo-Aco (s1041)	Colorado River and California Zone (ca-02, ca-06, ca-07, ca-09, p-16, p-17, p-18, x-15, x-16)	The soil association consists of very deep, well drained to excessively drained soils formed in sandy aeolian material, alluvium from mixed sources, and mixed igneous alluvium. The soils are on dunes and sand sheets, fan remnants and terraces, floodplains, fan piedmonts, and bolson floors. Slope ranges from 0 to 30 percent.	1–3, 5–6	0.14, 1.00	Low–Moderate	Moderate

GENERAL MAP UNIT (STATSGO SOIL ASSOCIATION)	SEGMENT LOCATION	DESCRIPTION[a]	WIND ERODI-BILITY GROUP[b,c]	SHRINK/ SWELL POTEN-TIAL[d]	CORROSION RISK[e]	
					CON-CRETE	UNCOAT-ED STEEL
Rillito-Gunsight (s1140)	Colorado River and California Zone (p-17, p-18)	The soil association consists of very deep, somewhat excessively drained soils that formed in mixed alluvium. Gunsight soils are strongly calcareous. The soil association is on fan terraces or stream terraces. Slopes are predominantly 0 to 60 percent.	4L–6	0.5	Moderate	Moderate–High
Rositas-Dune land-Carsitas (s1136)	Colorado River and California Zone (ca-09, p-18, x-19)	The soil association consists of very deep, somewhat excessively drained soils formed in sandy aeolian material or alluvium from granitoid and/or gneissic rocks. The soils are on dunes and sand sheets, alluvial fans, fan aprons, valley fills, dissected remnants of alluvial fans and in drainageways. Slope ranges from 0 to 30 percent.	1, 2, 6	0	Moderate	Moderate
Vaiva-Quilotosa-Hyder-Cipriano-Cherioni (s1141)	Colorado River and California Zone (ca-09, p-18, x-19)	The soil association consists of very shallow and shallow, well drained to somewhat excessively drained soils formed in slope alluvium from granite and gneiss, and alluvium from rhyolite and related volcanic rocks. The soils are on hills and mountains, or fan terraces with slopes of 1 to 70 percent.	None available	0.5	Low–Moderate	Moderate

GENERAL MAP UNIT (STATSGO SOIL ASSOCIATION)	SEGMENT LOCATION	DESCRIPTION[a]	WIND ERODI-BILITY GROUP[b,c]	SHRINK/ SWELL POTEN-TIAL[d]	CORROSION RISK[e]	
					CON-CRETE	UNCOAT-ED STEEL
Ligurta-Gunsight-Cristobal (s290)	Colorado River and California Zone (cb-10, i-08s, p-15e, x-11) Copper Bottom Zone (cb-03, cb-04, cb-05, cb-06, i-06, i-07, p-09, p-11, p-13, p-14, x-08) East Plains and Kofa Zone (i-04, in-01, p-06) Quartzsite Zone (p-07, p-08, qn-01, qn-02, qs-01, qs-02, i-05, x-05, x-06, x-07)	The soil association series consists of very deep, well drained to somewhat excessively drained, strongly saline soils that formed in fan alluvium weathered from a wide variety of rocks. The soils are on fan terraces or stream terraces with slopes of 0 to 60 percent.	5, 6	1	Moderate –High	Moderate–High
Schenco-Rock outcrop-Laposa (s295)	Copper Bottom Zone (cb-01, cb-02, cb-03, cb-04, cb-05, cb-06, i-06, p-09, p-10, p-11, p-12, x-08) East Plains and Kofa Zone (i-04, in-01, p-06) Quartzsite Zone (qn-02, qs-01, qs-02, x-05)	The soil association consists of very shallow and shallow to moderately deep, well drained to somewhat excessively drained soils formed in slope alluvium from schist, granite, gneiss, rhyolite, and aeolian deposits. The soils are on hill slopes, hills and mountains and have slopes of 3 to 75 percent. Average annual precipitation is about 4 to 8 inches and the mean annual temperature is about 72 to 73 degrees Fahrenheit.	8	None available	None available	Moderate

GENERAL MAP UNIT (STATSGO SOIL ASSOCIATION)	SEGMENT LOCATION	DESCRIPTION[a]	WIND ERODI-BILITY GROUP[b,c]	SHRINK/ SWELL POTEN-TIAL[d]	CORROSION RISK[e]	
					CON-CRETE	UNCOAT-ED STEEL
Hyder-Coolidge-Cipriano-Cherioni (s289)	East Plains and Kofa Zone (d-01, i-03, i-04, in-01, p-03, p-04, p-05, p-06, x-01, x-02, x-03, x-04) Quartzsite Zone (x-05)	The soil association consists of very shallow and shallow to very deep, well drained to somewhat excessively-drained soils that formed in fan or stream alluvium from rhyolite and related volcanic rocks. The soils are on fan terraces, stream terraces, mountains, and hills and have slopes of 0 to 70 percent.	None available	1	Low–Moderate	Moderate
Momoli-Denure-Carrizo (s281)	East Plains and Kofa Zone (d-01, p-01)	The soil association consists of very deep, well drained to excessively drained soils formed in fan alluvium and aeolian deposits and mixed igneous alluvium. The soils are on stream terraces and fan terraces, alluvia fans, relict basin floors, floodplains, fan piedmonts, and boldon floors and have slopes of 0 to 15 percent.	3, 5, 6	None available	Low–Moderate	Moderate
Pahaka-Estrella-Antho (s299)	East Plains and Kofa Zone (d-01, i-01, i-02, i-03, p-01, p-02, p-03, p-04, p-05, p-06, x-01, x-02, x-03, x-04)	The soil association consists of very deep, well drained to somewhat excessively drained soils that formed in mixed and stratified fan alluvium. The soils are on alluvial fans, terraces, and floodplains with slopes ranging from 0 to 5 percent.	3, 5	0.06, 0.08, 0.09	Low	Moderate

GENERAL MAP UNIT (STATSGO SOIL ASSOCIATION)	SEGMENT LOCATION	DESCRIPTION[a]	WIND ERODI-BILITY GROUP[b,c]	SHRINK/ SWELL POTEN-TIAL[d]	CORROSION RISK[e]	
					CON-CRETE	UNCOAT-ED STEEL
Rillito-Gunsight-Denure-Chuckawalla (s288)	East Plains and Kofa Zone (d-01, i-01, i-02, i-03, p-01, p-06, x-01, x-02, x-04)	The soil association consists of very deep, well drained to somewhat excessively drained soils that formed in mixed alluvium. Gunsight soils are strongly calcareous. The soils are formed in alluvium from mixed sources and are on fan terraces or stream terraces and relict basin floors. Slopes are 0 to 60 percent.	3, 4L, 5, 6, 8	1	Low–Moderate–High	Moderate–High
Rock outcrop-Quilotosa-Hyder-Gachado (s294)	East Plains and Kofa Zone (d-01, p-01)	The soil association consists of very shallow and shallow, well drained to somewhat excessively drained soils that formed from granitic and metamorphic rocks or in alluvium from rhyolite and related volcanic rocks. The soils are on hills and mountains and have slopes of 1 to 70 percent.	None available	None available	Low	None available
Rock outcrop-Quilotosa-Momoli (s293)	East Plains and Kofa Zone (i-03, x-04)	The soil association consists of very shallow and shallow to very deep, somewhat excessively-drained to excessively drained soils that formed from granitic and metamorphic rocks or in fan alluvium and aeolian deposits. The soils are on hills and mountains, stream terraces, and fan terraces and have slopes of 0 to 65 percent.	6	None available	Moderate	Moderate

GENERAL MAP UNIT (STATSGO SOIL ASSOCIATION)	SEGMENT LOCATION	DESCRIPTION[a]	WIND ERODI-BILITY GROUP[b,c]	SHRINK/ SWELL POTEN-TIAL[d]	CORROSION RISK[e]	
					CON-CRETE	UNCOAT-ED STEEL
Rock outcrop-Lehmans-Gran (s316)	East Plains and Kofa Zone (i-04, p-06) Quartzsite Zone (x-05)	The soil association consists of very shallow and shallow, well drained soils formed in slope alluvium-colluvium from volcanic rock. The soils are on pediments, hill slopes, and mountain slopes and have slopes of 1 to 65 percent.	None available	None available	None available	None available
Valencia-Estrella-Cuerda (s300)	East Plains and Kofa Zone (i-03, p-04, p-05, p-06, x-01, x-02, x-03, x-04)	The soil association consists of very deep, well drained soils formed in recent alluvium and stratified mixed alluvium. The soils are on floodplains and alluvial fans and have slopes of 0 to 5 percent.	3, 5	0.06, 0.08, 0.09	Low–Moderate	Moderate

[a] Soil Survey Staff, NRCS. Official Soil Series Descriptions. https://www.nrcs.usda.gov/wps.portal/nrcs/detail/soils/home/. November 9, 2016. Descriptions are a compilation of the descriptions for each individual soil map unit.

[b] Soil Survey Staff, NRCS. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/. November 9, 2016. Soil characteristics are a compilation of the data for each individual soil map unit.

[c] A wind erodibility group consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

[d] Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

[e] Tecopa map unit description was used; no other soil map unit descriptions were available.

3.4 BIOLOGICAL RESOURCES

3.4.1 Vegetation Resources, Including Special Status Plants, and Noxious and Invasive Weeds

Table 3.4-1 Wildlife Waters in Arizona Within Two Miles of Route Segments

SEGMENT	WILDLIFE WATER IDENTIFICATION	DISTANCE (MILES)
East Plains and Kofa Zone		
d-01	Courthouse Butte	1.9
i-03	Gravel Pit	1.9
i-04	Ibex Peak/Ram Pasture	1.9
in-01	Ibex Peak/Ram Pasture	1.5
p-01	Big Horn Mountains #5	0.1
p-01	Big Horn Peaks #1	1.6
p-06	Charco 4	1.2
p-06	New Water Well	0.6
p-06	Charco 3	1.0
p-06	Scott Well	0.7
p-06	Twelve Mile Well	0.3
Quartzsite Zone		
p-09	Tule Tank	1.3
Copper Bottom Zone		
cb-01	Dome Rock	0.6
cb-01	Tule Tank	0.7
cb-01	Dome Rock Mountain #1	1.5
cb-02	Dome Rock	0.3
cb-02	Dome Rock Mountain #1	1.1
cb-02	Tule Tank	1.6
cb-03	Dome Rock Mountain #1	0.1
cb-03	Dome Rock	1.0
cb-03	Tule Tank	1.6
cb-04	Dome Rock	0.7
cb-04	Dome Rock Mountain #1	1.6

SEGMENT	WILDLIFE WATER IDENTIFICATION	DISTANCE (MILES)
p-10	Tule Tank	1.2
p-10	Dome Rock Mountain #1	1.6
p-10	Dome Rock	1.7
p-11	Dome Rock Mountain #1	0.1
p-11	Dome Rock	0.8
p-11	Tule Tank	1.6

Table 3.4-2 Arizona Protected and BLM Sensitive Plant Species and Potential Presence in the Project Area in Arizona

COMMON NAME	SCIENTIFIC NAME[A]	STATUS[B]	POTENTIAL PRESENCE IN PROJECT AREA
Ajo lily	*Hesperocallis undulate*	ANPL-SR	Likely
Barrel cactus	*Ferocactus wislizeni*	ANPL-SR	Likely
Beavertail cactus	*Opuntia basilaris var. basilaris*	ANPL-SR	Likely
Beehive cactus	*Echinomastus johnsonii*	ANPL-SR	Likely
Bigelow's nolina	*Nolina bigelovii*	ANPL-SR, HR	Likely
Blue paloverde	*Parkinsonia florida*	ANPL-SA	Likely
Blue sand lily	*Triteliopsis palmeri*	ANPL-SR BLM Sensitive	Not expected
Buckhorn cholla	*Cylindropuntia acanthocarpa var. acanthocarpa*	ANPL-SR	Likely
Crucifixion thorn	*Castella emoryi*	ANPL-SR	Likely
Desert agave	*Agave deserti spp. simplex*	ANPL-SR	Likely
Desert holly	*Atriplex hymenelytra*	ANPL-SR	Likely
Desert willow	*Chilopsis linearis*	ANPL-SA	Likely
Devil's cholla	*Cylindropuntia kunzei*	ANPL-SR	Likely
Diamond cholla	*Cylindropuntia ramosissima*	ANPL-SR	Likely
Dudleya	*Dudleya arizonica*	ANPL-SR	Likely
Elephant tree, torote	*Bursera microphylla*	ANPL-SR	Likely
Foothill paloverde	*Parkinsonia microphylla*	ANPL-SA	Likely
Hedgehog cactus	*Echinocereus engelmanii var. chrysocentrus*	ANPL-SR	Likely

COMMON NAME	SCIENTIFIC NAME[A]	STATUS[B]	POTENTIAL PRESENCE IN PROJECT AREA
Ironwood	*Olneya tesota*	ANPL-SA, HR	Likely
Kearney sumac	*Rhus kearneyi spp. kearneyi*	ANPL-SR BLM Sensitive	Not expected
Kofa mountain barberry	*Berberis harrisoniana*	BLM sensitive	Unlikely
Parish wild onion	*Allium parishii*	BLM sensitive	Unlikely
Pincushion cactus	*Mammillaria tetrancistra*	ANPL-SR	Likely
Mesquite	*Prosopis spp.*	ANPL-SA, HR	Likely
Night blooming cereus	*Peniocereus greggii*	ANPL-SR	Likely
Ocotillo	*Fouquieria splendens*	ANPL-SR	Likely
Parish wild onion	*Allium parishii*	ANPL-SR	Likely
Pencil cholla	*Cylindropuntia leptocaulis*	ANPL-SR	Likely
Queen-of-the-night	*Peniocereus greggii var. transmontanus*	ANPL-SR	Likely
Saguaro cactus	*Carnegiea gigantea*	ANPL-SR	Likely
Saguaro cactus ‘crested’	*Carnegia gigantea*	ANPL-HS	Likely
Sand food	*Pholisma sonorae*	ANPL-HS BLM Sensitive	Not expected
Scaly sandplant	*Pholisma arenarium*	ANPL-HS BLM Sensitive	Not expected
Schott wire lettuce	*Stephanomeria schottii*	BLM sensitive	Not expected
Silver cholla	*Cylindropuntia echinocarpa*	ANPL-SR	Likely
Smoke tree	*Psorothamnus spinosus*	ANPL-SA	Likely
Teddy-bear cholla	*Cylindropuntia bigelovii*	ANPL-SR	Likely

[A] Additional cacti and yucca protected under the Arizona Native Plant Law could be present in the biological study area.

[B] Arizona Native Plant Law (ANPL) status: HS = Highly Safeguarded, SR = Salvage Restricted, SA = Salvage Assessed, HR = Harvest Restricted

Sources: BLM 2006 (Table 3-4), BLM 2008b, (Appendix U), BLM 2010a (Table E-4), BLM 2011 (Table J-1)

Table 3.4-3 BLM Yuma Field Office Priority Plant Species and Potential Presence in the Project Area in Arizona

COMMON NAME	SCIENTIFIC NAME	POTENTIAL PRESENCE IN PROJECT AREA
Alverson's foxtail cactus	*Coryphantha alversonii*	Not expected
Big galleta	*Pleuraphis (Hilaria) rigida*	Present
Bush muhly	*Muhlenbergia porteri*	Present
Catclaw acacia	*Acacia greggii*	Present
Cottonwood	*Populus fremontii*	Present
Dune buckwheat	*Eriogonum deserticola*	Not expected
Dune spurge	*Euphorbia platysperma*	Unlikely
Long leaf sandpaper plant	*Petalonyx linearis*	Not expected
Scrub oak	*Quercus turbinella*	Present
Goodding's willow	*Salix gooddingii*	Present

Sources: BLM 2006 (Table 3-4), BLM 2008d (Appendix U), BLM 2010a (Table E-4), BLM 2011c (Table J-1)

Table 3.4-4 Special Status Plant Species That Could Occur Within or Near the Biological Study Area in California

SPECIES		STATUS (CALIFORNIA/BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Euphorbia abramsiana	Abrams' spurge	CRPR: 2B.2	Sandy soils in Mojave desertscrub and Sonoran desertscrub from 5 to 915 meters (15 to 3,000 feet) above mean sea level (MSL). Annual herb. Blooms September to November. Has been found north of Interstate 10 near McCoy Mountains (BLM 2012b) and could occur within or near biological study area in creosote bush association with sandy soil.	Moderate potential to occur
Hymenoxys odorata	Bitter hymenoxys	CRPR: 2B.1	Occurs in sandy soils in riparian scrub and Sonoran desertscrub from 45 to 150 meters (147 to 492 feet) above MSL. Annual herb. Blooms February to November. Low potential to occur along Colorado River and in woodland washes within study area.	Low potential to occur

SPECIES		STATUS (CALIFORNIA/BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Ditaxis serrata var. californica	California ditaxis	CRPR: 3.2	Occurs in Sonoran desertscrub from 30 to 1,000 meters (98 to 3,280 feet) above MSL. Perennial herb. Blooms March to December. Has been found north of Interstate 10 near McCoy Mountains (BLM 2012b) and likely is uncommon or absent on sandy soil in study area.	Low potential to occur
Proboscidea althaeifolia	Desert unicorn-plant	CRPR: 4.3	Occurs primarily in sandy soils of Sonoran desertscrub from 85 to 1,000 meters (278 to 3,280 feet) above MSL. Perennial herb. Blooms May to October. Has been found within study area (BLM 2012b; BLM and Riverside County Planning Department 2015).	Present
Teucrium cubense ssp. depressum	Dwarf germander	CRPR: 2B.2	Occurs in Desert dunes, playa margins and Sonoran desertscrub from 45 to 400 meters (147 to 1,312 feet) above MSL. Annual herb. Blooms March to November. Has not been found in or near study area but could occur on sandy soils there and in surrounding region.	Moderate potential to occur
Euphorbia platysperma	Flat-seeded spurge	CRPR: 1B.2 BLM: Sensitive	Sonoran desertscrub habitats with sandy soils and dunes below 200 meters (660 feet) above MSL. Could occur on sandy soils within or near study area but has not been found there.	Moderate potential to occur
Ditaxis claryana	Glandular ditaxis	CRPR: 2B.2	Perennial herb that prefers low-elevation sandy soils in Mojave and Sonoran desert creosote scrub habitats in southern California below 100 meters (328 feet) above MSL. Could occur within or near study area but has not been found there.	Moderate potential to occur
Astragalus sabulonum	Gravel milkvetch	CRPR: 2B.2	Occurs in desert dunes and Mojave/Sonoran desertscrub from –53 to 910 meters (–173 to 2,985 feet) above MSL. Annual herb. Blooms February to July. Could occur within or near study area but has not been found there.	Moderate potential to occur

SPECIES		STATUS (CALIFORNIA/BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Eriastrum harwoodii	Harwood's eriastrum	CRPR: 1B.2 BLM: Sensitive	Occurs in Desert dunes from 125 to 915 meters (410 to 3,001 feet) above MSL. Annual herb. Blooms March to June. This species has been found on stabilized dunes and other sandy soils in the biological study area (BLM 2012b; BLM and Riverside County Planning Department 2015; Transcon Environmental 2017).	Present
Astragalus insularis var. harwoodii	Harwood's milkvetch	CRPR: 2B.2	Occurs in sandy or gravelly soils along desert dunes and Mojave desertscrub below 710 meters (2,329 feet) above MSL. Annual herb. Blooms January to May. This species has been found in the biological study area (BLM and Riverside County Planning Department 2015; Transcon Environmental 2017).	Present
Colubrina californica	Las Animas colubrina	CRPR: 2B.3	Perennial deciduous shrub found in Mojave and Sonoran desertscrub and Joshua Tree woodland. Preferred habitat includes sandy, gravelly soils and dry canyons from 10 to 1,000 meters (32 to 3,280 feet) above MSL. Blooms April to June. Has been found north of Interstate 10 near McCoy Mountains but not within study area (BLM 2012b; BLM 2014b). Unlikely to occur in sandy soil within study area.	Low potential to occur
Calliandra eriophylla	Pink fairy-duster	CRPR: 2B.3	Perennial deciduous shrub associated with dry wash woodlands in the Sonoran desert from 120 to 1,500 meters (393 to 4,921 feet) above MSL. Blooms January to March. Low potential to occur in desert woodlands within study area.	Low potential to occur
Cryptantha costata	Ribbed cryptantha	CRPR: 4.3	Occurs in sandy soils in desert dunes and Mojave/Sonoran desertscrub from –60 to 500 meters (–196 to 1,640 feet) above MSL. Annual herb. Blooms February to May. This species has been found in the biological study area (BLM 2012b, 2014b; BLM and Riverside County Planning Department 2015).	Present

SPECIES		STATUS (CALIFORNIA/BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Carnegiea gigantea	Saguaro	CRPR: 2B.2	Large perennial succulent and signature species of Sonoran desertscrub. Known to prefer gravelly slopes and rocky soils on mountains or bajadas. Blooms May to June. Could occur in desert woodlands and upper slopes surrounding study area.	Moderate potential to occur
Funastrum utahense	Utah vine milkweed	CRPR: 4.2	Occurs in sandy or gravelly soil in Mojave/Sonoran desertscrub from 100 to 1,435 meters (328 to 4,708 feet) above MSL. Perennial herb. Blooms March to October. Has been found north of Interstate 10 near McCoy Mountains but not within study area (BLM 2012b).	Moderate potential to occur
Cryptantha holoptera	Winged cryptantha	CRPR: 4.3	Annual herb that occurs in Mojave desert/Sonoran desertscrub from 100 to 1,690 meters (328 to 5,544 feet) above MSL. Blooms March to April. This species has been observed in the study area (BLM 2014b).	Present

Notes: CRPR = California Rare Plant Ranking
MSL = mean sea level
List 1A = Plants presumed extirpated in California and either rare or extinct elsewhere
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2A = Plants presumed extirpated in California, but common elsewhere
List 2B = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which more information is needed – a review list
List 4 = Plants of limited distribution – a watch list
0.1 Seriously endangered in California
0.2 Fairly endangered in California
0.3 Not very endangered in California

Table 3.4-5 Federal and State-regulated Noxious Weeds Found in or Near the Biological Study Area

SCIENTIFIC NAME	COMMON NAME	FEDERAL DESIGNATION	CALIFORNIA DESIGNATION	ARIZONA DESIGNATION
Acroptilon repens	Russian knapweed	-	Noxious	Prohibited; Restricted
Alhagi maurorum	Camelthorn	-	Noxious	Prohibited; Restricted
Arundo donax	Giant-reed	-	Noxious	-
Carduus nutan	Musk thistle	-	Noxious	-
Centaurea diffusa	Diffuse knapweed	-	Noxious	Prohibited; Restricted
Centaurea solstitialis	Yellow star thistle	-	Noxious	Prohibited; Restricted
Cuscuta spp.	Dodder	-	Noxious	Prohibited; Restricted
Eichhornia crassipes	Water hyacinth	-	-	Prohibited; Restricted
Halogeton glomeratus	Halogeton	-	Noxious	Prohibited; Restricted
Hydrilla verticaillata	Hydrilla	-	Noxious	Prohibited
Onopordum acanthium	Scotch thistle	-	Noxious	Prohibited; Restricted
Salvinia molesta	Giant salvinia	Noxious	-	Prohibited
Salsola tragus	Prickly Russian thistle	-	Noxious	-
Tamarix spp.	Saltcedar	-	Noxious	-
Tribulus terrestris	Puncturevine	-	Noxious	Prohibited; Regulated

Table 3.4-6 Rare Vegetation Alliances on the Palo Verde Mesa Intersected by Project Segments

RARE VEGETATION ALLIANCE	SEGMENT	MILES OF ALLIANCE INTERSECTED
Pleuraphis rigida Alliance (big galleta)	ca-02 ca-06 ca-07 x-15 x-16	<0.1 0.1 0.3 0.1 0.7
Pluchea sericea Alliance (arrowweed)	ca-06	0.1
Prosopis glandulosa Alliance (honey mesquite)	ca-02 ca-06 p-16	<0.1 <0.1 0.1

Table 3.4-7 Harwood's Eriastrum Plants Located during 2017 Surveys along Route Segments on the Palo Verde Mesa

SEGMENT	PLANTS LOCATED IN 2017 SURVEYS (NUMBER)	SUITABLE HARWOOD'S ERIASTRUM HABITAT INTERSECTED (MILES)
p-16	0	0
p-17	0	0
p-18	1	0.6
x-15	1	0.1
x-16	0	0
x-19	0 Partial survey	0.4
ca-02	Not surveyed	0
ca-06	Not surveyed	0
ca-07	65	1.1
ca-09	27	2.6

3.4.2 Wildlife, Including Special Status Wildlife and Migratory Birds

Table 3.4-8 Federal ESA-Listed Threatened, Endangered, and Proposed Species in or near the Biological Study Area

SPECIES		STATUS[A,B]	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Mammals				
Antilocapra americana sonoriensis	Sonoran pronghorn	ESA: E, NSE AZ: SGCN CA: N/A	Sonoran desertscrub in open valleys	Introduced in 2011 into Kofa NWR south of the Proposed Action. Has been documented along or near the route segments in and near the Refuge. Not expected to occur in California portion.
Birds				
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	ESA: T AZ: SGCN CA: E BLM: Sensitive BLM: Focus Species	Nests in dense, wide riparian woodlands with well-developed understories	Present along the Colorado River in suitable habitat. Habitat at proposed river crossings is not suitable for nesting, although this species is likely to use the habitat during migration. The route segments cross proposed critical habitat along the Colorado River. Not expected to occur in California portion.
Empidonax traillii extimus	Southwestern willow flycatcher	ESA: E AZ: SGCN CA: E BLM: Sensitive BLM: Focus species	Nests in early successional riparian willow-dominated riparian habitats	Present along the Colorado River in suitable habitat. Habitat at proposed river crossings is not suitable for nesting, although this species could use the habitat during migration. Low potential to occur in California portion.
Rallus obsoletus yumanensis (Rallus longirostris yumanensis)	Yuma Ridgway's rail (Yuma clapper rail)	ESA: E AZ: SGCN CA: T, Fully Protected BLM: Sensitive BLM: Focus species	Freshwater marshes with stands of bulrushes and cattails	Known to be present in canals and drains adjacent to agricultural fields in California. No proposed crossing of the Colorado River has suitable marsh habitat, but there is potential habitat in nearby backwater channels. Moderate potential to occur in California portion.

SPECIES		STATUS[A,B]	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Reptiles				
Gopherus agassizii	Mojave desert tortoise	ESA: T AZ: SGCN CA: T BLM: Sensitive BLM: Focus species	Desertscrub	Known to be present on the Palo Verde Mesa around the Colorado River Substation. Designated critical habitat 3 miles west of the substation. High potential to occur in California portion.
Fish				
Xyrauchen texanus	Razorback sucker	ESA: E AZ: SGCN CA: E BLM: Sensitive	*Spring* – deep runs, eddies, backwater, and flooded off-channels *Summer* – runs and pools in shallow water with sandbars; *Winter* – low-velocity runs, pools, and eddies	Known to be present in mainstream Colorado River and nearby backwaters in and near the Project Area. The transmission line would span critical habitat. Moderate potential to occur in California portion.
Gila elegans	Bonytail chub	ESA: E AZ: SGCN CA: E BLM: Sensitive	Mainstream rivers, possibly preferring rocky areas and areas with faster flow. Also use eddies and pools 1-3 m deep.	Hatchery reared fish are released into backwater channels near the TWL crossing of the Colorado River. Moderate potential to occur in California portion.

Source: USFWS (2019)

[A] E = Endangered; T = Threatened; NSE = Nonessential experimental population;

[B] BLM Focus species as designated under the DRECP LUPA

N/A = not applicable (species is not present in the state); SGCN = Species of Greatest Conservation Need

Table 3.4-9 Special Status Wildlife Species (not including Federal ESA-listed species) that Could Occur within or near the Biological Study Area in Arizona

SPECIES		STATUS DESIGNATION (ARIZONA/BLM)[1]	HABITAT
Amphibians			
Incillius alvarius	Sonoran desert toad	Arizona: SGCN	Central and southern Arizona within several miles of permanent or temporary water sources.
Reptiles			
Lichanura trivirgata	Rosy boa	Arizona: SGCN	Rocky areas or boulder fields in mountains, bajadas, and hillsides in Sonoran desertscrub.
Heloderma suspectum	Gila monster	Arizona: SGCN	Prefers rocky areas in desertscrub and semi-desert grassland. Found in lower mountain slopes, rocky bajadas, canyon bottoms, and arroyos.
Gopherus morafkai	Sonoran desert tortoise	Arizona: SGCN BLM: Sensitive	Rocky terrain in Sonoran desertscrub.
Kinosternon sonoriense sonoriense	Sonora mud turtle	BLM: Sensitive	Usually found in rocky streams, creeks, and rivers. It also inhabits ponds, cattle tanks, and ditches. Within Project Area, rare along lower Colorado River.
Micruroides euryxanthus	Sonoran coralsnake	Arizona: SGCN	Sonoran, Mohave, and Chihuahuan desertscrubs, through Semi-desert Grassland, and into the lower reaches of the woodlands. Usually encountered in or near rocky or gravelly drainages, mesquite-lined washes, and canyons.
Uma scoparia	Mojave fringe-toed lizard	Arizona: SGCN BLM: Sensitive	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, flats with sandy hummocks formed around the bases of vegetation, washes, and the banks of rivers. Needs fine, loose sand for burrowing.
Fish - None (see Table 3.4-8 for federally listed fish)			
Birds (see Table 3.4.-8 for federally listed birds)			
Melozone aberti	Abert's towhee	Arizona: SGCN	Low-elevation desert riparian and desert wash habitats. Habitat includes dense vegetation, including thickets of willow, cottonwood, mesquite, and saltcedar. Likely restricted to within and near xeroriparian washes with dense shrubs and agricultural areas within Project Area.

SPECIES		STATUS DESIGNATION (ARIZONA/BLM)[1]	HABITAT
Botaurus lentiginosus	American bittern	Arizona: SGCN	Marshlands and very wet meadows. Rarely seen away from dense reeds, rushes, cordgrass, cattails and other emergent vegetation. Within Project Area, restricted to Colorado River.
Vireo bellii arizonae	Arizona Bell's vireo	Arizona: SGCN	Desert riparian woodlands, primarily with dense willow or mesquite. Uncommon along lower Colorado River.
Haliaeetus leucocephalus	Bald eagle	Arizona: SGCN BLM: Sensitive	Coasts, rivers, and large lakes. Open country and mountains during migration. Migrant and winter resident along lower Colorado River.
Laterallus jamaicensis coturniculus	California black rail	BLM: Sensitive	Salt and brackish water marshes. Occurs in the lower Colorado River in areas of pickle weed thickets.
Progne subis hesperia	Desert purple martin	Arizona: SGCN BLM: Sensitive	Open, flat areas and farms. Inhabits saguaros in southern Arizona. Much more common in southcentral Arizona than within and near Project Area.
Buteo regalis	Ferruginous hawk	Arizona: SGCN BLM: Sensitive	Plains and prairies throughout western North America. In southwestern Arizona, migrant and winter resident primarily near cultivated fields.
Melanerpes uropygialis	Gila woodpecker	Arizona: SGCN	Upper Sonoran desert in areas with stands of saguaro, riparian woodlands, and suburban areas.
Colaptes chrysoides	Gilded flicker	Arizona: SGCN BLM: Sensitive	Upper Sonoran desert in areas with stands of saguaro, riparian woodlands, and suburban areas.
Aquila chrysaetos	Golden eagle	Arizona: SGCN BLM: Sensitive	Open areas, plains, and mountains throughout North America. Nests in mountains of western Arizona.
Toxostoma lecontei	Le Conte's thrasher	Arizona: SGCN BLM: Sensitive	Flat desert areas with sparse vegetation, especially saltbush flats.
Melospiza lincolnii	Lincoln's sparrow	Arizona: SGCN	Winters in the southern United States in brushes and weedy habitats. Within Project Area, restricted to Colorado River and possibly along large xeroriparian washes.
Charadrius montanus	Mountain plover	Arizona: SGCN	Winters in semiarid plains and flats in the southwestern United States. Uncommon or rare along lower Colorado River.
Falco peregrinus anatum	Peregrine falcon	BLM: Sensitive	Open country and cliffs. Sometimes inhabits urban areas. Uncommon resident in southwestern Arizona.

SPECIES		STATUS DESIGNATION (ARIZONA/BLM)[1]	HABITAT
Tyrannus crassirostris	Thick-billed kingbird	Arizona: SGCN	Breeds in southeastern Arizona in riparian gallery forests. Rare in winter along Colorado River.
Athene cunicularia hypugaea	Western burrowing owl	Arizona: SGCN BLM: Sensitive	Utilizes burrows made by mammals in arid regions and deserts. Within Project Area, likely to be common only near agricultural areas and along and near Colorado River.
Aix sponsa	Wood duck	Arizona: SGCN	Wooded areas of rivers and ponds. Uncommon in winter along the lower Colorado River.
Mammals (see Table 3.4-8 for federally listed mammals)			
Idionycteris phyllotis	Allen's (Mexican) big-eared bat	BLM: Sensitive	Forested areas above 3,000 feet.
Castor canadensis	American beaver	Arizona: SGCN	Rivers, streams, and lakes. Could occur along Colorado River.
Myotis occultus	Arizona myotis	Arizona: SGCN BLM: Sensitive	In southwestern Arizona, they are found along the lower Colorado River.
Perognathus amplus	Arizona pocket mouse	Arizona: SGCN	Valley bottoms with shrub cover and stable soil. Likely to occur in Harquahala and Ranegras plains.
Macrotus californicus	California leaf-nosed bat	Arizona: SGCN BLM: Sensitive	Mostly found in the Sonoran desertscrub; summer and winter range the same; primarily roost in mines, caves, and rock shelters.
Myotis velifer	Cave myotis	Arizona: SGCN BLM: Sensitive	Desertscrub of creosote, brittlebush, palo verde, and cacti. Roost in caves, tunnels, and mineshafts, and under bridges, and sometimes in buildings within a few miles of water.
Sigmodon arizonae plenus	Colorado River cotton rat	Arizona: SGCN	Riparian thickets, dense grass cover, drier grassy areas. Restricted to Colorado River floodplain and surrounding area.
Ovis canadensis mexicana	Desert bighorn sheep	Arizona: SGCN	Desert crags, rocky outcrops, and valleys in southern Arizona. Occurs in all mountain ranges throughout Project Area.
Invertebrates – None			

Table 3.4-10 Length of Special Status Wildlife Species Habitat Intersected by the Proposed Action Route Segments in Arizona, in Miles

SPECIES HABITAT	PROPOSED ACTION SEGMENT														
	p-01	p-02	p-03	p-04	p-05	p-06	p-07	p-08	p-09	p-10	p-11	p-12	p-13	p-14	p-15e
Geographic Area[a]	EP&K	EP&K	EP&K	EP&K	EP&K	EP&K	QTZ	QTZ	QTZ	CB	CB	CB	CB	CB	CB
Sonoran desert toad	2.2	0.0	0.1	0.3	0.2	3.4	0.2	0.0	0.7	0.2	0.2	1.2	0.8	0.4	0.5
Gila monster	29.2	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.4	5.4	3.7	4.8	1.3	3.3
Mojave fringe-toed lizard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sonoran desert tortoise	3.7	0.0	1.3	0.4	0.7	21.0	0.0	0.0	2.6	1.1	5.1	0.0	0.0	0.0	0.0
Sonoran coral snake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Abert’s towhee	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
American bittern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Arizona Bell’s vireo	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bald eagle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Brewer’s sparrow	1.2	0.0	0.0	0.0	0.0	24.1	1.5	0.8	6.3	1.6	4.4	1.4	2.7	0.5	1.1
Brown-crested flycatcher	0.5	0.0	0.0	0.0	0.0	8.9	0.0	0.0	0.0	0.8	4.4	1.4	1.9	0.0	1.4
Costa’s hummingbird	1.2	0.0	0.0	0.0	0.0	24.1	1.5	0.8	6.3	1.6	4.4	1.4	2.7	0.5	1.1
Elf owl	1.2	0.0	0.0	0.0	0.0	24.1	1.5	0.8	6.3	0.8	0.0	0.0	0.0	0.0	0.0
Ferruginous hawk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gila woodpecker	1.3	0.0	0.0	0.0	0.0	24.1	1.5	0.8	6.3	1.6	4.4	1.4	2.7	0.5	1.2

SPECIES HABITAT	PROPOSED ACTION SEGMENT														
	p-01	p-02	p-03	p-04	p-05	p-06	p-07	p-08	p-09	p-10	p-11	p-12	p-13	p-14	p-15e
Gray vireo	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gilded flicker	1.2	0.0	0.0	0.0	0.0	24.1	1.5	0.8	6.3	1.6	4.4	1.4	2.7	0.5	1.1
Golden eagle	0.0	0.0	0.0	0.0	0.0	11.7	1.7	0.8	6.5	0.8	0.0	0.0	0.0	0.0	0.0
Le Conte’s thrasher	27.9	1.5	2.9	5.8	2.1	16.7	1.1	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Lucy’s warbler	1.2	0.0	0.0	0.0	0.0	24.1	1.5	0.8	6.3	1.6	4.4	1.4	2.7	0.5	1.3
Marsh wren	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Mountain plover	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sage sparrow	27.9	1.5	2.9	5.8	2.1	16.7	1.1	0.0	2.2	0.0	1.0	2.1	2.0	0.8	1.8
Sage thrasher	27.9	1.5	2.9	5.8	2.1	16.7	1.1	0.0	2.2	0.0	1.0	1.0	0.0	0.0	0.0
Savannah sparrow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sprague’s pipit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia rail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Western burrowing owl	0.3	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.8	4.4	1.5	2.5	0.5	1.2
Western least bittern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Western yellow-billed cuckoo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.38	0.1	0.3
Wood duck	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
American beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Arizona myotis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

SPECIES HABITAT	PROPOSED ACTION SEGMENT														
	p-01	p-02	p-03	p-04	p-05	p-06	p-07	p-08	p-09	p-10	p-11	p-12	p-13	p-14	p-15e
California leaf-nosed bat	23.6	0.0	1.0	5.8	0.2	31.2	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	3.0
Arizona pocket mouse	29.3	1.5	2.9	5.8	2.1	28.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cave myotis	29.3	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	2.3
Colorado River cotton rat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.5	1.2	3.2
Desert bighorn sheep	3.2	0.0	0.0	1.3	1.0	5.8	0.0	0.0	6.4	1.6	5.4	0.8	0.0	0.0	0.0
Greater Western mastiff bat	29.3	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	2.9
Harquahala Southern pocket gopher	29.0	1.5	2.9	5.8	1.8	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harris' antelope squirrel	29.3	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	3.2
Kit fox	29.3	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	2.8
Little pocket mouse	29.3	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	2.8
Mexican free-tailed bat	29.4	1.5	2.9	5.8	2.1	41.4	2.6	0.8	8.6	1.6	5.4	3.7	4.8	0.8	0.5
Pale Townsend's big-eared bat	29.4	1.5	2.9	5.8	2.1	41.4	2.6	0.8	8.6	1.6	5.4	3.7	4.8	1.3	3.1
Pocketed free-tailed bat	3.0	0.0	0.0	0.0	0.0	26.1	2.2	0.8	6.8	1.6	4.7	1.8	3.5	0.8	1.7

SPECIES HABITAT	PROPOSED ACTION SEGMENT														
	p-01	p-02	p-03	p-04	p-05	p-06	p-07	p-08	p-09	p-10	p-11	p-12	p-13	p-14	p-15e
Spotted bat	27.7	1.5	2.9	5.8	2.1	17.2	1.1	0.0	2.3	0.0	0.9	2.2	2.2	0.8	2.0
Western red bat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Western yellow bat	29.4	1.5	2.9	5.8	2.1	41.4	2.6	0.8	8.6	1.6	5.4	3.7	2.7	0.0	0.0
Yuma myotis	29.3	1.5	2.9	5.8	2.1	41.3	2.6	0.8	8.6	1.6	5.4	3.6	4.8	1.3	3.2

[a] Geographic Area: EP&K = East Plains and Kofa Zone, QTZ = Quartzsite Zone, CB = Copper Bottom Zone, CR&CA – Colorado River and California Zone

Table 3.4-11 Length of Special Status Wildlife Species Habitat Intersected by Alternative Route Segments d-01, x-01 to x-08, and i-01 to i-08s in Arizona, in Miles

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT																
	d-01	x-01	x-02	x-03	x-04	x-05	x-06	x-07	x-08	i-01	i-02	i-03	i-04	i-05	i-06	i-07	i-08s
Geographic Area[a]	EP&K	EP&K	EP&K	EP&K	EP&K	QTZ	QTZ	QTZ	CB	EP&K	EP&K	EP&K	EP&K	QTZ	CB	CB	CR&CA
Sonoran desert toad	1.6	0.3	0.1	0.2	1.1	1.7	1.4	0.8	0.4	0.1	0.0	1.2	1.7	1.5	1.6	1.7	0.1
Gila monster	21.0	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	1.4
Mojave fringe-toed lizard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sonoran desert tortoise	0.7	0.0	0.0	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.1	2.5	11.0	0.0	5.6	0.0	0.0
Sonoran coral snake	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1.3	5.8	0.0	0.0	0.0	0.0
Abert’s towhee	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	2.4	0.0	0.0	2.0	3.5	0.8

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT																
	d-01	x-01	x-02	x-03	x-04	x-05	x-06	x-07	x-08	i-01	i-02	i-03	i-04	i-05	i-06	i-07	i-08s
American bittern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Arizona Bell's vireo	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Bald eagle	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Brewer's sparrow	8.8	0.0	0.0	0.0	2.1	9.2	8.7	5.4	0.1	0.1	0.0	3.5	10.8	1.8	2.5	3.4	0.6
Brown-crested flycatcher	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.2	3.2	0.4
Costa's hummingbird	1.0	0.0	0.0	0.0	2.1	9.2	8.7	5.4	0.1	0.1	0.0	3.5	10.8	1.8	2.5	3.4	0.2
Elf owl	1.0	0.0	0.0	0.0	2.1	9.2	8.7	5.4	0.0	0.1	0.0	3.5	10.8	1.8	0.0	0.0	0.0
Ferruginous hawk	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Gila woodpecker	1.0	0.0	0.0	0.0	2.1	9.2	8.7	5.4	0.1	0.1	0.0	3.5	10.8	1.8	2.5	3.4	0.3
Gray vireo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gilded flicker	1.0	0.0	0.0	0.0	2.1	9.2	8.7	5.4	0.1	0.1	0.0	3.5	10.8	1.8	2.5	3.4	0.3
Golden eagle	0.0	0.0	0.0	0.0	0.0	9.3	8.9	5.4	0.0	0.0	0.0	0.0	5.0	1.8	0.5	0.0	0.0
Le Conte's thrasher	19.8	9.5	9.2	7.9	27.2	3.9	2.4	2.4	0.0	9.7	3.8	19.5	1.3	1.3	1.7	0.0	0.0
Lucy's warbler	1.0	0.0	0.0	0.0	2.1	9.2	8.7	5.4	0.1	0.1	0.0	3.5	10.8	1.8	2.5	3.4	0.3
Marsh wren	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT																
	d-01	x-01	x-02	x-03	x-04	x-05	x-06	x-07	x-08	i-01	i-02	i-03	i-04	i-05	i-06	i-07	i-08s
Mountain plover	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Pacific wren	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Sage sparrow	19.8	9.5	9.2	7.9	27.2	3.9	2.4	2.4	1.4	9.7	3.8	19.5	1.3	1.3	5.6	4.3	0.6
Sage thrasher	19.8	9.5	9.2	7.9	27.2	3.9	2.4	2.4	1.4	9.7	3.8	19.5	1.3	1.3	5.6	0.4	0.0
Savannah sparrow	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Sprague’s pipit	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Virginia rail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Western burrowing owl	1.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	2.0	0.0	0.0	2.0	3.4	0.3
Western least bittern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Western yellow-billed cuckoo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Wood duck	0.0	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
American beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Arizona myotis	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
California leaf-nosed bat	14.9	2.4	4.5	0.0	3.5	13.2	11.2	8.0	1.5	4.4	0.0	6.3	12.2	3.2	8.4	7.9	0.9
Arizona pocket mouse	18.6	9.5	9.2	7.9	29.4	0.0	0.0	0.0	0.0	9.8	3.8	23.4	6.6	0.0	0.0	0.0	0.0

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT																
	d-01	x-01	x-02	x-03	x-04	x-05	x-06	x-07	x-08	i-01	i-02	i-03	i-04	i-05	i-06	i-07	i-08s
Cave myotis	21.0	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	0.7
Colorado River cotton rat	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	7.8	1.3
Desert bighorn sheep	0.0	0.0	0.0	1.0	2.0	1.7	0.0	0.0	0.9	0.0	0.0	1.5	7.5	0.0	7.2	0.0	0.0
Greater Western mastiff bat	28.8	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	1.2
Harquahala Southern pocket gopher	21.0	9.5	9.2	7.9	16.8	0.0	0.0	0.0	0.0	9.8	3.8	12.5	0.0	0.0	0.0	0.0	0.0
Harris' antelope squirrel	21.0	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	0.9
Kit fox	21.0	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	0.8
Little pocket mouse	21.0	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	0.8
Mexican free-tailed bat	28.8	9.5	9.2	7.9	29.4	13.2	11.3	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	5.5	0.0
Pale Townsend's big-eared bat	28.8	9.5	9.2	7.9	29.4	13.2	11.3	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	1.3
Pocketed free-tailed bat	2.1	0.0	0.0	0.0	3.2	10.8	10.1	6.6	0.3	0.2	0.0	5.2	11.3	2.3	3.9	5.1	0.3

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT																
	d-01	**x-01**	**x-02**	**x-03**	**x-04**	**x-05**	**x-06**	**x-07**	**x-08**	**i-01**	**i-02**	**i-03**	**i-04**	**i-05**	**i-06**	**i-07**	**i-08s**
Spotted bat	19.7	9.5	9.2	7.9	27.3	3.9	2.5	2.6	1.4	9.7	3.8	19.7	1.5	1.4	5.8	4.3	0.7
Western red bat	0.0	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Western yellow bat	21.0	9.5	9.2	7.9	29.4	13.2	11.3	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	2.9	0.0
Yuma myotis	21.0	9.5	9.2	7.9	29.4	13.2	11.2	8.0	1.5	9.8	3.8	23.4	12.2	3.2	8.4	7.9	1.0

[a] Geographic Area: EP&K = East Plains and Kofa Zone, QTZ = Quartzsite Zone, CB = Copper Bottom Zone, CR&CA – Colorado River and California Zone

Table 3.4-12 Length of Special Status Wildlife Species Habitat Intersected by Alternative Route Segments in-01, cb-01 to cb-10, qn-01, qn-02, qs-01, and qs-02 in Arizona, in Miles

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT											
	in-01	cb-01	qn-01	cb-02	qn-02	cb-03	qs-01	cb-04	qs-02	cb-05	cb-06	cb-10
Geographic Area[a]	EP&K	CB	QTZ	CB	EP&K	CB	QTZ	CB	QTZ	CB	CB	CB
Sonoran desert toad	2.3	0.0	0.2	0.2	1.8	0.4	1.0	0.6	1.4	0.9	0.1	0.1
Gila monster	15.9	3.7	0.5	2.5	12.2	5.7	3.6	2.2	5.7	5.2	2.7	1.8
Mojave fringe-toed lizard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Sonoran desert tortoise	10.3	3.7	0.1	2.5	1.8	5.1	0.0	0.9	2.0	0.0	0.0	0.0
Sonoran coral snake	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Abert’s towhee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
American bittern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Arizona Bell’s vireo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bald eagle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Brewer’s sparrow	11.5	3.7	0.4	2.4	4.9	3.2	1.4	0.5	1.3	1.3	1.1	0.3
Brown-crested flycatcher	0.0	0.9	0.0	1.5	0.0	3.2	0.0	0.0	0.0	0.5	0.0	0.7

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT											
	in-01	cb-01	qn-01	cb-02	qn-02	cb-03	qs-01	cb-04	qs-02	cb-05	cb-06	cb-10
Costa's hummingbird	11.5	3.7	0.4	2.4	4.9	3.2	1.4	0.5	1.3	1.3	1.1	0.3
Elf owl	11.5	0.8	0.4	0.0	3.5	0.0	1.4	0.0	0.6	0.0	0.0	0.0
Ferruginous hawk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gila woodpecker	11.6	3.7	0.4	2.4	5.0	3.2	1.4	0.5	1.3	1.3	1.1	0.5
Gray vireo	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gilded flicker	11.5	3.7	0.4	2.4	4.9	3.2	1.4	0.5	1.3	1.3	1.1	0.4
Golden eagle	6.7	0.8	0.4	0.0	5.3	0.0	1.8	0.0	1.9	0.0	0.0	0.0
Le Conte's thrasher	4.1	0.0	0.1	0.0	6.9	0.0	2.1	0.0	4.2	0.0	0.0	0.0
Lucy's warbler	11.5	3.7	0.4	2.4	4.9	3.2	1.4	0.5	1.3	1.3	1.1	0.6
Marsh wren	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Mountain plover	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific wren	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Sage sparrow	4.1	0.0	0.1	0.2	6.9	2.1	2.1	1.7	4.2	3.8	1.5	1.0
Sage thrasher	4.1	0.0	0.1	0.2	6.9	2.1	2.1	1.7	4.2	1.1	1.0	0.0
Savannah sparrow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sprague's pipit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia rail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT											
	in-01	cb-01	qn-01	cb-02	qn-02	cb-03	qs-01	cb-04	qs-02	cb-05	cb-06	cb-10
Western burrowing owl	0.0	2.9	0.0	2.4	0.0	3.4	0.0	0.5	0.0	1.2	1.1	0.5
Western least bittern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Western yellow-billed cuckoo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3
Wood duck	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
American beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Arizona myotis	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
California leaf-nosed bat	15.9	3.7	0.5	2.5	12.2	5.6	3.6	2.1	5.7	5.2	2.6	1.5
Arizona pocket mouse	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cave myotis	15.9	3.7	0.5	2.5	12.3	5.6	3.6	2.1	5.7	5.2	2.7	1.1
Colorado River cotton rat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	2.5	1.7
Desert bighorn sheep	7.6	3.7	0.0	2.5	0.0	5.7	0.0	0.9	0.0	0.0	0.0	0.0
Greater Western mastiff bat	15.9	3.7	0.5	2.5	12.2	5.6	3.6	2.1	5.7	5.2	2.6	1.3

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT											
	in-01	cb-01	qn-01	cb-02	qn-02	cb-03	qs-01	cb-04	qs-02	cb-05	cb-06	cb-10
Harquahala Southern pocket gopher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harris' antelope squirrel	15.9	3.7	0.5	2.5	12.3	5.6	3.6	2.1	5.7	5.2	2.7	1.6
Kit fox	15.9	3.7	0.5	2.5	12.3	5.6	3.6	2.1	5.7	5.2	2.7	1.4
Little pocket mouse	15.9	3.7	0.5	2.5	12.3	5.6	3.6	2.1	5.7	5.2	2.7	1.4
Mexican free-tailed bat	16.0	3.7	0.6	2.5	12.6	5.7	3.7	2.2	5.7	5.2	2.7	0.5
Pale Townsend's big-eared bat	16.0	3.7	0.6	2.5	12.4	5.7	3.7	2.1	5.7	5.2	2.7	1.6
Pocketed free-tailed bat	13.6	3.7	0.4	2.5	7.1	4.4	2.1	0.7	2.2	1.9	1.5	0.8
Spotted bat	4.1	0.0	0.2	0.2	7.2	2.3	2.1	1.7	4.1	3.8	1.6	1.3
Western red bat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Western yellow bat	16.0	3.7	0.6	2.5	12.4	5.7	3.7	2.1	5.7	4.3	2.7	0.0
Yuma myotis	15.9	3.7	0.5	2.5	12.3	5.6	3.6	2.1	5.7	5.2	2.7	1.7

[a] Geographic Area: EP&K = East Plains and Kofa Zone, QTZ = Quartzsite Zone, CB = Copper Bottom Zone, CR&CA – Colorado River and California Zone

Table 3.4-13 Sonoran Desert Tortoise Habitat Intersected by Route Segments

SEGMENT	DISTANCE (MILES) OF INTERSECTED SONORAN DESERT TORTOISE HABITAT	
	CATEGORY 2	CATEGORY 3
East Plains and Kofa Zone [A]		
i-03	-	4.2
i-04	4.2	-
in-01	9.5	-
p-01	-	6.7
p-04	-	-
p-05	0.8	-
p-06	Not mapped [A]	Not mapped [A]
x-03	-	-
x-04	-	-
SCS Alt. Dist. Line	2.8	-
Quartzsite Zone		
p-09	-	2.6
x-05	-	-
qs-02	-	1.4
qn-02	-	2.9
Copper Bottom Zone		
cb-01	-	3.2
cb-02	-	2.2
cb-03	-	4.3
cb-04	-	1.9
cb-05	-	1.7
cb-06	-	1.9
i-06	-	7.1
i-07	-	1.0
x-08	-	1.3
p-10	-	1.1
p-11	-	4.0
p-12	-	2.7
p-13	-	0.3

[A] Sonoran desert tortoise habitat in the Kofa NWR is not mapped. Good-quality habitat is along parts of this route in the New Water Mountains and Livingston Hills.

Table 3.4-14 Special Status Wildlife Species (not including Federal ESA-listed species) that Could Occur within or near the Biological Study Area in California

SPECIES		STATUS DESIGNATION (CALIFORNIA/ BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Amphibians				
Scaphiopus couchii	Couch's spadefoot	California: SSC BLM: Sensitive	Desert, arid, and semi-arid shrublands/chaparral, shortgrass plains, cropland/hedgerow, savanna. High potential to occur in and near ephemeral pools and agricultural areas in eastern portion of Project Area in California.	Moderate potential to occur
Incillius alvarius	Sonoran desert toad	California: SSC	Occurs in a variety of habitats including creosote bush desertscrub, grasslands, along major river corridors, and the edges of agriculture. Generally, within several miles of permanent or temporary water sources.	Not expected to occur
Reptiles (see Table 3.4-8 for federally listed reptiles)				
Uma scoparia	Mojave fringe-toed lizard	California: SSC BLM: Sensitive	Sparsely vegetated dunes, flats, riverbanks and washes with fine, loose sand. This species is common on sandy soils within the biological study area.	Present
Kinosternon sonoriense	Sonoran mud turtle	California: SSC	Usually found in rocky streams, creeks, and rivers. It also inhabits ponds, cattle tanks, and ditches. Within study area, rare along lower Colorado River.	Low potential to occur
Fish – None (see Table 3.4-8 for federally listed fish)				
Mammals				
Taxidea taxus	American badger	California: SSC	Agricultural land, grassland, and other open areas and brush lands with sparse groundcover. This species has been detected near the study area.	Present
Myotis occultus	Arizona myotis	California: SSC	Ponderosa pine and oak-pine woodland near water and wooded riparian areas in desert areas.	Low potential to occur
Macrotus californicus	California leaf-nosed bat	California: SSC BLM: Sensitive	Lowland desertscrub roosting in caves, abandoned mine tunnels and rock shelters in canyon walls.	Low potential to occur
Myotis velifer	Cave myotis	California: SSC BLM: Sensitive	Evergreen or pine-oak forest and pine forest at mid-high elevations and riparian habitats near desertscrub at lower elevations.	Low potential to occur

SPECIES		STATUS DESIGNATION (CALIFORNIA/ BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Sigmodon arizonae plenus	Colorado River cotton rat	California: SSC	Riparian thickets, dense grass cover, drier grassy areas. Likely rare or absent along Colorado River in study area.	Low potential to occur
Felis concolor brownii	Yuma mountain lion	California: SSC	From mountains to valley bottoms where prey is abundant. Absent or very rare in study area.	Low potential to occur
Ovis canadensis nelsoni	Desert bighorn sheep	California: FP BLM: Sensitive BLM: Focus Species	Canyons, hills, and mountains in rough terrain throughout the southwestern US. There is no habitat for this species within the study area.	Not expected to occur
Antrozous pallidus	Pallid bat	California: SSC BLM: Sensitive	Deserts and grasslands, mostly near rocky outcrops and water. Roosts in rock crevices.	Low potential to occur
Nyctinomops femorosaccus	Pocketed free-tailed bat	California: SSC	Rocky canyons with outcroppings and high cliffs. Roosts in rock crevices and caves. Observed near shrubland, mixed tropical deciduous forest, and floodplains with sycamore and mesquite with nearby high cliffs.	Low potential to occur
Corynorhinus townsendii	Townsend's big-eared bat	California: SSC BLM: Sensitive	Near the entrance of caves, mine tunnels, and other well-ventilated areas. Night roosts can include caves as well as buildings and tree cavities. Potential foraging habitat exists along the Colorado River and in adjacent agricultural fields, and it is likely that this species is present in the area at least occasionally.	Moderate potential to occur
Lasiurus xanthinus	Western yellow bat	California: SSC	Roosts in trees, including woodland and riparian habitat.	Moderate potential to occur
Myotis yumanensis	Yuma myotis	BLM: Sensitive	Riparian, desertscrub, moist woodlands, and forests, typically near open water.	Moderate potential to occur
Birds (see Table 3.4-8 for federally listed birds)				
Vireo bellii arizonae	Arizona bell's vireo	California: Endangered BLM: Sensitive	Dense shrub vegetation in riparian areas, fields, woodlands, scrub oak, chaparral near water in arid regions. Could occur uncommonly within or near study area.	Not expected to occur

SPECIES		STATUS DESIGNATION (CALIFORNIA/ BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Toxostoma bendirei	Bendire's thrasher	California: SSC BLM: Sensitive BLM: Focus Species	Rare or uncommon during summer, dry and semi-arid washes and other areas containing shrubs, trees, and especially yucca. Unlikely to occur in study area.	Low potential to occur
Athene cunicularia	Burrowing owl	California: SSC BLM: Sensitive BLM: Focus Species	Open grasslands, savannas and plains. Occasionally in vacant lots. This species has been detected within the study area.	Present
Laterallus jamaicensis coturniculus	California black rail	California: Threatened, Fully Protected BLM: Focus Species	Marshlands and very wet meadows. Rarely seen away from dense reeds, rushes, cordgrass, cattails and other emergent vegetation. Within Project Area, restricted to Colorado River.	Moderate potential to occur
Toxostoma crissale	Crissal thrasher	California: SSC	Microphyll woodland and riparian washes, mesquite woodlands, other dense scrub vegetation. Uncommon year-round resident in region.	Low potential to occur
Micrathene whitneyi	Elf owl	California: Endangered BLM: Sensitive	Riparian forests, desert, woodlands. No suitable habitat along California route segments but could be present uncommonly in the surrounding area.	Low potential to occur
Melanerpes uropygialis	Gila woodpecker	California: Endangered BLM: Sensitive BLM: Focus Species	Arid lowland scrub, second-growth and montane scrub, deciduous forests, riparian woodlands. There is very little or no habitat for this species in the study area.	Low potential to occur
Colaptes chrysoides	Gilded flicker	California: Endangered BLM: Sensitive	Saguaro cactus or Joshua tree stands, riparian areas lined with cottonwood and willows in desert lowlands and foothills. There is very little or no habitat for this species in the study area.	Low potential to occur
Aquila chrysaetos	Golden eagle	California: Fully Protected Eagle Protection Act BLM: Sensitive BLM: Focus Species	Open areas, plains, and mountains throughout North America. This species is not known to nest or forage in the vicinity of the study area in California, and the Palo Verde Mesa offers low prey availability.	Low potential to occur

SPECIES		STATUS DESIGNATION (CALIFORNIA/ BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Grus canadensis tabida	Greater sandhill crane	California: Threatened, Fully Protected BLM: Sensitive	Overwinters in agricultural fields and irrigated pastures and nearby shallow-water wetlands for roosting. Sandhill cranes, including possibly this subspecies, have been observed uncommonly in agricultural fields near Blythe.	Moderate potential to occur
Toxostoma lecontei	Le Conte's thrasher	California: SSC	Vegetated washes and desertscrub with saltbush, shadscale, cholla cacti, or other species suitable for nesting. This species has been detected within or near the study area.	Present
Asio otus	Long-eared owl	California: SSC	Uncommon to rare year-round resident in riparian and desert woodlands throughout deserts of southern California. There are no stands or riparian trees or large desert woodlands within the study area that would be suitable habitat for this species.	Not expected to occur
Lanius ludovicianus	Loggerhead shrike	California: SSC	Year-round resident in open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. This species has been detected in or near the study area.	Present
Charadrius montanus	Mountain plover	California: SSC BLM Sensitive	Winters in and near cultivated fields along lower Colorado River. Could occur uncommonly within and near cultivated fields.	Moderate potential to occur
Circus cyaneus	Northern harrier	California: SSC	Grasslands, flat areas, and hills with open habitat. This species has been detected within or near the study area.	Present
Asio flammeus	Short-eared owl	California: SSC	Rare in open areas, fields, and wetlands. Unlikely to occur in study area.	Not expected to occur
Setophaga petechia sonorana	Sonora yellow warbler	California: SSC	Cottonwood, willow, and salt cedar riparian woodlands. Limited habitat within the study area.	Low potential to occur
Piranga rubra	Summer tanager	California: SSC	Summer resident in mature cottonwood riparian woodlands along Colorado River. Limited or no habitat within and near study area.	Low potential to occur
Buteo swainsoni	Swainson's hawk	California: Threatened BLM: Sensitive BLM: Focus Species	Plains and hills with open vegetation. This species is not expected to nest within or near the study area.	Low potential to occur

SPECIES		STATUS DESIGNATION (CALIFORNIA/ BLM)	HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
Pyrocephalus rubinus	Vermilion flycatcher	California: SSC	Cropland, cultivated lands, desert, shrubland, riparian woodlands near water. Could occur uncommonly near cultivated fields.	Moderate potential to occur
Icteria virens	Yellow-breasted chat	California: SSC	Summer resident in dense, early successional riparian woodlands and thickets with willows, salt cedar, vine tangles, and dense brush with well-developed understories and some overstory for perches.	Low potential to occur
Xanthocephalus xanthocephalus	Yellow-headed blackbird	California: SSC	Freshwater wetlands with open water and dense, emergent vegetation. Foraging in fields and open cultivated areas. Could occur uncommonly along Colorado river and among agricultural fields.	Moderate potential to occur
Invertebrates – None				

Notes: FP = Fully Protected; SSC = Species of Special Concern
BLM Focus species as designated under the DRECP LUPA

Table 3.4-15 Length of Special Status Wildlife Species Habitat Intersected by the Proposed Action Route Segments in California, in Miles, Based on DRECP Habitat Models

SPECIES HABITAT	PROPOSED ACTION SEGMENT			
	p-15w	p-16	p-17	p-18
Couch's spadefoot toad	6.6	4.7	3.0	2.4
Mojave fringe-toed lizard	0.0	2.7	3.0	2.4
Arizona Bell's vireo	0.0	0.0	0.0	0.0
Bendire's thrasher	0.0	0.0	0.1	2.4
Burrowing owl	6.6	4.7	1.9	0.0
California black rail	1.2	0.0	0.0	0.0
Elf owl	6.1	0.0	0.0	0.0
Gila woodpecker	0.0	0.0	0.0	0.0
Golden eagle	0.0	0.2	1.9	0.0
Greater sandhill crane	6.6	4.7	2.9	0.0
Le Conte's thrasher	0.0	2.7	3.0	2.4
Long-eared owl	6.6	4.7	3.0	2.4
Southwestern willow flycatcher	1.2	0.	0.0	0.0
Western yellow-billed cuckoo	6.1	0.0	0.0	0.0
Yuma Ridgway's rail	1.2	0.0	0.0	0.0
American badger	6.6	4.7	3.0	2.4
Desert bighorn sheep	0.0	0.2	1.9	0.0
California leaf-nosed bat	0.0	2.7	3.0	2.4
Desert kit fox	0.0	2.7	3.0	2.4
Mule deer	0.0	2.7	3.0	2.4
Pallid bat	0.0	2.7	3.0	2.4
Townsend's big-eared bat	0.0	2.7	3.0	2.4

Table 3.4-16 Length of Special Status Wildlife Species Habitat Intersected by Alternative Route Segments in California, in Miles, Based on DRECP Habitat Models

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT													
	x-09	x-10	x-11	x-12	x-13	x-15	x-16	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
Couch's spadefoot toad	0.5	1.4	1.4	2.1	1.3	2.2	1.7	2.1	3.6	3.5	0.8	6.6	2.6	1.4
Mojave fringe-toed lizard	0.0	0.00	1.4	0.8	1.3	2.2	1.7	0.0	0.5	3.5	0.0	0.6	2.6	1.4
Arizona Bell's vireo	0.5	1.4	0.0	0.0	0.0	0.0	0.0	1.2	1.1	0.0	0.8	1.1	0.0	0.0
Bendire's thrasher	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Burrowing owl	0.5	1.4	1.4	2.1	1.3	2.2	1.5	2.1	3.6	0.9	0.8	6.6	2.6	0.1
California black rail	0.5	1.4	0.0	0.0	0.0	0.0	0.0	2.1	3.6	0.0	0.8	3.5	0.0	0.0
Elf owl	0.5	1.4	1.4	0.8	0.0	0.0	0.0	2.1	3.6	0.0	0.8	6.6	1.9	0.0
Gila woodpecker	0.5	1.4	0.0	0.0	0.0	0.0	0.0	1.2	1.1	0.0	0.8	1.1	0.0	0.0
Golden eagle	0.0	0.0	0.0	0.0	0.9	0.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greater sandhill crane	0.5	1.4	1.4	2.1	1.3	2.2	1.7	2.1	3.6	3.4	0.8	6.6	2.6	1.4
Le Conte's thrasher	0.5	0.0	1.4	0.8	1.3	2.2	1.7	0.0	0.5	3.5	0.8	0.6	2.6	1.4
Long-eared owl	0.5	1.4	1.4	2.1	1.3	2.2	1.7	2.1	3.6	3.5	0.8	6.6	2.6	1.4
Southwestern willow flycatcher	0.5	1.4	0.0	0.0	0.0	0.0	0.0	2.1	1.1	0.0	0.8	1.1	0.0	0.0
Western yellow-billed cuckoo	0.5	1.4	0.0	0.0	0.0	0.0	0.0	2.1	3.6	0.0	0.8	6.0	0.0	0.0
Yuma Ridgway's rail	0.5	1.4	0.0	0.0	0.0	0.0	0.0	2.1	1.1	0.0	0.8	1.1	0.0	0.0
American badger	0.5	1.4	1.4	2.1	1.3	2.2	1.7	2.1	3.6	3.5	0.8	6.6	2.6	1.4
Desert bighorn sheep	0.0	0.0	0.0	0.0	0.0	0.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SPECIES HABITAT	ALTERNATIVE ROUTE SEGMENT													
	x-09	x-10	x-11	x-12	x-13	x-15	x-16	ca-01	ca-02	ca-04	ca-05	ca-06	ca-07	ca-09
California leaf-nosed bat	0.0	0.0	0.0	0.0	1.3	2.2	1.7	0.0	0.0	3.5	0.0	0.0	0.7	1.4
Desert kit fox	0.0	0.0	0.0	0.0	1.3	2.2	1.7	0.0	0.0	3.5	0.0	0.0	0.7	1.4
Mule deer	0.0	0.0	1.4	0.8	1.3	2.2	1.7	0.0	0.5	3.5	0.0	0.6	2.6	1.4
Pallid bat	0.0	0.0	0.0	0.0	1.3	2.2	1.7	0.0	0.0	3.5	0.0	0.0	0.7	1.4
Townsend’s big-eared bat	0.0	0.0	0.0	0.0	1.3	2.2	1.7	0.0	0.0	3.5	0.0	0.0	0.7	1.4

Table 3.4-17 Suitable Mojave Fringe-toed Lizard Habitat Intersected by Segment

SEGMENT	MILES OF SUITABLE MOJAVE FRINGE-TOED LIZARD HABITAT INTERSECTED
p-16	0
p-17	0
p-18	0.6
x-15	0.1
x-16	0
x-19	0.4
ca-02	0
ca-06	0
ca-07	1.1
ca-09	2.6

Table 3.4-18 Length of Wildlife Habitat Management Areas Crossed by Route Segments

WILDLIFE HABITAT MANAGEMENT AREA	ZONE	SEGMENT	LENGTH (MILES)
Belmont/Big Horn Mountains	East Plains and Kofa	p-01	2.8
Havasu Habitat Management Area	East Plains and Kofa	in-01	7.5
Lake Havasu	East Plains and Kofa	SCS Alt. Dist. Line	2.8
Palomas Plain	East Plains and Kofa	d-01	7.4
		i-01	8.4
		i-02	3.3
		i-03	8.7
		p-01	0.4
		p-02	1.2
		p-03	2.1
		p-04	5.5
		p-05	2.0
		p-06	10.3
		x-01	7.9
		x-02	6.7
		x-03	5.6
		x-04	10.8
Wildlife Movement Corridors	East Plains and Kofa	i-04	2.8
		in-01	1.2
		p-06	0.4
	Quartzsite	p-07	2.1
		p-08	0.7
		p-09	3.9
		x-05	3.7
		x-06	4.0
		x-07	3.5
	Copper Bottom	i-06	1.3
		i-07	0.2
		x-08	0.8

WILDLIFE HABITAT MANAGEMENT AREA	ZONE	SEGMENT	LENGTH (MILES)
Desert Mountains	East Plains and Kofa	d-01	4.2
		i-03	3.0
		i-04	8.3
		in-01	1.9
		p-04	2.1
		p-05	1.1
		x-04	1.7
	Quartzsite	p-08	0.4
		p-09	6.7
		qn-02	1.7
		qs-02	0.2
		x-07	0.3
	Copper Bottom	cb-01	3.2
		cb-02	2.2
		cb-03	2.4
		cb-04	1.0
		cb-05	1.1
		i-06	4.0
		p-10	1.2
		p-11	4.0
		p-12	1.0
Lower Colorado and Gila River Riparian Area	Copper Bottom	cb-10	0.7
		p-15e	0.9
	Colorado River and California	ca-04	0.3
		i-08s	0.2
		p-15w	0.1
		x-11	0.1

3.5 CULTURAL RESOURCES

Table 3.5-1 Cultural Sites per NRHP Eligibility by Site Type in Arizona (All Segments, 1-Mile-Wide Corridor)

ELIGIBILITY[1]	HISTORIC	PREHISTORIC	MULTI COMPONENT	UNKNOWN CHRONOLOGY	TOTAL
NRHP-listed	0	0	0	0	0
Determined eligible	1	2	0	10	13
Recommended eligible	5	6	0	33	44
Determined ineligible	1	0	0	11	12
Recommended ineligible	1	0	0	0	1
Unevaluated/ Unknown	19	158	2	357	536
Total	27	166	2	411	606

[1]Recommended= recorder's opinion. Determined=agency determination.

Table 3.5-2 Cultural Sites per NRHP Eligibilities by Site Type in California (All Segments, 1-Mile-Wide Corridor)

ELIGIBILITY[1]	HISTORIC	PREHISTORIC	MULTI COMPONENT	UNKNOWN CHRONOLOGY	TOTAL
NRHP-listed	0	0	0	0	0
Determined eligible	0	4	3	0	7
Recommended eligible	0	2	3	0	5
Determined ineligible	106	36	16	0	158
Recommended ineligible	0	0	0	0	0
Unevaluated/ Unknown	64	64	13	1	142
Total	170	106	35	1	312

[1]Recommended= recorder's opinion. Determined=agency determination.

3.6 CONCERNS OF INDIAN TRIBES

See Chapter 3.

3.7 LAND USE

See Chapter 3.

3.8 RECREATION

See Chapter 3.

3.9 SOCIOECONOMICS

Table 3.9-1 Population in the Socioeconomics Study Area and the Block Group Study Area

AREA	2000[1]	2010	2014	ABSOLUTE CHANGE (2010–2014)	% CHANGE (2010–2014)
United States	281,421,906	308,745,538	314,107,084	5,361,546	1.7
Arizona	5,130,632	6,392,017	6,561,516	169,499	2.7
California	33,871,648	37,253,956	38,066,920	812,964	2.2
La Paz County, AZ	19,715	20,489	20,348	-141	-0.7
Maricopa County, AZ	3,072,149	3,817,117	3,947,382	130,265	3.4
Riverside County, CA	1,545,387	2,189,641	2,266,899	77,258	3.5
Socioeconomic Study Area Total	4,637,251	6,027,247	6,234,629	207,382	3.4
Block Group Study Area Total	N/A	21,913	21,710	-203	-0.9
La Paz County, Arizona Block Group Total	—	9,956	9,674	-282	-2.8
Block Group 3, Census Tract 201	—	1,411	1,266	-145	-10.3
Block Group 1, Census Tract 205.01	—	991	1,218	227	22.9
Block Group 2, Census Tract 205.01	—	993	703	-290	-29.2
Block Group 1, Census Tract 205.02	—	1,338	1,360	22	1.6

AREA	2000[1]	2010	2014	ABSOLUTE CHANGE (2010–2014)	% CHANGE (2010–2014)
Block Group 2, Census Tract 205.02	—	1,659	1,257	-402	-24.2
Block Group 3, Census Tract 205.02	—	1,391	1,673	282	20.3
Block Group 1, Census Tract 206.02	—	1,072	633	-439	-41.0
Block Group 2, Census Tract 206.02	—	669	703	34	5.1
Block Group 2, Census Tract 9403	—	432	861	429	99.3
Block Group 1, Census Tract 9800	—	0	0	0	N/A
Maricopa County, Arizona Block Group Total	—	4,536	3,867	-669	-14.7
Block Group 1, Census Tract 506.03	—	1,116	868	-248	-22.2
Block Group 2, Census Tract 506.03	—	2,888	2,382	-506	-17.5
Block Group 3, Census Tract 506.03	—	532	617	85	16.0
Riverside County, California Block Group Total	—	7,421	8,169	748	10.1
Block Group 1, Census Tract 459	—	994	884	-110	-11.1
Block Group 2, Census Tract 459	—	844	693	-151	-17.9
Block Group 2, Census Tract 462	—	1,791	2,197	406	22.7
Block Group 1, Census Tract 469	—	2,043	2,684	641	31.4
Block Group 1, Census Tract 470	—	653	823	170	26.0
Block Group 2, Census Tract 470	—	1,096	888	-208	-19.0

Table 3.9-2 Trends in Population Age Distribution by Age Groups in the Socioeconomics Study Area and the Block Group Study Area

AREA	2010 TOTALS				2014 TOTALS				2014 SHARE OF POPULATION (%)			
	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER
United States	74,181,467	112,806,642	81,489,445	40,267,984	73,777,658	114,306,519	82,844,946	43,177,961	23.5	36.4	26.4	13.7
Arizona	1,629,014	2,312,398	1,568,774	881,831	1,620,492	2,360,674	1,605,863	974,487	24.7	36.0	24.5	14.9
California	9,295,040	14,423,538	9,288,864	4,246,514	9,212,288	14,677,650	9,559,075	4,617,907	24.2	38.6	25.1	12.1
La Paz County, AZ	3,678	4,422	5,706	6,683	3,557	4,427	5,363	7,001	17.5	21.8	26.4	34.4
Maricopa County, AZ	1,007,861	1,444,341	902,274	462,641	1,011,479	1,477,926	944,441	513,536	25.6	37.4	23.9	13.0
Riverside County, CA	620,108	804,470	506,477	258,586	616,767	834,712	532,732	282,688	27.2	36.8	23.5	12.5
Block Group Study Area Total	4,798	5,207	5,940	5,968	4,078	5,305	6,009	6,318	18.8	24.4	27.7	29.1
La Paz County, Arizona Block Group Total	1,125	1,435	2,750	4,646	1,141	1,301	2,356	4,876	11.8	13.4	24.4	50.4

AREA	2010 TOTALS				2014 TOTALS				2014 SHARE OF POPULATION (%)			
	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER
Block Group 3, Census Tract 201	172	182	356	701	253	118	251	644	20.0	9.3	19.8	50.9
Block Group 1, Census Tract 205.01	89	87	277	538	252	258	128	580	20.7	21.2	10.5	47.6
Block Group 2, Census Tract 205.01	75	84	312	522	73	67	276	287	10.4	9.5	39.3	40.8
Block Group 1, Census Tract 205.02	89	116	374	759	0	0	402	958	0.0	0.0	29.6	70.4
Block Group 2, Census Tract 205.02	106	145	377	1,031	0	0	89	1,168	0.0	0.0	7.1	92.9

AREA	2010 TOTALS				2014 TOTALS				2014 SHARE OF POPULATION (%)			
	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER
Block Group 3, Census Tract 205.02	102	161	387	741	3	192	461	1,017	0.2	11.5	27.6	60.8
Block Group 1, Census Tract 206.02	245	336	325	166	164	182	219	68	25.9	28.8	34.6	10.7
Block Group 2, Census Tract 206.02	122	169	238	140	138	109	353	103	19.6	15.5	50.2	14.7
Block Group 2, Census Tract 9403	125	155	104	48	258	375	177	51	30.0	43.6	20.6	5.9
Block Group 1, Census Tract 9800	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A

AREA	2010 TOTALS				2014 TOTALS				2014 SHARE OF POPULATION (%)			
	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER
Maricopa County, Arizona Block Group Total	1,396	1,436	1,292	412	785	1,345	1,249	488	20.3	34.8	32.3	12.6
Block Group 1, Census Tract 506.03	380	375	278	83	194	284	307	83	22.4	32.7	35.4	9.6
Block Group 2, Census Tract 506.03	836	867	900	285	393	831	838	320	16.5	34.9	35.2	13.4
Block Group 3, Census Tract 506.03	180	194	114	44	198	230	104	85	32.1	37.3	16.9	13.8
Riverside County, California Block Group Total	2,277	2,336	1,898	910	2,152	2,659	2,404	954	26.3	32.5	29.4	11.7

AREA	2010 TOTALS				2014 TOTALS				2014 SHARE OF POPULATION (%)			
	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER	17 YEARS AND YOUNGER	18 TO 44 YEARS	45 TO 64 YEARS	65 AND OLDER
Block Group 1, Census Tract 459	328	303	267	96	275	239	273	97	31.1	27.0	30.9	11.0
Block Group 2, Census Tract 459	300	257	197	90	198	237	136	122	28.6	34.2	19.6	17.6
Block Group 2, Census Tract 462	612	615	384	180	683	698	727	89	31.1	31.8	33.1	4.1
Block Group 1, Census Tract 469	550	653	545	295	517	1,072	722	373	19.3	39.9	26.9	13.9
Block Group 1, Census Tract 470	209	197	155	92	233	234	278	78	28.3	28.4	33.8	9.5
Block Group 2, Census Tract 470	278	311	350	157	246	179	268	195	27.7	20.2	30.2	22.0

Sources: Calculated using data from 2010 Census Data and 2014 American Community Survey 5-year estimates.

Table 3.9-3 Number of Housing Units in the Socioeconomics Study Area and the Block Group Study Area

AREA	2000[1]	2010	2014	ABSOLUTE CHANGE (2010–2014)	% CHANGE (2010–2014)
United States	115,904,641	131,704,954	132,741,033	1,036,079	0.8
Arizona	2,189,189	2,844,526	2,874,548	30,022	1.1
California	12,214,549	13,680,081	13,781,929	101,848	0.7
La Paz County, AZ	15,133	16,049	16,113	64	0.4
Maricopa County, AZ	1,250,231	1,639,279	1,657,753	18,474	1.1
Riverside County, CA	584,674	800,707	810,426	9,719	1.2
Socioeconomics Study Area Total	1,850,038	2,456,035	2,484,292	28,257	1.2
Block Group Study Area Total	—	14,238	13,750	–488	–3.4
La Paz County, Arizona					
Block Group 3, Census Tract 201	—	1,127	967	–160	–14.2
Block Group 1, Census Tract 205.01	—	1,096	698	–398	–36.3
Block Group 2, Census Tract 205.01	—	824	672	–152	–18.4
Block Group 1, Census Tract 205.02	—	1,197	1,179	–18	–1.5
Block Group 2, Census Tract 205.02	—	1,541	1,419	–122	–7.9
Block Group 3, Census Tract 205.02	—	1,344	1,516	172	12.8
Block Group 1, Census Tract 206.02	—	692	580	–112	–16.2
Block Group 2, Census Tract 206.02	—	573	564	–9	–1.6
Block Group 2, Census Tract 9403	—	185	348	163	88.1
Block Group 1, Census Tract 9800	—	0	0	0	N/A
Maricopa County, Arizona					
Block Group 1, Census Tract 506.03	—	465	422	–43	–9.2
Block Group 2, Census Tract 506.03	—	1,369	1,235	–134	–9.8
Block Group 3, Census Tract 506.03	—	227	249	22	9.7
Riverside County, California					
Block Group 1, Census Tract 459	—	413	449	36	8.7
Block Group 2, Census Tract 459	—	375	380	5	1.3
Block Group 2, Census Tract 462	—	659	652	–7	–1.1
Block Group 1, Census Tract 469	—	1,161	1,391	230	19.8

AREA	2000[1]	2010	2014	ABSOLUTE CHANGE (2010–2014)	% CHANGE (2010–2014)
Block Group 1, Census Tract 470	—	379	469	90	23.7
Block Group 2, Census Tract 470	—	611	560	–51	–8.3

Source: US Census Bureau, 2000 Decennial Census, 2010 Decennial Census, and 2014 American Community Survey 5-year estimates. Note that the margin of error is not included in the 2014 estimates.
[1]Note that due to changes in population, new census tracts and block groups were created between the 2000 and 2010 Census and thus the block group information is excluded for 2000.

Table 3.9-4 Number of Households in the Socioeconomics Study Area and the Block Group Study Area

AREA	2000[1]	2010	2014	ABSOLUTE CHANGE (2010–2014)	% CHANGE (2010–2014)
United States	105,480,101	116,716,467	116,211,092	–505,375	–0.4
Arizona	1,901,327	2,380,990	2,387,246	6,256	0.3
California	11,502,870	12,577,498	12,617,280	39,782	0.3
La Paz County, AZ	8,362	9,198	9,707	509	5.5
Maricopa County, AZ	1,132,886	1,411,583	1,424,244	12,661	0.9
Riverside County, CA	506,218	686,260	690,388	4,128	0.6
Socioeconomics Study Area Total	1,647,466	2,107,041	2,124,339	17,298	0.8
Block Group Study Area Total		9,159	8,972	–187	–2.0
La Paz County, Arizona					
Block Group 3, Census Tract 201	—	684	535	–149	–21.8
Block Group 1, Census Tract 205.01	—	518	560	42	8.1
Block Group 2, Census Tract 205.01	—	541	376	–165	–30.5
Block Group 1, Census Tract 205.02	—	712	775	63	8.8
Block Group 2, Census Tract 205.02	—	894	836	–58	–6.5
Block Group 3, Census Tract 205.02	—	797	1,089	292	36.6

AREA	2000[1]	2010	2014	ABSOLUTE CHANGE (2010–2014)	% CHANGE (2010–2014)
Block Group 1, Census Tract 206.02	—	467	253	–214	–45.8
Block Group 2, Census Tract 206.02	—	309	318	9	2.9
Block Group 2, Census Tract 9403	—	151	304	153	101.3
Block Group 1, Census Tract 9800	—	0	0	0	N/A
Maricopa County, Arizona					
Block Group 1, Census Tract 506.03	—	342	315	–27	–7.9
Block Group 2, Census Tract 506.03	—	987	849	–138	–14.0
Block Group 3, Census Tract 506.03	—	163	199	36	22.1
Riverside County, California					
Block Group 1, Census Tract 459	—	342	317	–25	–7.3
Block Group 2, Census Tract 459	—	276	284	8	2.9
Block Group 2, Census Tract 462	—	584	624	40	6.8
Block Group 1, Census Tract 469	—	732	710	–22	–3.0
Block Group 1, Census Tract 470	—	238	280	42	17.6
Block Group 2, Census Tract 470	—	422	348	–74	–17.5

Source: US Census Bureau, American Community Survey.

[1]Note that due to changes in population, new census tracts and block groups were created between the 2000 and 2010 Census and thus the block group information is excluded for 2000.

Table 3.9-5 Average Ownership Residential Property Value in the Socioeconomics Study Area

YEAR	LA PAZ COUNTY	MARICOPA COUNTY	RIVERSIDE COUNTY	UNITED STATES
2007	$85,500	$248,800	$395,100	$181,800
2010	$100,000	$238,600	$325,300	$188,400
2014	$81,800	$175,600	$236,400	$175,700
Change 2007–2014 (%)	–4.3	–29.4	–40.2	–3.4

Source: US Census Bureau, American Community Survey (3-year and 5-year estimates).

Table 3.9-6 Total Employment in the Socioeconomics Study Area

YEAR	MARICOPA COUNTY	LA PAZ COUNTY	RIVERSIDE COUNTY	COUNTY TOTAL	ARIZONA	CALIFORNIA	UNITED STATES
2001	1,908,689	7,084	677,205	2,592,978	2,840,781	19,411,367	165,519,200
2002	1,923,026	7,192	711,097	2,641,315	2,861,339	19,437,490	165,159,100
2003	1,971,000	7,326	740,535	2,718,861	2,934,459	19,573,490	166,026,500
2004	2,056,808	7,722	790,461	2,854,991	3,063,915	19,876,899	169,036,700
2005	2,189,317	7,914	836,426	3,033,657	3,238,928	20,255,748	172,557,400
2006	2,303,682	8,099	873,513	3,185,294	3,401,000	20,644,868	176,123,600
2007	2,357,669	8,173	884,695	3,250,537	3,494,178	21,040,405	179,885,700
2008	2,323,252	7,882	866,135	3,197,269	3,434,174	20,818,920	179,639,900
2009	2,196,712	7,448	824,279	3,028,439	3,264,077	20,038,208	174,233,700
2010	2,152,299	7,429	814,349	2,974,077	3,208,325	19,803,742	173,034,700
2011	2,206,171	7,576	844,458	3,058,205	3,268,482	20,172,087	176,278,700
2012	2,248,357	7,896	869,508	3,125,761	3,322,733	20,850,443	179,081,700
2013	2,311,453	7,857	903,859	3,223,169	3,398,932	21,496,020	182,390,100
2014	2,362,912	7,898	941,386	3,312,196	3,461,581	22,040,057	185,798,800
Absolute Change 2001–2014	454,223	814	264,181	719,218	620,800	2,628,690	20,279,600
% Change 2001–2014	23.8	11.5	39.0	27.7	21.9	13.5	12.3

Source: Employment by place of work (BEA 2016).

Table 3.9-7 Unemployment Rate (%) in the Socioeconomics Study Area

YEAR	MARICOPA COUNTY	LA PAZ COUNTY	RIVERSIDE COUNTY	ARIZONA	CALIFORNIA	UNITED STATES
2000	3.2	6.3	5.4	4.0	4.9	4.0
2001	4.2	6.7	5.5	4.8	5.4	4.7
2002	5.6	6.9	6.4	6.1	6.7	5.8
2003	5.2	7.1	6.5	5.7	6.8	6.0
2004	4.4	6.7	6.0	5.0	6.2	5.5
2005	4.0	6.8	5.4	4.7	5.4	5.1
2006	3.6	5.8	5.0	4.2	4.9	4.6
2007	3.3	5.1	6.0	3.9	5.4	4.6
2008	5.4	7.7	8.6	6.2	7.3	5.8
2009	9.1	9.9	13.1	9.9	11.2	9.3
2010	9.5	10.2	13.8	10.4	12.2	9.6
2011	8.6	9.8	13.2	9.5	11.7	8.9
2012	7.3	8.6	11.6	8.3	10.4	8.1
2013	6.6	8.2	9.9	7.7	8.9	7.4
2014	5.8	7.6	8.2	6.8	7.5	6.2
2015	5.2	7.6	6.7	6.1	6.2	5.3

Source: Local Area Unemployment Statistics (Bureau of Labor Statistics 2016)

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Table 3.9-8 Total Employment by Industry in the Socioeconomics Study Area and Percent Change from 2001 to 2014

INDUSTRY	MARICOPA COUNTY			LA PAZ COUNTY			RIVERSIDE COUNTY			COUNTY AREA TOTAL			ARIZONA			CALIFORNIA			UNITED STATES		
	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)
Farm Employment	8,529	6,615	-22.4	344	314	-8.7	11,960	7,634	-36.2	20,833	14,563	-30.1	22,274	31,102	39.6	289,195	243,247	-15.9	3,060,000	2,643,000	-13.6
Nonfarm Employment	1,900,160	2,356,297	24.0	6,994	7,584	8.4	665,245	933,752	40.4	2,572,399	3,297,633	28.2	2,818,507	3,430,479	21.7	19,122,172	21,796,810	14.0	162,459,200	183,155,800	12.7
Private Nonfarm Employment	1,704,578	2,130,888	25.0	4,659	5,188	11.4	562,543	807,517	435.	2,271,780	2,943,593	29.6	2,421,325	2,985,670	23.3	16,508,016	19,180,182	16.2	139,308,200	159,125,800	14.2
Forestry, Fishing, and Related Activities	2,876	2,571	-10.6	(D)	458	N/A	8,932	7,025	-21.4	11,808	10,054	-14.9	18,088	15,492	-14.4	190,088	239,317	25.9	801,500	937,000	16.9
Mining, Quarrying, and Oil and Gas Extraction	3,193	8,248	158.3	(D)	257	N/A	1,029	2,173	111.2	4,222	10,678	152.9	12,888	23,762	84.4	38,070	74,205	94.9	808,400	1,692,000	109.3
Utilities	7,617	7,886	3.5	(D)	(D)	N/A	1,467	1,713	16.8	9,084	9,599	5.7	11,239	12,352	9.9	56,349	60,497	7.4	615,800	582,400	-5.4
Construction	150,723	126,364	-16.2	214	(D)	N/A	69,756	71,017	1.8	220,693	197,381	-10.6	214,198	177,409	-17.2	1,063,005	1,009,359	-5.0	9,816,700	9,610,400	-2.1
Manufacturing	155,861	122,598	-21.3	270	198	-26.7	54,775	46,827	-14.5	210,906	169,623	-19.6	210,914	170,847	-19.0	1,868,376	1,386,726	-25.8	16,921,600	12,993,400	-23.2
Wholesale Trade	85,215	85,817	0.7	128	(D)	N/A	18,493	29,751	60.9	103,836	115,568	11.3	105,127	107,369	2.1	728,229	797,591	9.5	6,233,400	6,419,700	3.0
Retail Trade	215,560	256,466	19.0	1,283	1,277	-0.5	81,254	110,062	35.5	298,097	367,805	23.4	324,514	377,982	16.5	1,954,160	2,037,193	4.2	18,257,800	18,710,900	2.5
Transportation and Warehousing	60,976	74,103	21.5	(D)	234	N/A	16,522	38,198	131.2	77,498	112,535	45.2	81,295	101,125	24.4	575,725	668,898	16.2	5,480,000	6,225,000	13.6
Information	47,301	42,131	-10.9	56	85	51.8	8,382	9,064	8.1	55,739	51,280	-8.0	62,299	54,809	-12.0	629,498	549,517	-12.7	4,047,800	3,302,000	-18.4
Finance and Insurance	126,353	179,595	42.1	71	105	47.9	20,262	34,072	68.2	146,686	213,772	45.7	151,154	216,841	43.5	856,686	1,018,599	18.9	7,800,600	9,833,100	26.1
Real Estate and Rental and Leasing	96,927	164,130	69.3	356	309	-13.2	32,800	61,106	86.3	130,083	225,545	73.4	138,630	221,120	59.5	825,776	1,245,909	50.9	5,548,400	8,135,100	46.6
Professional, Scientific, and Technical Services	123,731	160,720	29.9	152	(D)	N/A	28,428	44,869	57.8	152,311	205,589	35.0	166,130	216,827	30.5	1,529,401	1,894,820	23.9	10,271,800	12,822,700	24.8
Management of Companies and Enterprises	18,513	29,936	61.7	0	0	0.0	3,819	3,712	-2.8	22,332	33,648	50.7	22,669	34,839	53.7	297,056	243,062	-18.2	1,789,300	2,336,000	30.6
Administrative and Support and Waste Management and Remediation Services	183,599	217,119	18.3	159	210	32.1	43,648	72,721	66.6	227,406	290,050	27.5	234,265	285,219	21.8	1,232,861	1,456,983	18.2	9,603,500	11,734,900	22.2
Educational Services	22,070	54,792	148.3	(D)	(D)	N/A	6,350	12,015	89.2	28,420	66,807	135.1	32,121	73,887	130.0	322,246	497,758	54.5	3,011,300	4,439,000	47.4
Health Care and Social Assistance	142,412	249,742	75.4	(D)	(D)	N/A	54,924	99,359	80.9	197,336	349,101	76.9	228,350	373,099	63.4	1,512,057	2,418,291	59.9	15,253,400	20,832,900	36.6
Arts, Entertainment, and Recreation	34,899	51,917	48.8	(D)	(D)	N/A	14,945	20,801	39.2	49,844	72,718	45.9	53,903	74,922	39.0	458,087	603,203	31.7	3,165,100	4,149,400	31.1

INDUSTRY	MARICOPA COUNTY			LA PAZ COUNTY			RIVERSIDE COUNTY			COUNTY AREA TOTAL			ARIZONA			CALIFORNIA			UNITED STATES		
	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)	2001	2014	CHANGE (%)
Accommodation and Food Services	136,587	175,327	28.4	(D)	(D)	N/A	52,469	75,650	44.2	189,056	250,977	32.8	213,261	264,398	24.0	1,247,563	1,601,752	28.4	10,806,200	13,476,300	24.7
Other Services (except Public Administration)	90,165	121,426	34.7	(D)	326	N/A	44,288	67,382	52.1	134,453	189,134	40.7	140,280	183,371	30.7	1,122,783	1,376,502	22.6	9,075,600	10,893,600	20.0
Government and Government Enterprises	195,582	225,409	15.3	2,335	2,396	2.6	102,702	126,235	22.9	300,619	354,040	17.8	397,182	444,809	12.0	2,614,156	2,616,628	0.1	23,151,000	24,030,000	3.8
Total Employment	1,908,689	2,362,912	23.8	7,338	7,898	7.6	677,205	941,386	39.0	2,593,232	3,312,196	27.7	2,840,781	3,461,581	21.9	19,411,367	22,040,057	13.5	165,519,200	185,798,800	12.3

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

Note that industry-specific county area total values exclude the non-disclosed values.

Source: Employment by Industry data (Bureau of Economic Analysis 2016).

Table 3.9-9 Average Per-capita Personal Income in the Socioeconomics Study Area ($)

YEAR	MARICOPA COUNTY	LA PAZ COUNTY	RIVERSIDE COUNTY	ARIZONA	CALIFORNIA	UNITED STATES
2001	30,422	17,732	25,483	27,220	34,091	31,540
2002	30,708	17,820	26,054	27,590	34,306	31,815
2003	31,520	18,787	27,111	28,446	35,381	32,692
2004	33,363	20,434	28,404	30,222	37,244	34,316
2005	35,743	21,583	29,599	32,429	39,046	35,904
2006	38,754	22,338	31,203	34,848	41,693	38,144
2007	39,803	24,620	31,586	35,929	43,182	39,821
2008	39,406	25,017	31,497	36,077	43,786	41,082
2009	36,966	24,635	29,869	34,063	41,588	39,376
2010	37,318	24,872	29,753	34,185	42,411	40,277
2011	39,024	27,553	31,073	35,675	44,852	42,453
2012	40,424	28,344	31,879	36,788	47,614	44,266
2013	40,003	28,255	32,503	36,723	48,125	44,438
2014	41,222	29,219	33,590	37,895	49,985	46,049

Source: CA4 Personal Income and Employment by Major Component (BEA 2016).

Table 3.9-10 Average Composition (%) of Per-capita Personal Income in the Socioeconomics Study Area

AREA	2001			2014		
	EARNINGS	DIVIDENDS, INTEREST, AND RENT	TRANSFER PAYMENTS	EARNINGS	DIVIDENDS, INTEREST, AND RENT	TRANSFER PAYMENTS
United States	68.4	18.3	13.3	64.2	18.5	17.2
Arizona	67.3	19.2	13.5	61.4	18.2	20.4
California	70.2	18.3	11.5	64.8	20.1	15.1
La Paz County, AZ	53.1	20.1	26.8	44.7	18.9	36.4
Maricopa County, AZ	71.4	17.9	10.7	65.6	17.6	16.8
Riverside County, CA	66.6	18.1	15.3	64.4	15.7	19.9

Source: Calculated based on personal income data (BEA 2016).

Table 3.9-11 Sales Tax Revenues Distributed by State Governments to Cities and Counties in the Socioeconomics Study Area (Millions $)

YEAR	TOTAL CITY AND COUNTY DISTRIBUTIONS			MUNICIPAL DISTRIBUTIONS	
	LA PAZ COUNTY	MARICOPA COUNTY	RIVERSIDE COUNTY	QUARTZSITE, AZ	BLYTHE, CA
2006	2.8	760.5	223.0	0.4	1.4
2007	2.7	810.2	224.0	0.3	1.5
2008	2.6	783.8	212.5	0.3	1.4
2009	2.3	676.1	183.7	0.3	1.3
2010	2.1	621.8	167.8	0.3	1.1
2011	2.2	649.0	178.7	0.3	1.2
2012	2.5	674.9	196.4	0.3	1.2
2013	2.7	706.2	216.4	0.3	1.5
2014	2.9	754.4	229.1	0.3	1.4
2015	2.8	796.7	242.8	0.3	1.5

Sources: Arizona: Compiled from Annual Reports (Arizona Department of Revenue 2016). California: Research and statistics page (California Board of Equalization 2016).
Notes: The reports are for fiscal year and aligned to calendar year (2006 represents FY2005–2006). The municipal distributions are a subset of the total for each county, collected by the state on behalf of the municipality and distributed on a weekly basis. No other municipalities in the block group study area received municipal distributions.

Table 3.9-12 Property Tax Revenues in the Socioeconomics Study Area (Millions $)

YEAR	MARICOPA COUNTY	LA PAZ COUNTY	RIVERSIDE COUNTY
2006	3,646.2	16.8	1,826.8
2007	3,981.4	16.9	2,210.2
2008	4,271.1	17.7	2,575.1
2009	4,567.4	19.5	2,627.1
2010	4,401.1	19.7	2,333.8
2011	4,120.6	21.4	2,404.4
2012	4,019.7	21.7	2,258.1
2013	3,995.2	21.8	2,437.3
2014	4,223.1	22.3	2,437.3
2015	4,319.4	22.3	2,635.3

Source: Arizona: Compiled from Annual Reports (Arizona Department of Revenue 2016). California: California Board of Equalization, research and statistics page. For Arizona counties, the reported tax revenues represent the sum of primary and secondary tax revenues as reported in annual reports of the Department of Revenue.

Table 3.9-13 Total Assessed Property Value in the Socioeconomics Study Area (Millions $)

YEAR	MARICOPA COUNTY	LA PAZ COUNTY	RIVERSIDE COUNTY
2006	36,294.7	172.1	164,667.2
2007	49,534.6	200.1	202,526.9
2008	58,303.6	235.1	236,147.7
2009	57,984.1	244.8	239,053.8
2010	49,708.0	245.1	213,500.7
2011	38,760.3	241.4	203,842.1
2012	34,400.5	235.0	199,947.7
2013	32,229.0	224.6	199,947.7
2014	35,079.6	210.7	224,081.1
2015	34,623.7	201.8	224,081.1

Source: Arizona: Compiled from Annual Reports (Arizona Department of Revenue 2016). California: California Board of Equalization, research and statistics page.

Table 3.9-14 Payments in Lieu of Taxes for the Counties in the Socioeconomics Study Area, 2000-2016

YEAR	LA PAZ COUNTY		MARICOPA COUNTY		RIVERSIDE COUNTY	
	ACRES	AMOUNT ($M)	ACRES	AMOUNT ($M)	ACRES	AMOUNT ($M)
2000	1,849,673	0.5	2,299,643	1.0	2,526,533	1.0
2001	1,849,608	0.8	2,299,602	1.5	2,526,041	1.5
2002	1,848,542	0.9	2,299,624	1.5	2,531,559	1.6
2003	1,849,012	1.0	2,307,190	1.7	2,539,871	1.8
2004	1,842,767	1.0	2,456,262	1.8	2,337,931	1.8
2005	1,842,767	1.1	2,458,021	1.8	2,337,255	1.9
2006	1,842,767	1.1	2,457,360	1.9	2,337,025	1.9
2007	1,829,124	1.1	2,457,368	1.8	2,336,944	1.9
2008	1,829,162	1.7	2,456,838	2.9	2,341,522	3.0
2009	1,831,900	1.7	2,440,166	3.0	2,382,390	3.1
2010	1,831,900	1.8	2,440,166	2.7	2,386,342	3.1
2011	1,857,761	1.8	2,441,551	2.7	2,393,259	3.2
2012	1,857,761	1.8	2,441,551	2.8	2,397,320	3.2
2013	1,852,047	1.8	2,441,551	2.8	2,401,623	3.1
2014	1,848,763	1.9	2,434,825	3.0	2,381,909	3.3
2015	1,848,763	1.9	2,434,825	3.0	2,383,212	3.3
2016	1,848,763	1.9	2,434,825	3.1	2,389,185	3.3

YEAR	LA PAZ COUNTY		MARICOPA COUNTY		RIVERSIDE COUNTY	
	ACRES	AMOUNT ($M)	ACRES	AMOUNT ($M)	ACRES	AMOUNT ($M)
Total, all years	$23,901,066		$38,964,309		$42,154,831	
2016 dollars per acre	$1.05		$1.25		$1.40	

Source: Payment in Lieu of Taxes (DOI 2016)

Table 3.9-15 Tourism-related Visitor Spending and Tax Revenues in the Socioeconomics Study Area, 2014

CATEGORY	LA PAZ COUNTY	MARICOPA COUNTY	RIVERSIDE COUNTY
Visitor Spending, $ Millions	$137.4	$9,500.0	$6,600.0
Visitor Spending per County Resident, $	$6,792	$2,324	$2,834
Total Tourism-related Tax Collected, $ Millions	$10.3	$946.1	$557.6
Tax Distribution as Percentage of Total Sales Tax Collected, %	27.7	79.7	41.1

Source: Based on Interactive County Travel Impacts Reports (Arizona Office of Tourism 2016) and Interactive County Travel Impact Reports (Visit California 2016).

Table 3.9-16 Direct Employment in Tourism-related Industries in the Socioeconomics Study Area, 2014

INDUSTRY	LA PAZ COUNTY	MARICOPA COUNTY	RIVERSIDE COUNTY
Accommodation and Food Services	702	44,800	43,700
Arts, Entertainments, and Recreation	504	18,900	18,700
Retail	173	13,900	6,800
Other Travel	6	7,300	1,800
Ground Transportation	0	6,200	1,500
Visitor Air Transportation	0	3,100	300
Total Tourism-related Jobs	1,385	94,200	72,800
Share of County Employment (%)	17.5	4.0	7.7

Source: Based on Interactive County Travel Impacts Reports (Arizona Office of Tourism 2016) and Interactive County Travel Impact Reports (Visit California 2016).

3.10 ENVIRONMENTAL JUSTICE

Table 3.10-1 Total Population and Minority Population in the Environmental Justice Study Area

GEOGRAPHY	TOTAL POPULATION [a]	WHITE (NON-HISPANIC)	MINORITY POPULATION					
			BLACK OR AFRICAN-AMERICAN (NON-HISPANIC)	AMERICAN INDIAN AND ALASKA NATIVE (NON-HISPANIC)	ASIAN (NON-HISPANIC)	OTHER RACE CATEGORY (NON-HISPANIC)[b]	HISPANIC OR LATINO	% MINORITY
Environmental Justice Comparison Area								
EJ Comparison Area (sum of the three counties)	6,234,629	3,162,273	326,451	73,736	277,135	153,870	2,241,164	49.3%
States								
Arizona	6,561,516	3,734,853	257,620	262,626	186,451	142,940	1,977,026	43.1%
California	38,066,920	14,905,601	2,155,929	145,736	5,062,736	1,262,469	14,534,449	60.8%
Counties								
Maricopa County, Arizona	3,947,382	2,281,134	192,604	60,987	142,261	89,296	1,181,100	42.2%
La Paz County, Arizona	20,348	12,396	49	2,513	140	213	5,037	39.1 %
Riverside County, California	2,266,899	868,743	133,798	10,236	134,734	64,361	1,055,027	58.8%
Cities and Designated Places								
Parker CCD, La Paz County, Arizona	20,348	12,396	49	2,513	140	213	5,037	39.1%
Buckeye CCD, Maricopa County, Arizona	64,761	34,542	3,427	1,237	979	1,112	23,464	46.7%

GEOGRAPHY	TOTAL POPULATION [a]	WHITE (NON-HISPANIC)	MINORITY POPULATION					
			BLACK OR AFRICAN-AMERICAN (NON-HISPANIC)	AMERICAN INDIAN AND ALASKA NATIVE (NON-HISPANIC)	ASIAN (NON-HISPANIC)	OTHER RACE CATEGORY (NON-HISPANIC) [b]	HISPANIC OR LATINO	% MINORITY
Blythe CCD, Riverside County, California	15,779	4,976	1,367	0	283	79	9,074	68.5%
Chuckwalla Valley CCD, Riverside County, California	9,056	2,109	1,764	157	165	354	4,507	76.7%
Brenda CDP, Arizona	416	402	0	0	0	0	14	3.4%
Ehrenberg CDP, Arizona	1,017	824	0	0	13	0	180	19.0%
La Paz Valley CDP, Arizona	644	601	0	16	0	0	27	6.7%
Quartzsite town, Arizona CDP	3,646	3,496	0	3	0	0	147	4.1%
Vicksburg CDP, Arizona	1,025	644	0	0	0	15	366	37.2%
Blythe City, California CDP	20,101	5,657	2,741	123	424	320	10,836	71.9%
Mesa Verde CDP, California	1,004	285	85	5	0	17	612	71.6%
Ripley CDP, California	659	33	6	0	0	0	620	95.0%

GEOGRAPHY	TOTAL POPULATION [a]	WHITE (NON-HISPANIC)	MINORITY POPULATION					
			BLACK OR AFRICAN-AMERICAN (NON-HISPANIC)	AMERICAN INDIAN AND ALASKA NATIVE (NON-HISPANIC)	ASIAN (NON-HISPANIC)	OTHER RACE CATEGORY (NON-HISPANIC) [b]	HISPANIC OR LATINO	% MINORITY
Block Group Data La Paz County, Arizona								
Block Group 3, Census Tract 201	1,266	923	0	0	0	0	343	27.1%
Block Group 1, Census Tract 205.01	1,218	831	0	0	0	15	372	31.8%
Block Group 2, Census Tract 205.01	703	621	0	0	10	0	72	11.7%
Block Group 1, Census Tract 205.02	1,360	1,230	0	0	0	0	130	9.6%
Block Group 2, Census Tract 205.02	1,257	1,214	0	16	0	0	27	3.4%
Block Group 3, Census Tract 205.02	1,673	1,653	0	3	0	0	17	1.2%
Block Group 1, Census Tract 206.02	633	440	0	0	13	0	180	30.5%
Block Group 2, Census Tract 206.02	703	647	0	0	10	0	46	8.0%
Block Group 2, Census Tract 9403	861	17	0	228	65	14	537	98.0%
Block Group 1, Census Tract 9800	0	0	0	0	0	0	0	N/A

GEOGRAPHY	TOTAL POPULATION [a]	WHITE (NON-HISPANIC)	MINORITY POPULATION					
			BLACK OR AFRICAN-AMERICAN (NON-HISPANIC)	AMERICAN INDIAN AND ALASKA NATIVE (NON-HISPANIC)	ASIAN (NON-HISPANIC)	OTHER RACE CATEGORY (NON-HISPANIC)[b]	HISPANIC OR LATINO	% MINORITY
Block Group Data, Maricopa County, Arizona								
Block Group 1, Census Tract 506.03	868	648	0	13	0	7	200	25.3%
Block Group 2, Census Tract 506.03	2,382	1,541	11	25	0	0	805	35.3%
Block Group 3, Census Tract 506.03	617	231	0	12	0	0	374	62.6%
Block Group Data, Riverside County, California								
Block Group 1, Census Tract 459	884	383	18	0	0	0	483	56.7%
Block Group 2, Census Tract 459	693	45	6	0	0	0	642	93.5%
Block Group 2, Census Tract 462	2,197	193	443	0	0	9	1,552	91.2%
Block Group 1, Census Tract 469	2,684	899	384	14	41	97	1,249	66.5%
Block Group 1, Census Tract 470	823	422	103	0	0	0	298	48.7%
Block Group 2, Census Tract 470	888	615	0	0	41	16	216	30.7%

Source: US Census Bureau ACS 5-year Estimates, 2010–2014: Table B03002

Notes: CCD = census county division, CDP = census designated place, EJ = environmental justice

[a] Total population figures will differ for minority and low-income population tables because some individuals are not counted within the income population.

[b] The "Other Race Category" includes non-Hispanic residents identified as Native Hawaiian and other Pacific Islander, some other race, or two or more races.

Table 3.10-2 Total Population and Percentage Living Below Poverty Level

GEOGRAPHY	TOTAL POPULATION (FOR POVERTY ESTIMATES)[a]	POPULATION BELOW POVERTY LEVEL (%)
Environmental Justice Comparison Area		
EJ Comparison Area (sum of the three counties)	6,148,443	17.0%
States		
Arizona	6,411,354	18.2%
California	37,323,127	16.4%
Counties		
La Paz County, Arizona	20,108	18.4%
Maricopa County, Arizona	3,895,963	17.1%
Riverside County, California	2,232,372	16.9%
Cities and Designated Places		
Parker CCD, La Paz County, Arizona	20,108	18.4%
Buckeye CCD, Maricopa County, Arizona	64,291	17.0%
Blythe CCD, Riverside County, California	15,510	24.3%
Chuckwalla Valley CCD, Riverside County, California	2,000	19.2%
Brenda CDP, Arizona	416	14.2%
Ehrenberg CDP, Arizona	1,017	18.4%
La Paz Valley CDP, Arizona	644	11.5%
Quartzsite town CDP, Arizona	3,643	9.6%
Vicksburg CDP, Arizona	1,025	14.6%
City of Blythe CDP, California	13,653	23.2%
Mesa Verde CDP, California	1,004	24.6%
Ripley CDP, California	659	33.7%
Maricopa County, Arizona		
Block Group 1, Census Tract 506.03	868	14.6%
Block Group 2, Census Tract 506.03	2,382	13.3%
Block Group 3, Census Tract 506.03	617	32.9%

GEOGRAPHY	TOTAL POPULATION (FOR POVERTY ESTIMATES)[a]	POPULATION BELOW POVERTY LEVEL (%)
La Paz County, Arizona		
Block Group 3, Census Tract 201	1,266	21.1%
Block Group 1, Census Tract 205.01	1,218	15.6%
Block Group 2, Census Tract 205.01	703	15.4%
Block Group 1, Census Tract 205.02	1,360	7.1%
Block Group 2, Census Tract 205.02	1,257	5.9%
Block Group 3, Census Tract 205.02	1,670	15.1%
Block Group 1, Census Tract 206.02	633	15.6%
Block Group 2, Census Tract 206.02	703	18.1%
Block Group 2, Census Tract 9403	861	16.5%
Block Group 1, Census Tract 9800	0	Not applicable
Riverside, California		
Block Group 1, Census Tract 459	884	13.9%
Block Group 2, Census Tract 459	693	33.3%
Block Group 2, Census Tract 462	2,152	39.6%
Block Group 1, Census Tract 469	1,852	20.1%
Block Group 1, Census Tract 470	823	12.0%
Block Group 2, Census Tract 470	888	28.9%

Source: US Census Bureau American Community Survey 5-year Estimates, 2010–2014: Table C17002
Notes: CCD = census county division, CDP = census designated place, EJ = environmental justice
[a] Total population figures will differ for minority and low-income population tables because some individuals are not counted within the income population data.

Table 3.10-3 Block Groups with Populations Greater than the Environmental Justice Comparison Area Minority and Low-income Population Percentages

BLOCK GROUP	PROPOSED SEGMENT IN BLOCK GROUP	ALTERNATIVE SEGMENT IN BLOCK GROUP	MINORITY POPULATION (%)	POPULATION BELOW POVERTY LEVEL (%)
Maricopa County, Arizona				
Block Group 3, Census Tract 506.03	None	None	62.6	32.9
La Paz County, Arizona				
Block Group 3, Census Tract 201	p-01 to p-06	d-01, x-01 to x-04, i-01 to i-05	27.1	21.1
Block Group 2, Census Tract 206.02	p-10 to p-15c	x-08, i-06, i-07, i-08s, cb-01 to cb-6, cb-10	8.0	18.1
Block Group 2, Census Tract 9403	None	i-06, cb-03	98.0	16.5
Riverside County, California				
Block Group 1, Census Tract 459	None	x-12, x-13, x-15, x-16, ca-01, ca-02, ca-05	56.7	13.9
Block Group 2, Census Tract 459	p-15w, p-16	x-13	93.5	33.3
Block Group 2, Census Tract 462	None	ca-05	91.2	39.6
Block Group 1, Census Tract 469	p-17, p-18	x-15, x-16, x-19, ca-07, ca-09	66.5	20.1
Block Group 2, Census Tract 470	None	None	30.7	28.9

Source: 2014 American Community Survey, 5-year Estimates, Tables B03002 and C17002

Note: Shading indicates the population meets the criteria of an EJ population. Block groups with EJ populations are identified as those with minority populations greater than 49.3 percent or low-income populations greater than 17 percent.

3.11 VISUAL RESOURCES

Table 3.11-1 KOPS, Segments, and Applicable Planning Area(s) by Zone

KOP	KOP NAME	SEGMENTS VIEWED	APPLICABLE PLANNING AREA(S)
EAST PLAINS AND KOFA ZONE			
1	Saddle Mountain Trailhead	p-01, d-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
2	Salome Road South	p-01, d-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
3	I-10 Crossing East	p-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
5	Private Residence	d-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
6	Salome Road North	p-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
7	Snowbird West RV Park	p-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
8	I-10 Crossing West	p-01, p-02, p-03, i-01, x-01, x-02	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
9	Eagletail Mountains (Courthouse Rock)	d-01	Maricopa County, La Paz County, Tonopah/Arlington Area Plan
10	Palomas – Harquahala Road	p-04, p-05, x-03	La Paz County
11	Intersection of AT&T and Connector Road	x-03, i-02	La Paz County
12	Hovatter Road	x-04	La Paz County
59	I-10 West Crossing Eastbound	i-01, i-02, i-03, x-03, x-01, p-02, p-03, p-04	La Paz County
60	I-10 Eastbound On-ramp at Hovatter Road	i-03, i-04, x-04, in-01	La Paz County
62	I-10 Westbound South of Brenda	Alt SCS	La Paz County
63	I-10 Eastbound South of Brenda	Alt SCS	La Paz County
QUARTZSITE ZONE			
13	Kofa Wayside/Vicksburg Road	p-06	La Paz County
14	Kofa #1	p-06	La Paz County
15a	Kofa #2 – Wilbanks Road	p-06	La Paz County
15b	Kofa East Pinch Point	p-06	La Paz County
16	Kofa #3	p-06	La Paz County

KOP	KOP NAME	SEGMENTS VIEWED	APPLICABLE PLANNING AREA(S)
17	I-10 Rest Area East	i-03, x-04	La Paz County
18	I-10 Westbound	i-03, x-04	La Paz County
19	Brenda RV Park	i-04, in-01	La Paz County
20	Gold Nugget Road	i-04, in-01	La Paz County
21	Mitchell Mine Road Residence	x-05	La Paz County
22	BLM Long Term Visitor Area (LTVA) #1	x-06, x-05	La Paz County, Town of Quartzsite
23	BLM LTVA #2	x-06, x-05, x-07	La Paz County, Town of Quartzsite
24	RV Park Quartzsite	qs-01	Town of Quartzsite
26	Quartzsite Civic Event Parcel	qs-02	La Paz County, Town of Quartzsite
27	Boyer Road – Quartzsite North Side	qn-02	La Paz County, Town of Quartzsite
28	Highway 95 LTVA	x-07	La Paz County, Town of Quartzsite
29	Highway 95 Crossing	x-06, x-05, p-07, p-08, p-09	La Paz County, Town of Quartzsite
61	I-10 Eastbound West of Quartzsite	Qs-01, qs-02, i-06, qn-02, x-07	La Paz County, Town of Quartzsite
COPPER BOTTOM ZONE			
30	Copper Bottom Pass Road #1	p-09, p-10	La Paz County
32	Copper Canyon	p-10	La Paz County
33	Johnson Canyon	cb-02	La Paz County
34	Copper Bottom Alternatives Intersection	cb-01, cb-02, cb-04	La Paz County
35	Copper Bottom Pass Road #2	p-11, cb-03	La Paz County
36	Dome Rock Mountains	cb-04, cb-06	La Paz County
37	Ehrenberg-Cibola Road	p-13, cb-05	La Paz County
38	Ehrenberg Wash	p-12, cb-06, cb-05	La Paz County
39	I-10 Hilltop	i-06	La Paz County
40	I-10 Rest Area West	i-07, p-13	La Paz County
COLORADO RIVER AND CALIFORNIA ZONE			
41	Colorado River Crossing	i-08s, ca-04	N/A
42	Colorado River Corridor	x-10, x-11	La Paz County, Palo Verde Valley Area Plan, City of Blythe, Colorado River Corridor Plan

KOP	KOP NAME	SEGMENTS VIEWED	APPLICABLE PLANNING AREA(S)
43	Riviera Drive, West Side of Colorado River	x-10, ca-01	La Paz County, Palo Verde Valley Area Plan, City of Blythe, Colorado River Corridor Plan
44	Oxbow Road Colorado River Crossing	cb-10, x-11, p-15e/w	La Paz County, Riverside County, Palo Verde Valley Area Plan
45	McIntyre County Park	p-15e/w	La Paz County, Riverside County, Palo Verde Valley Area Plan
46	Confidential		
47	Appleby Elementary School	ca-05, ca-01	Riverside County, Palo Verde Valley Area Plan, City of Blythe
48	Miller Park	ca-05, ca-01	Riverside County, Palo Verde Valley Area Plan, City of Blythe
49	Intersection of Seeley and Lovekin	ca-05, ca-06, ca-01, p-15	Riverside County, Palo Verde Valley Area Plan, City of Blythe
50	18th Avenue Houses	p-15w, ca-01, ca-05	Riverside County, Palo Verde Valley Area Plan
51	Lovekin Private Residence	p-15w, ca-01	Riverside County, Palo Verde Valley Area Plan, City of Blythe
52	Intersection of I-10 and Neighbours Boulevard	ca-05, ca-06, ca-01, p-15, p-16	Riverside County, Palo Verde Valley Area Plan
53	Ripley	p-15, p-16, x-12, x-13	Riverside County, Palo Verde Valley Area Plan
54	Mesa Verde Community	ca-07	Riverside County, Palo Verde Valley Area Plan
55	I-10 Communication Site	ca-09, p-17	Riverside County, Palo Verde Valley Area Plan
56	I-10 North of Colorado River Substation	ca-09, p-18	La Paz County, Riverside County, Palo Verde Valley Area Plan
57	Confidential		

Notes: I-10 = Interstate 10, KOP = key observation point, LTVA = long-term visitor area, RV = recreational vehicle

Table 3.11-2 Segment Summary for the East Plains and Kofa Zone

SEGMENT	SCENIC QUALITY	SENSITIVITY	DISTANCE ZONE	VRI CLASS	VRM CLASS
PROPOSED ACTION					
p-01	B	Moderate, Low, and High	Foreground-middleground	II / IV	III
p-02	N/A	N/A	N/A	N/A	N/A
p-03	C	Moderate	Foreground-middleground	IV	III
p-04	C	Moderate and High	Foreground-middleground	III, IV	III
p-05	A	High and Low	Foreground-middleground	II, III	III
p-06	C	Low	Foreground-middleground	III, IV	III
ALTERNATIVE SEGMENTS					
d-01	C	Moderate	Foreground-middleground	IV / IV	III
i-01	C	Moderate	Foreground-middleground	IV	III
i-02	C	Moderate	Foreground-middleground	IV	III
i-03	C & B	Moderate	Foreground-middleground	III, IV	III
i-04	B & C	High	Foreground-middleground, Seldom seen	II, III	III
in-01	C & B	High	Foreground-middleground	II, III	III
x-01	C	Moderate	Foreground-middleground	IV	II & III
x-02	C	Moderate	Foreground-middleground	IV	II & III
x-03	C	Moderate and High	Foreground-middleground	III, IV	III
x-04	C	Moderate and Low	Foreground-middleground	IV	III

Segment d-01 falls within the Yuma planning area and the Lower Sonoran planning area. Values for VRI and VRM classes are presented as follows: "Yuma class / Lower Sonoran class." Scenic quality and visual sensitivity values were only available for the Yuma planning area.

Scenic Quality categories: A = High, B = Medium, C = Low

VRI classes: I = areas where the current management situation requires maintaining a natural environment essentially unaltered by man, II/III/IV = based on combinations of scenic quality, sensitivity levels, and distance zones.

VRM classes: I = Objective is to preserve the existing character of the landscape. Provides for natural ecological changes; but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

II = Objective is to retain the existing character of the landscape. Level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Changes must repeat the basic elements found in the predominant natural features of the characteristic landscape.
III = Objective is to partially retain existing character of the landscape. Level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV = Objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. Any action necessary to prevent unnecessary and undue degradation to the land is to be taken, such as, but not limited to, careful location, minimal disturbance, and repeating the basic elements.
Notes: If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first
N/A indicates that the segment does not lie on BLM land or that a value was not applied to that segment by the BLM.

Table 3.11-3 Segment Summary for the Quartzsite Zone

SEGMENT	SCENIC QUALITY	SENSITIVITY	DISTANCE ZONE	VRI CLASS	VRM CLASS
PROPOSED ACTION					
p-07	C	High	Foreground-middleground	III	III
p-08	C	High	Foreground-middleground	III	III
ALTERNATIVE SEGMENTS					
i-05	C	High	Foreground-middleground	III	III
qn-01	C	High	Foreground-middleground	III	III
qn-02	C and B	High	Foreground-middleground	III & II	III & IV
qs-01	C	High	Foreground-middleground	III	III
qs-02	B and C	High	Foreground-middleground	II & III	III & IV
x-05	C and B	High	Foreground-middleground	III	III & II
x-06	C	High	Foreground-middleground	III	III, IV, & II
x-07	C	High	Foreground-middleground	III	III

Scenic Quality categories: A = High, B = Medium, C = Low

VRI classes: I = areas where the current management situation requires maintaining a natural environment essentially unaltered by man, II/III/IV = based on combinations of scenic quality, sensitivity levels, and distance zones.

VRM classes: I = Objective is to preserve the existing character of the landscape. Provides for natural ecological changes; but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

II = Objective is to retain the existing character of the landscape. Level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Changes must repeat the basic elements found in the predominant natural features of the characteristic landscape.

III = Objective is to partially retain existing character of the landscape. Level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

IV = Objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. Any action necessary to prevent unnecessary and undue degradation to the land is to be taken, such as, but not limited to, careful location, minimal disturbance, and repeating the basic elements.

Notes: If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first.

N/A indicates that the segment does not lie on BLM land or that a value was not applied to that segment by the BLM.

Table 3.11-4 Segment Summary for the Copper Bottom Zone

SEGMENT	SCENIC QUALITY	SENSITIVITY	DISTANCE ZONE	VRI CLASS	VRM CLASS
PROPOSED ACTION					
p-09	C & B	High	Foreground-middleground	II, III	III
p-10	B	High	Foreground-middleground	II	III
p-11	B	High	Foreground-middleground and Seldom Seen	II, III	III
p-12	C & B	Moderate and High	Foreground-middleground and Seldom Seen	II, III, IV	III
p-13	C	Moderate	Foreground-middleground and Seldom Seen	IV	III
p-14	C	Moderate	Foreground-middleground and Seldom Seen,	IV	III
ALTERNATIVE SEGMENTS					
cb-01	B	High	Foreground-middleground	II	II, III
cb-02	B	High	Foreground-middleground and Seldom Seen	II, III	II, III
cb-03	B	High	Foreground-middleground and Seldom Seen,	II	III
cb-04	B	High and Moderate	Foreground-middleground and Seldom Seen,	II, III, IV	II & III
cb-05	B & C	Moderate	Foreground-middleground and Seldom Seen,	III, IV	II & III
cb-06	C & B	Moderate	Foreground-middleground,	IV	III

SEGMENT	SCENIC QUALITY	SENSITIVITY	DISTANCE ZONE	VRI CLASS	VRM CLASS
i-06	B & C	High	Foreground-middleground,	II, III	III
i-07	N/A	N/A	N/A	IV	N/A
x-08	N/A	N/A	N/A	IV	N/A

Scenic Quality categories: A = High, B = Medium, C = Low

VRI classes: I = areas where the current management situation requires maintaining a natural environment essentially unaltered by man, II/III/IV = based on combinations of scenic quality, sensitivity levels, and distance zones.

VRM classes: I = Objective is to preserve the existing character of the landscape. Provides for natural ecological changes; but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

II = Objective is to retain the existing character of the landscape. Level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Changes must repeat the basic elements found in the predominant natural features of the characteristic landscape.

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IV = Objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. Any action necessary to prevent unnecessary and undue degradation to the land is to be taken, such as, but not limited to, careful location, minimal disturbance, and repeating the basic elements.

Notes: If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first.

N/A indicates that the segment does not lie on BLM land or that a value was not applied to that segment by the BLM.

Table 3.11-5 Segment Summary for the Colorado River and California Zone

SEGMENT	SCENIC QUALITY	SENSITIVITY	DISTANCE ZONE	VRI CLASS	VRM CLASS
PROPOSED ACTION					
p-15e	C and A	Moderate & High	Foreground-middleground	II, IV	III
p-15w	N/A	N/A	N/A	III	N/A
p-16	B	High	N/A	II	N/A
p-17	B	High	Foreground-middleground	II	III, IV
p-18	B	High	Foreground-middleground	II	IV
ALTERNATIVE SEGMENTS					
ca-01	N/A	N/A	N/A	III	N/A
ca-02	B	High	Foreground-middleground	II	IV
ca-04	N/A	N/A	N/A	II, III	N/A
ca-05	N/A	N/A	N/A	III	N/A
ca-06	B	High	Foreground-middleground	II	IV
ca-07	B	High	Foreground-middleground	II	IV
ca-09	B	High	Foreground-middleground	II	IV
cb-10	B	High	Foreground-middleground	II, IV	III
i-08s	N/A	N/A	N/A	II, III, IV	N/A
x-09	N/A	N/A	N/A	III	N/A
x-10	N/A	N/A	N/A	III	N/A
x-11	N/A	N/A	N/A	II, III	N/A
x-12	N/A	N/A	N/A	N/A	N/A
x-13	N/A	N/A	N/A	N/A	N/A
x-15	B	High	Foreground-middleground	II	IV
x-16	B	High	Foreground-middleground	II	IV
x-19	B	High	Foreground-middleground	II	IV

Scenic Quality categories: A = High, B = Medium, C = Low

VRI classes: I = areas where the current management situation requires maintaining a natural environment essentially unaltered by man, II/III/IV = based on combinations of scenic quality, sensitivity levels, and distance zones.

VRM classes: I = Objective is to preserve the existing character of the landscape. Provides for natural ecological changes; but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

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IV = Objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. Any action necessary to prevent unnecessary and undue degradation to the land is to be taken, such as, but not limited to, careful location, minimal disturbance, and repeating the basic elements.
Notes: If more than one value applies to a segment, the highest or most conservative value was applied.
N/A indicates that the segment does not lie on BLM land or that a value was not applied to that segment by the BLM.

3.12 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE PROJECTS

Table 3.12-1 BLM Authorized and Other Known Projects

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
1 All zones	Devers-Palo Verde No. 1 and 2 Transmission Project	Maricopa, La Paz, and Riverside	active	transmission line	Facility Owner/Developer: Southern California Edison Acreage/Mileage and Land Ownership: approximately 230 miles through BLM, USFWS, state trust, and private lands Technology Type: two parallel 500kV transmission lines Expansion Construction Schedule and/or Permitting Milestones: n/a General Overview: two parallel existing 500kV transmission lines extending from the Palo Verde Nuclear Generating Station and Harquahala Generating Station in Maricopa County, Arizona to the Devers Substation in Riverside County, California; No. 1 was completed in 1982 and No. 2 was completed in 2013.	X	X	X
2 EP&K zone	Harquahala Power Plant	Maricopa	active	power plant	Facility Owner/Developer: Talen Energy Corporation Acreage/Mileage and Land Ownership: approximately 120 acres of private lands Technology Type: three-unit 1,092 MW combined cycle, natural gas–fired plant General Overview: three-unit 1,092 MW combined cycle, natural gas–fired plant built in 2004 and purchased from Mach Gen LLC by Talen Energy Corp. in 2015.	X	X	X
28 EP&K zone	Red hawk	Maricopa	active	power plant	Facility Owner/Developer: Arizona Public Service Co. Technology Type: 1,140 MW combined cycle, natural gas–fired plant			X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
29 EP&K zone	Mesquite Generating Station Block 2	Maricopa	active	power plant	Facility Owner/Developer: CAMS Technology Type: 692 MW combined cycle, natural gas–fired plant			X
30 EP&K zone	Arlington Valley Energy Facility	Maricopa	active	power plant	Facility Owner/Developer: Arlington Valley LLC Technology Type: 580 MW combined cycle, natural gas–fired plant			X
31 EP&K zone	Palo Verde	Maricopa	active	power plant	Facility Owner/Developer: APS Technology Type: 3,937 MW nuclear plant			X
QTZ zone	WAPA	Yuma and La Paz	active	transmission line	Technology type: 161-kV transmission line General Overview: transmission line originating at the Parker Dam hydroelectric facility heading south past Quartzsite to the Kofa substation on the YPG.	X	X	X
4 All zones	El Paso Natural Gas Pipeline System	Maricopa and La Paz	active	interstate natural gas pipeline	Facility Owner/Developer: Kinder Morgan, Inc. Acreage and Land Ownership: 10,200 miles on unknown land Technology Type: 5.65 billion cubic feet per day capacity natural gas pipeline General Overview: approximately 10,200-mile El Paso Natural Gas Pipeline System transports natural gas from the San Juan, Permian and Anadarko basins to California, Arizona, Nevada, New Mexico, Oklahoma, Texas, and northern Mexico.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
7 EP&K zone	Sonoran Pronghorn 10-J Release	La Paz	active	wildlife reintroduction program	Facility Owner/Developer: USFWS Acreage and Land Ownership: 0.5 square-mile (320 acres) captive breeding pen in King Valley of the USFWS Kofa NWR General Overview: this final rule sets in motion the reintroduction of Sonoran pronghorns to establish up to two new populations as envisioned by the recovery plan; the final rule includes provisions to construct a captive breeding and release facility in King Valley on the Kofa NWR in La Paz County, Arizona.	X	X	X
32 EP&K zone	Plomosa Mine Quarry	La Paz	active	mine	Facility Owner/Developer: Pioneer Landscaping Materials Acreage and Land Ownership: 28.7 acres of BLM-administered lands Technology Type: open pit mining via drilling and blasting. General Overview: Mined materials (quartz-based decorative rock) are crushed, screened, and stockpiled. Approximately 5 to 10, 25-ton truck loads of crushed rock per day transported off site (125-250 tons per day). On rare occasions, up to 30 trucks may be transporting material off site.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
12 CB zone	Ehrenberg Wash Pit Expansion	La Paz	active	mine	Facility Owner/Developer: Mineral Aggregate Recycling Services, Inc. Acreage and Land Ownership: expansion of the existing BLM owned 40-acre open pit by 20 acres Technology Type: competitive sale of rock product from open pit mine General Overview: wash plant is currently operational. (C. Scott, Mineral Aggregate Recycling Services, Inc., personal communication August 31, 2016); the project can produce up to 30,000 tons of rock product per year for the duration of ten years; approximately five to ten 25-ton truck loads of rock product can be shipped per day, and up to 30 deliveries per day during peak demand.	X	X	X
13 CR&CA zone	Venable Solar 1	Riverside	active	solar facility	Facility Owner/Developer: Venable Solar LLC Technology Type: 1.5 MW solar photovoltaic facility General Overview: solar photovoltaic project near Blythe, south of I-10 near US 95; Commercial Operations Date: 4/13/2015.	X	X	X
14 CR&CA zone	Venable Solar 2	Riverside	active	solar facility	Facility Owner/Developer: Venable Solar LLC Technology Type: 1.5 MW solar photovoltaic facility General Overview: solar photovoltaic project near Blythe, south of I-10 near US 95; Commercial Operations Date: 4/14/2015.	X	X	X
15 CR&CA zone	Sempra – Southern California Gas Co. Gas Pipeline	Riverside	active	natural gas pipeline	Facility Owner/Developer: Sempra Energy Utility - Southern California Gas Co.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
16 CR&CA zone	North Baja Pipeline	Riverside	active	interstate natural gas pipeline	Facility Owner/Developer: TransCanada - North Baja Pipelines LLC Acreage and Land Ownership: 86 miles in US Technology Type: 500-600 million cubic feet per day natural gas pipeline General Overview: The North Baja Pipeline system consists of 86 miles of pipeline receiving natural gas from an interconnection with the El Paso Natural Gas Pipeline at Ehrenberg, Arizona, that sources natural gas primarily from the West Texas and Southern Rocky Mountain supply regions. North Baja has a design capacity of 500 million cubic feet per day for southbound transportation and 600 million cubic feet per day for northbound transportation. Given the bidirectional capability modifications completed in 2008, North Baja is also able to transport natural gas northbound at Ogilby, California, and receive natural gas sourced from the Energia Costa Azul liquefied natural gas terminal in Mexico.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
17 CR&CA zone	Blythe Energy Center	Riverside	active	power plant	Facility Owner/Developer: AltaGas Acreage and Land Ownership: privately-held 76-acre site Technology type: 507 MW combined cycle, natural gas-fired plant General Overview: The Blythe Energy Center was acquired by AltaGas in 2014 and is a 507 MW natural gas-fired combined cycle power plant in Blythe, California. The facility is secured by a 7-year power purchase agreement (PPA) with Southern California Edison, is directly connected to Southern California Gas, and interconnects to the power grid via a 67-mile transmission line.	X	X	X
34 CR&CA	Palo Verde College solar facility	Riverside	active	Solar facility	Facility Owner/Developer: SSA Solar of CA 2 LLC Technology Type: 1.2 MW photovoltaic	X	X	X
CR&CA	Blythe to Headgate Rock	Riverside and La Paz	active	transmission line	Facility Owner/Developer: WAPA Technology type: 161 kV transmission line General Overview: transmission line originating at the Headgate Rock hydroelectric power plant on CRIT lands. Heads south into Blythe.	X	X	X
EP&K	Harquahala to Hassayampa	Maricopa	active	transmission line	Facility Owner/Developer: APS Technology type: 500 kV transmission line General Overview: transmission line originating from the Harquahala Generating Project heading southeast to the Hassayampa substation near the Mesquite Generating Station.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
CR&CA	Gold Mine to Blythe	Riverside	active	transmission line	Facility Owner/Developer: Imperial Irrigation District Technology type: 161 kV transmission line General Overview: transmission line originating at the Gold Mine heading to Blythe	X	X	X
CR&CA	Niland to Blythe	Riverside	active	transmission line	Facility Owner/Developer: AZUSA Light & Power Technology type: 161 kV transmission line General Overview: transmission line originating at the Niland Gas Turbine Plant heading northeast to Blythe.	X	X	X
CR&CA	Julian Hinds to Buck	Riverside	active	transmission line	Facility Owner/Developer: AZUSA Light & Power Technology type: 230 kV transmission line General Overview: transmission line originating from the Blythe Energy natural gas power plant. Continues west south of I-10 then crosses north into the Eagle Mountains.	X	X	X
CR&CA	Blythe to Eagle Mountain Transmission Line	Riverside	active	Transmission line	Facility Owner/Developer: Southern California Edison Technology type: 161 kV transmission line General Overview: transmission line originating from Blythe and continues west south of I-10 then crosses north into the Eagle Mountains.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
20 CR&CA	Blythe Solar Power Project	Riverside	active	solar facility	Facility Owner/Developer: NextEra Energy Resources, LLC - NextEra Blythe Solar Acreage and Land Ownership: 4,138 BLM acres (BLM Right-of-Way Grant No. CACA–048811) Technology Type: 4 unit 485 MW solar photovoltaic facility Expansion Construction Schedule and/or Permitting Milestones: The construction of Units 3 and 4 is currently on hold General Overview: A Next Era Energy Resources, LLC, 485 MW solar project on 4,138 acres 2 miles north of I-10 and 8 miles west of Blythe in unincorporated Riverside County, California. The modified Blythe Solar Power Project was approved on August 1, 2014. NextEra Blythe Solar Energy Center, LLC (the current Project applicant), has proposed conversion of the previously approved project from thermal solar to photovoltaic solar technology. A 230kV generation tie-line will connect the solar energy generating facility with the Colorado River Substation, located 5 miles to the southwest. Units 1 and 2 are now operational (CEC 2017).		X	X
21 CR&CA zone	Blythe Solar Generating Facility	Riverside	active	solar facility	Facility Owner/Developer: NRG Energy, Inc. Technology Type: 21 MW solar photovoltaic facility General Overview: NRG Energy, Inc., through NRG Renew started commercial operation in December 2009 for the Blythe Solar Generating Facility, a 21 MW solar photovoltaic solar facility in Blythe, California. Project completed in 2009.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
23 CR&CA zone	McCoy Solar Energy Project	Riverside	active	solar facility	Facility Owner/Developer: NextEra Energy Resources, LLC - McCoy Solar, LLC Acreage and Land Ownership: 7,700 acres of BLM-administered land and 470 acres of private land Technology Type: 750 MW solar photovoltaic facility General Overview: A 750 MW photovoltaic solar project on 7,700 acres of BLM-administered land and 470 acres of private land 13 miles northwest of Blythe proposed by McCoy Solar, LLC, a subsidiary of Next Era Energy Resources. The project connects with the Colorado River Substation. The project is complete (G. Kline, BLM, personal communication September 19, 2016).			X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
25 CR&CA zone	Genesis Solar Energy Project	Riverside	active	solar facility	Facility Owner/Developer: NextEra Energy Resources, LLC - Genesis Solar, LLC Acreage and Land Ownership: unknown acreage of BLM-administered land Technology Type: 2-unit concentrated solar electric generating facility General Overview: The Genesis Solar Energy Project is operated by Genesis Solar, LLC, a subsidiary of NextEra Energy Resources, LLC. The project is a concentrated solar electric generating facility located in Riverside County, California. The project consists of two independent solar electric generating facilities with a nominal net electrical output of 125 MW each, for a total net electrical output of 250 MW. The project is located approximately 25 miles west of Blythe, California, on lands managed by the BLM. Construction was completed in April 2014. The facility is in full operation. (BLM Palm Springs-South Coast Field Office 2016).		X	X
ASLD Various Parcels EP&K, QTZ, and CB zones	Grazing Leases	Mariposa and La Paz	current	Grazing Leases	Facility Owner/Developer: ASLD Acreage and Land Ownership: 43 leases of various acreage; parcels on state trust lands General Overview: 43 grazing leases along the project route on lands administered by the ASLD.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
Yuma Proving Grounds CB zone	YPG	Yuma and La Paz	active	military installation	Facility Owner/Developer: US DOD - US Army Acreage and Land Ownership: 1,307.8 square miles of DOD land Technology Type: military testing site General Overview: The primary mission of the YPG is to ensure that the weapon systems and equipment issued to soldiers function safely and as intended. However, the land is not entirely restricted to these uses. In coordination with the AGFD, the YPG administers hunting in certain parts of the installation.	X	X	X
continuous along the Colorado River CR&CA zone	Colorado River Bankline Repairs	La Paz and Riverside	as needed basis	maintenance activity	Facility Owner/Developer: Reclamation Acreage and Land Ownership: unknown; continuous along the Colorado River Technology Type: n/a; maintenance activity General Overview: Under the Colorado River Front Work and Levee System Act of 1946 (as amended) Reclamation has responsibility along the lower Colorado River for flood control. The Act authorizes Reclamation to improve, stabilize, and maintain the river channel so that it can handle flows resulting from flood control operations and floods of local origin. In the Palo Verde Division (Blythe CA area), the following activities are continuous along the river: reinforcing bankline and levees by placing riprap material, removing (sediment) wash fans, maintaining river access roads, and conducting excavation activities to remove excess sediment along the river in critical areas in order to protect Reclamation facilities.	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
continuous along the Colorado River CR&CA zone	Palo Verde Backwaters Maintenance Activities	La Paz and Riverside	as needed basis	maintenance activity	Facility Owner/Developer: Reclamation Acreage and Land Ownership: unknown; continuous along the Colorado River Technology Type: n/a; maintenance activity General Overview: Reclamation monitors various backwaters along the lower Colorado River (Blythe CA area) located south of I-10, to address concerns related to the management of the backwaters and maintenance requirements. All work is conducted with previously impacted areas (i.e. replacing culverts and cleaning out the inlets and outlets of the backwaters).	X	X	X
27 EP&K	Catchment #726 Replacement	La Paz	active	Wildlife improvement	Facility Owner/Developer: AGFD Acreage and Land Ownership: BLM, Yuma FO General Overview: AGFD Region IV proposes to replace the #726 wildlife water above ground system with a new water system at the same location within the Eagletail Mountain Wilderness. This water is a grandfathered structure that predates the Eagletail Mountain Wilderness designation that occurred on November 29, 1990. It is also an important source of water for desert bighorn sheep in the Eagletail Mountains (Game Management Unit 41), as well as other game and nongame species. Currently, this water development is a rain apron and steel storage tank system. It uses slick rock as an apron to capture water.		X	X

EP&K – East Plains and Kofa; QTZ – Quartzsite; CB – Copper Bottom; CR&CA – Colorado River and California

Table 3.12-2 Reasonably Foreseeable Future Projects

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
3 EP&K zone	Harquahala Solar Project	Maricopa	future	solar facility	Acreage and Land Ownership: approximately 3,514 acres of unknown land ownership Construction Schedule and/or Permitting Milestones: currently completely amended to change land use (Rural Development to Industrial); land is under contract.	unknown at this stage		X	X
5 EP&K zone	La Paz County land conveyance for solar develop-ment	La Paz	future	solar facility	Facility Owner/Developer: La Paz County, Arizona Acreage and Land Ownership: 5,935 acres of BLM-administered land General Overview: Sale of Federal land to La Paz County to provide enough land to pursue utility-scale solar energy production with private developers.	Bill H.R. 2630 introduced to House May 24, 2017; presented to the Senate January 9, 2019; no construction date set	X	X	X
6 EP&K zone	Fancher-Luxcor Mine	Yuma	existing/ future	mine	Construction Schedule and/or Permitting Milestones: pending on funding General Overview: Gold mine with access via Hovatter Road, south of the Proposed Action route; a revised plan of operations is approved but the project is pending funding. (F. Bergwall, BLM, personal communication September 20, 2016; BLM 2016s).	pending funding			X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
8 QTZ zone	Plomosa 9 Placer Claim	La Paz	future	mine	General Overview: Potential project would be located on a 20-acre mining claim within La Paz County in the Plomosa Mountains just southeast of Quartzsite and in proximity to Alternative Segments. The claim is owned by Jackpot Minerals LLC and overseen by the BLM's YFO under the serial number AMC396777. Status is pending as they have an incomplete application. (F. Bergwall, BLM, personal communication September 20, 2016).	unknown at this stage	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
9 QTZ zone	Quartzsite Solar Energy Project	La Paz	future; pending on securing a PPA	solar facility	Facility Owner/Developer: Quartzsite Solar Energy, LLC Acreage and Land Ownership: 1,675 acres of BLM-administered land Technology Type: 100 MW concentrating solar power plant Construction Schedule and/or Permitting Milestones: pending on securing a PPA General Overview: 100 MW solar tower technology developed by Quartzsite Solar Energy on 1,675 acres of BLM-administered land located approximately 10 miles north of Quartzsite, near Arizona SR 95; currently focused on securing a PPA and lacking that makes it challenging to say exactly when they would commence construction (A. Wang, SolarReserve, personal communication August 25, 2016); from BLM's perspective, construction would start at least 2 years after PPA. (E. Arreola, BLM, personal communication August 25, 2016).	Construction start date is unknown and pending on securing a PPA			X
10					Canceled				

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
11 CB zone	West Port Gold Project	La Paz	future	mine	Facility Owner/Developer: ITEC Solutions Acreage and Land Ownership: 40 acres of BLM-administered land Technology Type: open-pit mine Construction Schedule and/or Permitting Milestones: construction schedule is not publicly available, but could start at any time as environmental permits have been acquired General Overview: The project includes the development of a 500 ton per day aboveground, open pit operation that would produce between 5,000 and 10,000 ounces of gold per year for 10 to 15 years. The mine is located approximately 1 mile north of I-10 about 6 miles west of Quartzsite. (F. Bergwall, BLM, personal communication September 19, 2016).	Use and occupancy decision signed February 23, 2017	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
18 CR&CA zone	Blythe Energy Power Plant and Sonoran Energy Project (Licensed as Blythe Energy Project Phase II)	Riverside	future	power plant	Facility Owner/Developer: AltaGas Sonoran Energy Inc. Acreage and Land Ownership: 76 acres of BLM-administered land Technology Type: 569 MW combined cycle, natural gas-fired plant Construction Schedule and/or Permitting Milestones: 2nd or 3rd quarter of 2018 General Overview: the Blythe Energy Project Phase II is a 569-megawatt combined-cycle project that was certified by the Energy Commission in December 2005, but has not been built yet; the Blythe II facility will be located approximately 5 miles west of the city of Blythe on approximately 76 acres immediately adjacent to the operational Blythe Energy Project.	The estimated start of construction date was June 14, 2018	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
19 CR&CA zone	Blythe Mesa Solar Project	Riverside	future	solar facility	Facility Owner/Developer: Renewable Resources Group Acreage and Land Ownership: 7,025 acres of BLM-administered land Technology Type: solar 485 MW photovoltaic facility General Overview: a proposed Renewable Resources Group 485 MW solar project on 3,587 acres near the Blythe airport. The project is located both north and south of I-10, spanning private agricultural land in both an unincorporated area of Riverside County, California, and a portion within the boundary of the city of Blythe, California; on August 18, 2015, the BLM issued a ROD approving issuance of a ROW grant in support of the Blythe Mesa Solar Project, owned by the Renewable Energy Group, Los Angeles, California. (BLM Palm Springs-South Coast Field Office 2016).	unknown; construction has not yet started	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
22 CR&CA zone	Desert Quartzite Solar	Riverside	future	solar facility	Facility Owner/Developer: First Solar Inc. - Desert Quartzite LLC Acreage and Land Ownership: 4,800 acres of unknown land ownership Technology Type: 300MW solar photovoltaic facility Construction Schedule and/or Permitting Milestones: construction expected once approvals and permits are obtained General Overview: a 300 MW solar photovoltaic project located on 4,900 acres south of I-10 and 8 miles southwest of Blythe proposed by Desert Quartzite LLC, a subsidiary of First Solar Inc; the project would interconnect at the Colorado River Substation.	construction expected once approvals and permits are obtained	X	X	X

MAP ID # (FIG. 3.12-1) / ZONE	NAME	COUNTY	PROJECT STATUS	TYPE	DESCRIPTION	CONSTRUCTION SCHEDULE	2-MILE CEA	5-MILE CEA	AQ OR SOCIO CEA
24 CR&CA zone	Crimson Solar	Riverside	future	solar facility	Facility Owner/Developer: Recurrent Energy LLC - Sonoran West Holdings LLC Acreage and Land Ownership: 2,700 acres of BLM-administered land Technology Type: 350MW solar photovoltaic and energy storage facility General Overview: Proposal to construct and operate the RE Crimson Solar Project, a 350 MW solar photovoltaic and energy storage project that would be located on 2,700 acres of BLM administered land within the CDCA planning area; located in unincorporated eastern Riverside County, about 13 miles west of Blythe, just north of the Mule Mountains and south of I-10. Up to four substations that would transform voltage from the 34.5 kV electrical collection cables to 230 kV. The 350 MW of energy storage would be either flywheel or battery form.	NOI published March 9, 2018	X	X	X
33 QTZ zone	Quartzsite Waste Water Treatment Plant Renovations	Yuma	future	Infra-structure	Facility Owner/Developer: Quartzsite Acreage: 16.7 acres General Overview: Expansion of existing WWTP from 450,000 gpd to 900,000 gpd. Convert existing sequencing batch reactor (SBR) to two SBRs, add aeration and turbine blower building, new sludge drying beds, new headworks, and electrical efficiency upgrades	Unknown; in the planning, design, and funding stages	X	X	X

EP&K – East Plains and Kofa; QTZ – Quartzsite; CB – Copper Bottom; CR&CA – Colorado River and California

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Appendix 4 Tabular and Other Data Associated with Chapter 4

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List of Tables

4.1 INTRODUCTION

See Chapter 4.

4.2 NON-KEY RESOURCES

4.2.1 Air Quality and Climate Change

Table 4.2-1 Proposed Action Cumulative Emissions

ACTIVITY	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	NO_X (TPY)	CO (TPY)	VOC (TPY)	SO_2 (TPY)
Proposed Action	35.0	6.6	71.8	26.3	6.3	0.2
Maricopa County	98,106	20,052	63,023	449,787	269,005	1,111
La Paz County	6,104	1,154	3,765	35,350	115,111	16
Riverside County	18,812	5,324	30,969	136,625	154,570	467
Blythe Area*	16.2	16.2	446.8	173.4	33.2	3.2
Cumulative Total	123,073	26,553	98,276	621,962	538,725	1,597
Contributed by Proposed Action	0.028%	0.025%	0.073%	0.004%	0.001%	0.001%

* The Blythe Area represents Southern California Gas and the Blythe Energy Project for 2015 Riverside County. https://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php

Table 4.2-2 Action Alternative Cumulative Emissions

ACTIVITY	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	NO_X (TPY)	CO (TPY)	VOC (TPY)	SO_2 (TPY)
Alternative 1	35.827.6	6.74.9	73.5	27.0	6.4	0.2
Alternative 2	39.430.4	5.47.4	80.9	29.7	7.1	0.2
Alternative 3	37.929.2	5.27.1	77.7	28.5	6.8	0.2
Alternative 4	38.529.7	5.37.2	79.1	29.0	6.9	0.2
Preferred Alternative	38.3	7.2	78.6	28.8	6.9	0.2
Maricopa County	98,106	20,052	63,023	449,787	269,005	1,111
La Paz County	6,104	1,154	3,765	35,350	115,111	16
Riverside County	18,812	5,324	30,969	136,625	154,570	467
Blythe Area*	16.2	16.2	446.8	173.4	33.2	3.2
Maximum Cumulative Total	123,06152	26,5357	97,796838	621,787792	538,6903	1,594
Contributed by Proposed Action	0.032%	0.028%	0.083%	0.005%	0.001%	0.011%

* The Blythe Area represents Southern California Gas and the Blythe Energy Project for 2015 Riverside County. https://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php

Table 4.2-3 Proposed Action and Action Alternative GHG Cumulative Emissions

GHG SOURCE	MAXMIMUM $MTCO_2e$
Proposed Action	21,584
Alternative 1	22,113
Alternative 2	24,322
Alternative 3	23,359
Alternative 4	23,775
Preferred Alternative	23,642

4.2.2 Geology and Minerals

See Chapter 4.

4.2.3 Paleontological Resources

See Chapter 4.

4.2.4 Grazing and Rangeland

See Chapter 4.

4.2.5 Special Designations, Management Allocations, and Wilderness Resources

See Chapter 4.

4.2.6 Noise

See Chapter 4.

4.2.7 Hazards and Hazardous Materials

See Chapter 4.

4.2.8 Public Health and Safety

Table 4.2-4 Modeled Electric Field Levels at Edge of ROW for Existing and Proposed Configurations

LOCATION NO.	STATE	APPROXIMATE LOCATION (SEGMENT)	LEFT SIDE[1] OF ROW ELECTRIC FIELD (KV/M)			RIGHT SIDE[2] OF ROW ELECTRIC FIELD (KV/M)			ICNIRP GUIDELINES EXPOSURE (MORE/LESS)	
			EXISTING	PROPOSED	CHANGE[3]	EXISTING	PROPOSED	CHANGE[C]	OCCUPATIONAL 8.33 KV/M	GENERAL PUBLIC 4.16 KV/M
1	AZ	**p-01**: North of Delaney Substation	0.2	2.1	1.9	1.8	1.8	0.0	Less	Less
2	AZ	**d-01**: Alternative 1 west of Delaney Substation	0.8	0.9	0.1	0.3	2.1	1.8	Less	Less
3	AZ	**i-03**: I-10 Utility Corridor	0.0	2.1	2.1	0.0	2.1	2.1	Less	Less
4	AZ	**p-06**: Kofa National Wildlife Refuge	1.6	2.1	0.5	1.6	1.6	0.0	Less	Less
5	AZ	**qn-02**: North of I-10 and northeast of Quartzsite	0.4	2.1	1.7	0.5	0.6	0.1	Less	Less
6	AZ	**x-07**: South of I-10 and south of Quartzsite	0.8	2.1	1.3	0.8	1.0	0.2	Less	Less
7	AZ	**cb-04**: Copper Bottom Pass	0.5	2.2	1.7	0.2	0.2	0.0	Less	Less
8	CA	**p-15w**: farmland east of Blythe	1.9	2.0	0.1	1.9	1.9	0.0	Less	Less
9	CA	**x-16**: East of Colorado River Substation	0.8	2.1	1.3	0.8	0.8	0.0	Less	Less
10	CA	**p-17**: East of Colorado River Substation	1.6	2.1	0.5	0.8	0.8	0.0	Less	Less

[1] = Left side is the south side at all locations, but location 1 is on the west side.

[2] = Right side is the north side at all locations, but location 1 is on the east side

[3] = Positive value is an increase; negative value is a decrease.

Table 4.2-5 Modeled Average Magnetic Field Levels at Edge of ROW for Existing and Proposed Configurations

LOCATION NO.	STATE	APPROXIMATE LOCATION (SEGMENT)	LEFT SIDE[1] OF ROW MAGNETIC FIELD (MG)			RIGHT SIDE[2] OF ROW MAGNETIC FIELD (MG)			ICNIRP GUIDELINES EXPOSURE (MORE/LESS)	
			EXISTING	PROPOSED	CHANGE[3]	EXISTING	PROPOSED	CHANGE[C]	OCCUPATIONAL 10,000 MG	GENERAL PUBLIC 2,000 MG
1	AZ	**p-01**: North of Delaney Substation	16.8	67.6	50.8	28.0	14.6	-13.4	Less	Less
2	AZ	**d-01**: Alternative 1 west of Delaney Substation	19.5	21.8	2.3	9.9	64.8	54.9	Less	Less
3	AZ	**i-03**: I-10 Utility Corridor	0.0	63.2	63.2	0.0	63.2	63.2	Less	Less
4	AZ	**p-06**: Kofa National Wildlife Refuge	43.0	67.6	24.6	43.0	60.8	17.8	Less	Less
5	AZ	**qn-02**: North of I-10 and northeast of Quartzsite	28.2	63.4	35.2	22.4	18.2	-4.2	Less	Less
6	AZ	**x-07**: South of I-10 and south of Quartzsite	43.0	63.3	20.3	43.0	19.8	-23.2	Less	Less
7	AZ	**cb-04**: Copper Bottom Pass	49.8	65.1	15.3	23.3	34.5	11.2	Less	Less
8	CA	**p-15w**: farmland east of Blythe	50.2	61.5	11.3	50.2	64.7	14.5	Less	Less
9	CA	**x-16**: East of Colorado River Substation	48.5	62.7	14.2	53.7	50.0	-3.7	Less	Less
10	CA	**p-17**: East of Colorado River Substation	41.4	67.1	25.7	46.6	38.2	-8.4	Less	Less

[1] = Left side is the south side at all locations, but location 1 is on the west side.

[2] = Right side is the north side at all locations, but location 1 is on the east side.

[3] = Positive value is an increase, negative value is a decrease

4.2.9 Traffic and Transportation

See Chapter 4.

4.2.10 Water Resources

See Chapter 4.

4.3 SOIL RESOURCES

See Chapter 4.

4.4 BIOLOGICAL RESOURCES

4.4.1 Construction of Action Alternative Segments

4.4.1.1 Direct and Indirect Effects Common to All Action Alternatives

Table 4.4-1 Acres of Long-term Disturbance by Segment in the East Plains and Kofa Zone

SEGMENT	LINE MILES	ANTICIPATED NUMBER OF STRUCTURES[1]	LONG-TERM DISTURBANCE[2,3] (ACRES)
p-01	26.5	88	207.4
p-02	1.2	4	7.7
p-03	2.1	6	18.5
p-04	5.5	15	46.1
p-05	2.0	9	22.0
p-06	35.6	120	300.6
d-01	25.2	83	212.1
i-01	8.3	27	66.9
i-02	3.3	11	29.6
i-03	19.9	64	156.8
Alt. SCS 12kV Dist. Line	3.1	55	<1
i-04	10.5	38	99.1
in-01	13.9	53	121.4
x-01	4.7	16	39.1
x-02a	3.2	12	29.3
x-02b	3.4	10	28.2
x-03	5.6	18	49.8
x-04	22.6	73	186.9
Alt. SCS	N/A	N/A	1.7

[1] For structure type see Appendix 2, Tables 2.2-11 and 2.2-12

[2] For purposes of the analysis for biological resources, long-term disturbance combines short-term disturbance reported in Chapter 2 plus acres of access disturbance that was included with permanent disturbance

[3] Totals include temporary use areas, access roads, structure locations, wire stringing locations, and SCS

Table 4.4-2 Acres of Long-term Disturbance by Segment in the Quartzsite Zone

SEGMENT	LINE MILES	ANTICIPATED NUMBER OF STRUCTURES[1]	LONG-TERM DISTURBANCE[2,3] (ACRES)
p-07	2.2	7	22.9
p-08	0.6	2	6.6
i-05	2.8	9	26.8
qn-01	0.6	3	6.1
qn-02	10.8	37	93.8
qs-01	3.1	10	26.7
qs-02	4.8	17	44.3
x-05	10.2	35	99.6
x-06	9.2	32	102.3
x-07	7.7	26	66.1

[1] For structure type see Appendix 2, Tables 2.2-11 and 2.2-12

[2] For purposes of the analysis for biological resources, long-term disturbance combines short-term disturbance reported in Chapter 2 plus acres of access disturbance that was included with permanent disturbance

[3] Totals include temporary use areas, access roads, structure locations, wire stringing locations, and SCS

Table 4.4-3 Acres of Long-term Disturbance by Segment in the Copper Bottom Zone

SEGMENT	LINE MILES	ANTICIPATED NUMBER OF STRUCTURES[1]	LONG-TERM DISTURBANCE[2,3] (ACRES)
p-09	6.9	23	58.50
p-10	1.1	4	27.10
p-11	4.1	13	72.90
p-12	2.5	8	28.70
p-13	3.5	11	34.70
p-14	0.9	3	10.30
cb-01	3.2	15	66.90
cb-02	2.2	11	32.20
cb-03	4.3	17	4.20
cb-04	1.9	5	65.30
cb-05	4.4	17	29.10
cb-06	1.9	8	66.90
i-06	7.2	26	62.90
i-07	6.3	22	55.90
x-08	1.3	6	10.3

[1] For structure type see Appendix 2, Tables 2.2-11 and 2.2-12

[2] For purposes of the analysis for biological resources, long-term disturbance combines short-term disturbance reported in Chapter 2 plus acres of access disturbance that was included with permanent disturbance

[3] Totals include temporary use areas, access roads, structure locations, wire stringing locations, and SCS

Table 4.4-4 Disturbance to Rare Vegetation Alliances on the Palo Verde Mesa

RARE VEGETATION ALLIANCE	SEGMENTS	TOTAL DISTURBANCE* (ACRES)	
		BLM	NON-BLM
Pleuraphis rigida Alliance (big galleta)	ca-02	0.2	0
	ca-06	0.07	0
	ca-07	0.4	0
	x-15	0.6	0
	x-16	1.5	0
Pluchea sericea Alliance (arrowweed)	ca-06	0	<0.1
Prosopis glandulosa Alliance (honey mesquite)	ca-02	0.1	0
	p-16	0	0.1

* Structures and access.

Table 4.4-5 Disturbance to Suitable Harwood's Eriastrum Habitat by Segment using the Presumed Habitat

SEGMENT	ANTICIPATED STRUCTURES PER SEGMENT IN SUITABLE HABITAT (NUMBER)	ANTICIPATED NEW ACCESS PER SEGMENT IN SUITABLE HABITAT (MILES)	ANTICIPATED TOTAL DISTURBANCE* (ACRES)	
			BLM	NON-BLM
p-16	0	0	0	0
p-17	0	0	0	0
p-18	2	0.6	0.4	2.9
x-15	0	0	<0.01	0
x-16	0	0	0	0
x-19	3	1.1	3.54	0.9
ca-02	0	0	0	0
ca-06	0	0	0	0
ca-07	4	0.9	6.1	0.1
ca-09	11	3.6	13.1	3.7

*Structures and access.

Table 4.4-6 Acres of Long-term Disturbance by Segment in the Colorado River and California Zone

SEGMENT	LINE MILES	ANTICIPATED NUMBER OF STRUCTURES[1]	LONG-TERM DISTURBANCE[2,3] (ACRES)
p-15e	2.8	10	36.00
p-15w	6.6	24	44.90
p-16	4.6	18	42.10
p-17	3.1	12	28.30
p-18	2.4	10	34.50
ca-01	6.7	26	36.00
ca-02	3.4	13	44.90
ca-04	0.4	2	42.10
ca-05	6.6	26	28.30
ca-06	2.8	10	34.50
ca-07	3.0	11	36.00
ca-09	2.6	9	44.90
cb-10	1.9	8	18.4
i-08s	1.3	6	11.8
x-09	0.8	4	9.80
x-10	1.3	5	10.30
x-11	2.1	7	21.30
x-12	1.3	4	17.30
x-13	2.0	7	15.60
x-15	1.4	6	16.00
x-16	2.3	8	22.10
x-19	1.0	5	18.40

1 For structure type see Appendix 2, Tables 2.2-11 and 2.2-12

2 For purposes of the analysis for biological resources, long-term disturbance combines short-term disturbance reported in Chapter 2 plus acres of access disturbance that was included with permanent disturbance

3 Totals include temporary use areas, access roads, structure locations, wire stringing locations, and SCS

Table 4.4-7 Acres of long-term disturbance and distance of line associated with each Project Full-Route Alternative

ALTERNATIVE	LINE MILES	LONG-TERM DISTURBANCE[1] (ACRES)
Proposed Action	114.3	1,084.3
Alternative 1	111.6	1,003.2
Alternative 2	125.8	1,179.3
Alternative 3	123.0	1,197.3
Alternative 4	120.3	1,195.5
Preferred Alternative	125.0	1,188.8

[1] For purposes of the analysis for biological resources, long-term disturbance combines short-term disturbance reported in Chapter 2 plus acres of access disturbance that was included with permanent disturbance;

Table 4.4-8 Acres and Percent of Harwood's Eriastrum Impacted by Project Activities as Modeled by the DRECP and Acres of Suitable Habitat by Project Alternative

PROJECT ALTERNATIVE	PROJECT HABITAT MAPPING	DRECP DISTRIBUTION MODEL 288,303 ACRES RANGE-WIDE	
	SUITABLE ACRES IMPACTED*	PROJECT ACRES IMPACTED*	PERCENT OF TOTAL DRECP ACRES
Proposed Action	3.3	23.2	0.008
Alternative 1	27.3	35.9	0.012
Alternative 2	27.3	60.2	0.021
Alternative 3	27.3	35.9	0.012
Alternative 4	27.3	35.9	0.012
Preferred Alternative	27.3	60.2	0.021

* Prior to micrositing to reduce impacts

4.5 CULTURAL RESOURCES

The following tables present known cultural resources data from the 200-foot direct effects analysis corridor. The extent of previous cultural resources survey, counts of known historic properties, counts of cultural resources for which NRHP eligibility is unknown, and projections of total numbers of historic properties and sites of undetermined eligibility is presented by zone, and further subdivided by segments within specific alternatives and subalternatives.

For the purposes of this discussion, total site density (regardless of NRHP eligibility status) for each individual segment within specific alternatives and subalternatives per 100 acres is presented. The formula for this calculation is as follows:

$$Site\ density\ per\ 100\ acres = \frac{\#\ \text{of known sites}}{\text{acres surveyed}} \times 100$$

For example, 16.6 acres of the 200-foot corridor of Segment cb-03 has been previously surveyed. A total of two sites (regardless of NRHP eligibility status) were recorded within those 16.6 acres. The calculated site density per 100 acres for the 200-foot corridor of Segment cb-03 is as follows:

$$12.0 = \frac{2}{16.6} \times 100$$

Additionally, projected numbers of sites per NRHP eligibility status category are calculated for each individual segment within specific alternatives and subalternatives. The formula for this calculation is as follows:

$$Projected\ \#\ of\ sites = \frac{\text{segment acres}}{100} \times \text{site (per NRHP eligibilty status) density per 100 acres}$$

For example, two sites were recorded within the 106.0 acres of the 200-foot corridor of Segment cb-03, however, only one is NRHP-eligible. To project the site density of NRHP eligible sites within Segment cb-03, the number 6 (representing the value of a single site, in this example) is used in the calculation below. The calculated projected number of NRHP-eligible sites for the 200-foot corridor of Segment cb-03 is as follows:

$$6 = \frac{106.0}{100} \times 6.0$$

These same calculations are used to assess site density and projected site counts for the proposed action, alternative, and subalternative routes. These calculations use combined acres and combined surveyed acres from which to calculate percentage surveyed, site density, and projected sites.

For instance, in the example table below, we show that the segments of Subalternative 1A, combined, includes 241.5 acres. 7.5 percent of those 241.5 acres have been surveyed. The density of known sites per 100 acres of the entire 241.5-acre subalternative is 16.6 (because we have more acreage, but still only the known sites from segment p-02). The known sites are the combined known sites from each segment, and the resulting density and projected site count are based on the total site count and the combined acres or acres surveyed, using the formula above.

In another example below, we show that the segments of Subalternative 4P, combined, includes 250.2 acres. 60.4 percent of those 250.2 acres have been surveyed. The density of known sites per 100 acres of the entire 250.2 -acre subalternative is 31.1.

These two examples reveal how differently site count can be projected if the resulting projections from each segment are added together, rather than calculated based upon the combined acres and acres surveyed. Using the same calculation for individual segments as for complete routes allows for an apple-to-apple comparison or perspective.

For analysis purposes, minimum survey coverage of 25 percent or more is considered to be adequate to estimate the projected number of cultural resources by eligibility category for each Project segment. In cases where survey coverage of at least 25 percent can be demonstrated with negative findings, the projected sensitivity for cultural resources is considered to be low. However, this does not take into account potential environmental variations that may affect the distribution of cultural resources on the landscape per segment.

Example Table for Site Density Calculations:

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 1, SUBALTERNATIVE 1A							
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
x-02a	80.4	0.0	0.0	0	0	0.0/0	0.0/0
x-02b	84.2	4.4	0.0	0	0	0.0/0	0.0/0
Total	241.5	7.5	16.6	1	1	5.5/13	5.5/13
ALTERNATIVE 4, SUBALTERNATIVE 4P							
p-16	116.1	14.6	47.3	0	5	0.0/0	29.6/34
p-17	71.2	100	35.1	2	7	2.8/2	9.8/7
p-18	62.9	100	22.3	1	7	1.6/1	11.1/7
Total	250.2	60.4	31.1	3	19	2.0/5	12.6/31

Table 4.5-1 Known Survey and Anticipated Cultural Resources in Segments by Alternative and Subalternative in the East Plains and Kofa Zone

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
PROPOSED ACTION							
p-01	643.2	46.7	3.3	2	7	0.7/4	2.4/15
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
p-04	115.7	26.0	23.3	2	1	6.7/8	3.3/4
p-05	68.0	17.9	24.8	2	0	16.5/11	0.0/0
p-06	865.9	23.8	8.3	15	2	7.3/63	1.0/8
ALTERNATIVE 1							
p-01	636.2	54.9	2.6	0	2	0.0/0	9.4/19
i-01	205.0	21.2	9.4	0	2	0.0/0	9.4/19
i-02	77.5	0.0	0.0	0	0	0.0/0	0.0/0
i-03	488.1	4.2	19.4	1	3	4.9/24	14.6/71
i-04	256.1	2.0	20.0	0	0	0.0/0	0.0/0

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 1, SUBALTERNATIVE 1A							
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
x-02a	80.4	0.0	0.0	0	0	0.0/0	0.0/0
x-02b	84.2	4.4	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 1, SUBALTERNATIVE 1B							
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
x-01	195.1	2.0	100.0	0	0	0.0/0	0.0/0
x-02a	80.4	0.0	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 1, SUBALTERNATIVE 1C							
in-01	337.5	2.0	30.3	2	0	30.3/102	0.0/0
ALTERNATIVE 2							
i-01	205.0	21.2	9.4	0	2	0.0/0	9.4/19
i-02	77.5	0.0	0.0	0	0	0.0/0	0/0
i-03	488.1	4.2	19.4	1	3	4.9/24	14.6/71
i-04	256.1	2.0	20.0	0	0	0.0/0	0.0/0
p-01	643.2	46.7	3.3	2	7	0.7/4	2.4/15

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 2, SUBALTERNATIVE 2A							
d-01	612.8	5.7	5.7	0	2	0.0/0	5.7/35
x-02a	80.4	0.0	0.0	0	0	0.0/0	0.0/0
x-02b	84.3	4.4	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 2, SUBALTERNATIVE 2B							
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
p-04	115.7	26.0	23.3	2	1	6.7/8	3.3/4
x-03	137.3	1.7	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 3							
i-03	488.1	4.2	19.4	0	3	0.0/0	14.6/71
i-04	253.0	2.1	18.5	0	0	0.0/0	0.0/0
p-01	643.2	46.7	3.3	2	7	0.7/4	2.4/15
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
p-04	115.7	26.0	23.3	2	1	6.7/8	3.3/4
x-03	137.3	1.7	0.0	0	0	0.0/0	0.0/0

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 3, SUBALTERNATIVE 3A							
d-01	612.8	5.7	5.7	0	2	0.0/0	5.7/35
x-02a	80.4	0.0	0.0	0	0	0.0/0	0.0/0
x-02b	84.3	4.4	0.0	0	0	0.0/0	0.0/0
i-02	77.5	0.0	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 3, SUBALTERNATIVE 3B							
i-01	205.0	21.2	9.4	0	2	0.0/0	9.4/19
i-02	77.5	0.0	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 3, SUBALTERNATIVE 3C							
p-05	68.0	17.9	24.8	1	0	8.3/6	0.0/0
x-04	549.7	4.4	14.1	0	1	0.0/0	4.1/23
ALTERNATIVE 3, SUBALTERNATIVE 3D							
in-01	337.5	2.0	30.3	2	0	30.3/102	0.0/0
ALTERNATIVE 4							
d-01	612.8	5.7	5.7	0	2	0.0/0	5.7/35
in-01	337.5	2.0	30.3	2	0	30.3/102	0.0/0
p-04	115.7	26.0	23.3	2	1	6.7/8	3.3/4
p-05	68.0	17.9	24.8	1	0	8.3/6	0.0/0
x-04	549.7	4.4	14.1	0	1	0.0/0	4.1/23

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 4, SUBALTERNATIVE 4A							
p-01	643.2	46.7	3.3	2	7	0.7/4	2.4/15
p-02	26.1	13.5	85.7	1	1	28.6/7	28.6/7
p-03	50.8	14.7	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 4, SUBALTERNATIVE 4B							
x-03	137.3	1.7	0.0	0	0	0.0/0	0.0/0
i-03	488.1	4.2	19.4	1	3	4.9/24	14.56/71
ALTERNATIVE 4, SUBALTERNATIVE 4C							
i-04	256.1	2.0	20.0	0	0	0.0/0	0.0/0
PREFERRED ALTERNATIVE							
i-01	205.0	21.2	9.4	0	2	0.0/0	9.4/19
i-02	77.5	0.0	0.0	0	0	0.0/0	0/0
i-03	488.1	4.2	19.4	1	3	4.9/24	14.6/71
i-04	256.1	2.0	20.0	0	0	0.0/0	0.0/0
p-01	643.2	46.7	3.3	2	7	0.7/4	2.4/15
SCS DISTRIBUTION LINE[3]							
12kV Line	7.6	0.4	0.0	0	0	0.0/0	0.0/0

[1]Density of known sites/100 acres includes sites that are previously recommended/determined ineligible for listing in the NRHP.

[2] (/) is used in this column to indicate the separation of data values

[3]20-foot analysis corridor for the 12kV distribution line

Table 4.5-2 Known Survey and Anticipated Cultural Resources in Segments by Alternative and Subalternative in the Quartzsite Zone

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
PROPOSED ACTION							
p-07	51.6	14.6	34.2	1	4	6.8/4	27.4/14
p-08	16.6	5.6	17.9	0	0	0.0/0	0.0/0
ALTERNATIVE 1							
i-05	69.6	36.3	4.0	0	1	0.0/0	4.0/3
qs-01	75.1	94.1	0.0	0	0	0.0/0	0.0/0
qs-02	118.0	38.4	11.0	1	0	2.2/3	0.0/0
ALTERNATIVE 1, SUBALTERNATIVE 1D							
qn-01	15.1	89.6	22.2	1	1	7.4/1	7.4/1
ALTERNATIVE 2							
i-05	69.6	36.3	4.0	0	1	0.0/0	4.0/3
qs-01	75.1	94.1	0.0	0	0	0.0/0	0.0/0
x-07	188.2	3.1	0.8	0	6	0.0/0	105.3/198
ALTERNATIVE 3							
p-07	51.6	14.6	34.2	1	4	6.8/4	27.4/14
p-08	16.6	5.6	17.9	0	0	0.0/0	0.0/0
x-05	248.9	1.0	41.7	1	0	41.7/104	0.0/0

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 3, SUBALTERNATIVE 3E							
qs-01	75.1	94.1	0.0	0	0	0.0/0	0.0/0
x-07	188.2	3.1	122.8	0	6	0.0/0	105.3/198
ALTERNATIVE 3, SUBALTERNATIVE 3F							
x-06	225.1	23.7	11.2	3	2	5.6/13	3.7/8
ALTERNATIVE 3, SUBALTERNATIVE 3G							
qn-01	15.1	89.6	22.2	1	1	7.4/1	7.4/1
ALTERNATIVE 3, SUBALTERNATIVE 3H							
qn-02	263.3	56.6	4.7	3	1	2.0/5	0.7/2
ALTERNATIVE 3, SUBALTERNATIVE 3J							
i-05	69.6	36.3	4	0	1	0.0/0	4.0/3
ALTERNATIVE 4							
p-08	16.6	5.6	17.9	0	0	0.0/0	0.0/0
qn-01	15.1	89.6	22.2	1	1	7.4/1	7.4/1
x-06	225.1	23.7	11.2	3	2	5.6/13	3.7/8
ALTERNATIVE 4, SUBALTERNATIVE 4D							
x-05	248.9	1.0	41.7	1	0	41.7/104	0.0/0
p-07	51.6	14.6	34.2	1	4	6.8/4	27.4/14

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 4, SUBALTERNATIVE 4J							
i-05	69.6	36.3	4	0	1	0.0/0	4.0/3
PREFERRED ALTERNATIVE							
x-05	248.9	1.0	41.7	1	0	41.7/104	0.0/0
p-07	51.6	14.6	34.2	1	4	6.8/4	27.4/14
p-08	16.6	5.6	17.9	0	0	0.0/0	0.0/0

[1]Density of known sites/100 acres includes sites that are previously recommended/determined ineligible for listing in the NRHP.

[2](/) is used in this column to indicate a separation of data values.

Table 4.5-3 Known Survey and Anticipated Cultural Resources in Segments by Alternative and Subalternative in the Copper Bottom Zone

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
PROPOSED ACTION							
p-09	168.0	77.4	1.5	0	2	0.0/0	1.5/3
p-10	28.3	62.9	5.6	0	1	0.0/0	5.6/2
p-11	100.1	61.4	3.3	0	2	0.0/0	3.3/3
p-12	64.2	9.8	0.0	0	0	0.0/0	0.0/0
p-13	84.0	97.5	7.3	2	0	2.4/2	0.0/0
p-14	23.1	75.2	23.1	0	0	0.0/0	0.0/0
ALTERNATIVE 1							
i-06	176.2	37.7	1.5	0	0	0.0/0	0.0/0
i-07	154.7	33.3	7.8	0	3	0.0/0	5.8/9
ALTERNATIVE 2							
p-09	168.0	77.4	1.5	0	2	0.0/0	1.5/3
p-10	28.3	62.9	5.6	0	1	0.0/0	5.6/2
p-11	100.1	61.4	3.3	0	2	0.0/0	3.3/3
p-12	64.2	9.8	0.0	0	0	0.0/0	0.0/0
p-13	84.0	97.5	7.3	2	0	2.4/2	0.0/0
p-14	23.1	75.2	23.1	0	0	0.0/0	0.0/0
ALTERNATIVE 2, SUBALTERNATIVE 2C							
cb-02	81.6	38.5	3.2	0	0	0.0/0	0.0/0
cb-04	45.7	45.2	14.6	0	3	0.0/0	14.6/7
cb-06	46.9	0.3	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 2, SUBALTERNATIVE 2D							

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
cb-03	106	15.6	12.0	1	0	6.0/6	0.0/0
ALTERNATIVE 3							
p-09	168.0	77.4	1.5	0	2	0.0/0	1.5/3
p-14	23.1	75.2	23.1	0	0	0.0/0	0.0/0
cb-01	77.9	4.8	0.0	0	0	0.0/0	0.0/0
cb-04	45.7	45.2	14.6	0	3	0.0/0	14.6/7
cb-05	107.9	8.7	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 3, SUBALTERNATIVE 3K							
p-10	28.2	41.9	8.5	0	0	0.0/0	0.0/0
cb-02	81.6	38.5	3.2	0	0	0.0/0	0.0/0
ALTERNATIVE 3, SUBALTERNATIVE 3L							
i-06	176.2	37.7	1.5	0	0	0.0/0	0.0/0
x-08	32.4	23.5	13.2	1	0	13.2/4	0.0/0
p-12	64.2	9.8	0.0	0	0	0.0/0	0.0/0
p-13	84	97.5	7.3	2	0	2.4/2	0.0/0
ALTERNATIVE 4							
p-09	168.0	77.4	1.5	0	2	0.0/0	1.5/3
p-10	28.3	62.9	5.6	0	1	0.0/0	5.6/2
p-13	84.0	97.5	7.3	2	0	2.4/2	0.0/0
p-14	23.1	75.2	23.1	0	0	0.0/0	0.0/0
cb-02	81.6	38.5	3.2	0	0	0.0/0	0.0/0
cb-04	45.7	45.2	14.6	0	3	0.0/0	14.6/7
cb-06	46.9	0.3	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 4, SUBALTERNATIVE 4E							
cb-01	77.9	4.8	0	0	0	0.0/0	0.0/0

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 4, SUBALTERNATIVE 4F							
cb-05	107.9	8.7	0	0	0	0.0/0	0/0
ALTERNATIVE 4, SUBALTERNATIVE 4G							
p-11	100.1	61.4	3.3	0	2	0.0/0	3.3/3
p-12	64.2	9.8	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 4, SUBALTERNATIVE 4H							
x-08	32.4	23.5	13.2	1	0	13.2/4	0.0/0
i-07	154.7	33.3	7.8	0	3	0.0/0	5.8/9
PREFERRED ALTERNATIVE							
p-09	168.0	77.4	1.5	0	2	0.0/0	1.5/3
p-10	28.3	62.9	5.6	0	1	0.0/0	5.6/2
p-11	100.1	61.4	3.3	0	2	0.0/0	3.3/3
p-12	64.2	9.8	0.0	0	0	0.0/0	0.0/0
p-13	84.0	97.5	7.3	2	0	2.4/2	0.0/0
p-14	23.1	75.2	23.1	0	0	0.0/0	0.0/0

[1]Density of known sites/100 acres includes sites that are previously recommended/determined ineligible for listing in the NRHP.

[2](/) is used in this column to indicate a separation of data values.

Table 4.5-4 Known Survey and Anticipated Cultural Resources in Segments by Alternative and Subalternative in the Colorado River/California Zone

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
PROPOSED ACTION							
p-15e	68.5	31.1	14.1	0	3	0.0/0	14.1/10
p-15w	161.5	32.4	15.3	0	2	0.0/0	15.3/25
p-16	116.1	14.6	47.3	0	5	0.0/0	29.6/34
p-17	71.2	100	35.1	2	7	2.8/2	9.8/7
p-18	62.9	100	22.3	1	7	1.6/1	11.1/7
ALTERNATIVE 1							
i-08s	32.5	28.9	0.0	0	0	0.0/0	0.0/0
ca-04	9.4	21.3	0.0	0	0	0.0/0	0.0/0
ca-05	161.9	3.4	109.1	0	6	0.0/0	109.1/177
ca-06	64.1	33.1	4.7	0	1	0.0/0	4.7/3
ca-07	74.7	70.4	3.8	0	0	0.0/0	0.0/0
ca-09	63.1	100	3.2	0	0	0.0/0	0.0/0
x-09	19.8	30.3	0.0	0	0	0.0/0	0.0/0
x-19	24.2	100.0	16.5	0	3	0.0/0	12.4/3
ALTERNATIVE 1, SUBALTERNATIVE 1E							
ca-01	162.2	2.0	272.7	0	9	0.0/0	272.7/442
x-10	31.1	60.8	0.0	0	0	0.0/0	0.0/0
x-12	30.7	4.9	133.3	0	2	0.0/0	133.3/41

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 2							
p-15e	68.5	31.1	14.1	0	3	0.0/0	14.1/10
p-15w	161.5	32.4	15.3	0	8	0.0/0	15.3/25
p-16	116.1	14.6	47.3	0	5	0.0/0	29.6/34
x-15	35.6	62.9	0.0	0	0	0.0/0	0.0/0
x-16	57.3	13.3	26.3	1	1	13.2/8	13.2/8
ca-07	74.7	70.4	3.8	0	0	0.0/0	0.0/0
ca-09	63.1	100	3.2	0	0	0.0/0	0.0/0
x-19	24.2	100.0	16.5	0	3	0.0/0	12.4/3
ALTERNATIVE 2, SUBALTERNATIVE 2E							
x-13	48.7	3.3	62.5	0	1	0.0/0	62.5/30
ca-02	82.8	10.1	35.7	0	3	0.0/0	35.7/30
ALTERNATIVE 3							
ca-01	162.2	2.0	272.7	0	9	0.0/0	272.7/442
ca-06	64.1	33.1	4.7	0	1	0.0/0	4.7/3
ca-07	74.7	70.4	3.8	0	0	0.0/0	0.0/0
ca-09	63.1	100	3.2	0	0	0.0/0	0.0/0
cb-10	46.8	14.1	0.0	0	0	0.0/0	0.0/0
x-11	51.7	1.5	125.0	0	1	0.0/0	125.0/65
x-12	30.7	4.9	133.3	0	2	0.0/0	133.3/41
x-19	24.2	100.0	16.5	0	3	0.0/0	12.4/3

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 3, SUBALTERNATIVE 3M							
p-15e	68.5	31.1	14.1	0	3	0.0/0	14.1/10
p-15w	161.5	32.4	15.3	0	8	0.0/0	15.3/25
x-13	48.7	3.3	62.5	0	1	0.0/0	62.5/30
ALTERNATIVE 4							
p-15e	68.5	31.1	14.1	0	3	0.0/0	14.1/10
p-15w	161.5	32.4	15.3	0	8	0.0/0	15.3/25
ca-06	64.1	33.1	4.7	0	1	0.0/0	4.7/3
ca-07	74.7	70.4	3.8	0	0	0.0/0	0.0/0
ca-09	63.1	100	3.2	0	0	0.0/0	0.0/0
x-12	30.7	4.9	133.3	0	2	0.0/0	133.3/41
x-13	48.7	3.3	62.5	0	1	0.0/0	62.5/30
x-19	24.2	100.0	16.5	0	3	0.0/0	12.4/3
ALTERNATIVE 4, SUBALTERNATIVE 4K							
i-08s	32.5	28.9	0.0	0	0	0.0/0	0.0/0
ca-04	9.4	21.3	0.0	0	0	0.0/0	0.0/0
x-09	19.8	30.3	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 4, SUBALTERNATIVE 4L							
cb-10	46.8	14.1	0.0	0	0	0.0/0	0.0/0
x-11	51.7	1.5	125.0	0	1	0.0/0	125.0/65

SEGMENT NO.	ACRES (200-FT CORRIDOR)	PERCENTAGE OF SEGMENT SURVEYED (%)	DENSITY OF KNOWN SITES (PER 100 ACRES)[1]	COUNT OF KNOWN DETERMINED OR RECOMMENDED ELIGIBLE SITES	COUNT OF KNOWN UNEVALUATED/ UNKNOWN ELIGIBILITY SITES	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF NRHP-ELIGIBLE SITES[2]	DENSITY (PER 100 ACRES)/ PROJECTED COUNT OF SITES TO BE EVALUATED[2]
ALTERNATIVE 4, SUBALTERNATIVE 4M							
ca-01	162.2	2.0	272.7	0	9	0.0/0	272.7/442
ALTERNATIVE 4, SUBALTERNATIVE 4N							
x-10	31.1	60.8	0.0	0	0	0.0/0	0.0/0
ALTERNATIVE 4, SUBALTERNATIVE 4P							
p-16	116.1	14.6	47.3	0	5	0.0/0	29.6/34
p-17	71.2	100	35.1	2	7	2.8/2	9.8/7
p-18	62.9	100	22.3	1	7	1.6/1	11.1/7
PREFERRED ALTERNATIVE							
p-15e	68.5	31.1	14.1	0	3	0.0/0	14.1/10
p-15w	161.5	32.4	15.3	0	8	0.0/0	15.3/25
p-16	116.1	14.6	47.3	0	5	0.0/0	29.6/34
x-15	35.6	62.9	0.0	0	0	0.0/0	0.0/0
x-16	57.3	13.3	26.3	1	1	13.2/8	13.2/8
ca-07	74.7	70.4	3.8	0	0	0.0/0	0.0/0
ca-09	63.1	100	3.2	0	0	0.0/0	0.0/0
x-19	24.2	100.0	16.5	0	3	0.0/0	12.4/3

[1]Density of known sites/100 acres includes sites that are previously recommended/determined ineligible for listing in the NRHP.

[2](/) is used in this column to indicate a separation of data values.

4.6 CONCERNS OF INDIAN TRIBES

See Chapter 4.

4.7 LAND USE

Table 4.7-1 Land Use Compliance with Relevant Land Use Plans

PLAN	GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
BLM Yuma RMP	The Yuma Field Office has identified eight utility corridors in its planning area. New major ROWs and utility facilities should be located in designated ROW corridors, unless an evaluation of the project demonstrates location outside of a designated corridor is the only practicable alternative. The BLM has stated that the Project ROW must be in designated corridors or would be out of compliance with the RMP.	Several segments would be out of compliance with the ROW requirements of the Yuma RMP and would require an RMP Amendment (Section 4.7.4.2). Several segments would not conform with designated VRM classes (Section 4.11) and would require an RMP Amendment.
BLM Bradshaw-Harquahala RMP	The Hassayampa Field Office has identified utility corridors as a specific land use allocation and has listed the types of projects for which utility corridors may be designated. To minimize impacts on BLM-administered land, new infrastructure should be within these designated corridors. The BLM has the authority to designate new utility corridors for facilities that fall within one of three categories (including electric transmission); however, other land uses, such as avoiding sensitive or special resources, must be taken into consideration.	The Project would be consistent with the Bradshaw-Harquahala RMP.
BLM Lower Sonoran RMP	The Lower Sonoran Field Office has identified utility corridors as a specific land use allocation in which all compatible major linear utilities will be allowed. The RMP states that linear facilities may be authorized outside of the utility corridor if they are due and necessary and connecting a generating facility to the closest designated utility corridor.	The Project would be consistent with the Lower Sonoran RMP.

PLAN	GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
BLM Lake Havasu RMP	The Lake Havasu Field Office has identified utility corridors as a land use authorization pursuant to Title 5 of the FLPMA. Uses authorized by a ROW issued under Title 5 may include power lines. The Lake Havasu Field Office has identified 12 utility corridors in its planning area that are either existing corridors or additional/revised corridors tying together existing corridors. To minimize impacts and the proliferation of separate ROWs on BLM-administered land, new infrastructure should be within these identified corridors.	One Alternative Segment would not conform with designated VRM classes (Section 4.11) and would require an RMP Amendment (Section 4.7.4.2).
Kofa National Wildlife Refuge and Wilderness…Interagency Management Plan	Within the Interagency Management Plan, shared land uses are described, which include designated utility corridors. To grant use of a ROW, the USFWS would need to find the use appropriate for the refuge based on the conditions in chapter 603 FW 1 of the USFWS Fish and Wildlife Service Manual and would also need to conduct a compatibility determination if the use is found appropriate.	The Project was found to not be an appropriate use on the Kofa NWR (USFWS 2017).
CDCA Plan of 1980, as amended	The Project would fall within a DFA identified in the CDCA Plan. In addition to being pre-screened and allowed for development, projects in DFAs benefit from consistent and predictable mitigation requirements identified in the DRECP and can take advantage of the database of resource data collected as part of the DRECP. New projects must comply with applicable CMAs in the CDCA Plan.	The Project would be consistent with this plan and all CMAs that would apply to the Project, except for LUPA-BIO-PLANT-2 (Appendix 2C). An amendment to the CDCA Plan would be required for all California segments to be in compliance (Section 4.7.4.2).
Maricopa County Comprehensive Plan	The plan does not specifically discuss regulations or policies for transmission lines or other utilities; however, the plan includes a Land Use Policy that states, “Maricopa County supports land use buffers and compatible land use strategies near existing and future high voltage electric utility line corridors.” This Land Use Policy points toward the use of corridors for transmission lines.	The Project would be consistent with this plan.

PLAN	GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
Tonopah/Arlington Area Plan	This area plan does not designate specific corridors for utility infrastructure or provide detail on how transmission line infrastructure should occur.	The Project would be consistent with this plan.
La Paz County Zoning Plan	Although the plan does not expressly identify utility corridors for transmission infrastructure, it states that "[a]ny new industrial development should be located along a major arterial corridor, rail connection, [or] state highway, or in close proximity to the Interstate corridor."	The Proposed Action and Alternative Segments, where they occur along the DPV1 or I-10, would be consistent with this plan. Alternative segments outside of these areas would not be consistent with this plan.
Riverside County General Plan	The plan objectives include ensuring that development and conservation land uses do not infringe on existing essential public facilities and public utility corridors, taking into consideration utility easements and linear ROWs in land development and conservation proposal reviews, and avoiding crossing ridge tops to avoid bird collisions.	The Project would be consistent with this Plan.
Riverside County Palo Verde Area Plan	This area plan does not define land specifically for the use of utility infrastructure; however, it is intended to be consistent with the Riverside County General Plan, the City of Blythe General Plan, and the City of Blythe Colorado River Corridor Plan.	The Project would be consistent with this Plan.
Town of Quartzsite General Plan	One of the goals of this plan is to promote an efficient land use development pattern where utility infrastructure is available. Although the plan does not identify particular corridors for utilities, the strategy supporting this goal is to coordinate infrastructure improvement with existing and projected development activity and, therefore, place utilities in areas that are beneficial to the community and complement the plan.	The Alternative Segments that cross existing development, e.g., the La Posa LTVA, Dome Rock 14-Day Camping Area, or a Tier III growth area, would not be consistent with this plan. This plan does not apply to the Proposed Action segments because they are outside its planning boundary.
City of Blythe General Plan 2025	Although specific corridors are not identified for utility infrastructure in this plan, the guiding policies indicate the city's intent to protect existing uses (e.g., agriculture, recreation, sensitive habitats) and minimize conflicts between urban and open-space uses by requiring buffers and greenbelts.	The Project would be consistent with this Plan.

PLAN	GOALS/OBJECTIVES/POLICY	COMPLIANCE DETERMINATION
City of Blythe Colorado River Corridor Plan	Although this plan does not discuss transmission line corridors or utility ROWs, it is intended to be consistent with the City of Blythe General Plan, and the city would assess placement of these ROWs in the same manner.	The Project would be consistent with this Plan.

Table 4.7-2 Segments Requiring Yuma RMP Amendment Prior to ROW Grant

SEGMENT	ZONE	LENGTH BLM	ACRES BLM
i-03	East Plains and Kofa	12.2	295.8
x-01	East Plains and Kofa	1.0	24
x-02b	East Plains and Kofa	0.1	2.4
x-03	East Plains and Kofa	5.6	134.4
x-04	East Plains and Kofa	21.5	521.2
qn-02	Quartzsite	9.8	235.2
qs-01[1]	Quartzsite	3.1	74.4
qs-02[1]	Quartzsite	4.8	115.2
x-05	Quartzsite	10.2	244.8
x-06	Quartzsite	9.2	220.8
cb-01	Copper Bottom	3.2	76.8
cb-02	Copper Bottom	2.2	52.8
cb-04	Copper Bottom	1.7	40.8
cb-05	Copper Bottom	3.9	93.6
cb-06	Copper Bottom	1.3	31.2
TOTAL		**88.4**	**2,121.6**

[1] Only a portion would be outside of a designated corridor; only this portion would require an RMP amendment. The total BLM acreage is included to be conservative.

Table 4.7-3 Reasonably Foreseeable Future Project Potential Disturbance in CEA

ZONE	PROJECT	TYPE	ACRES
EP&K	La Paz County Land Conveyance	Solar Facility	5,935
QTZ	Plomosa 9 Placer Claim	Mine	20
QTZ	Quartzsite WWTP	Infrastructure	16.7*
CB	West Port Gold	Mine	40
CR&CA	Blythe Energy Power Plant/ Sonoran Energy Project	Power Plant	76
CR&CA	Blythe Mesa Solar Project	Solar Facility	7,025
CR&CA	Desert Quartzite Solar Project	Solar Facility	4,800
CR&CA	Crimson Solar	Solar Facility	2,700
Total			**20,596**

* Expansion would be within existing facility footprint; therefore, it is not included in total disturbance.

4.8 RECREATION

See Chapter 4.

4.9 SOCIOECONOMICS

4.9.1 Socioeconomic Methods for Analysis

4.9.1.1 Analysis Area

As noted in Section 3.9, some economic data are reliably available only at the county level while others are available at the census block group geographic level. Due to the dominance of Phoenix and Los Angeles at the county level for Maricopa County and Riverside County, respectively, in socioeconomic data areas, the Block Group study area will be the analysis area where possible. Otherwise the three-county Analysis Area will be used. The Block Group study area is comprised of the block groups that contain the area within 0.5-mile of the Proposed Action and Action Alternative segments. The block group study area is the area that would be most affected by the Project. The block groups do not coincide with the geographic zones used for analysis of most of the other resources in this EIS. Consequently, the zones will not be used in this section.

Economic effects from the Project were estimated using the RIMS II regional economic model, developed by the US Department of Commerce Bureau of Economic Analysis. RIMS II is an input/output modeling system that is widely used by both private-sector and public-sector economists throughout the United States to assess the potential economic impacts of proposed projects within a broad range of sizes and industries. The model is based on “interindustry relationships within regions” (BEA 1997) and uses multipliers determined through recent economic activity to estimate indirect and induced effects of any given project on the modeled area. One example of a potential indirect effect would include any “multiplier” effects on the economy resulting from the recirculation of money spent by construction workers or the

purchase of construction goods and services within the analysis area. RIMS II multipliers used for this analysis are based on 2007 national benchmark input-output data and 2015 regional data.

4.9.1.2 Assumptions

The construction phase of the Project would have a greater impact on jobs, income, population, housing, and the economy, than the operations and maintenance phase. The decommissioning phase would be similar to the construction phase relative to anticipated socioeconomic impacts. Such impacts, however, would occur so much later in time that conducting a thorough analysis for decommissioning now would necessarily rely on unsupported assumptions. Construction of the Project would produce multiple types of revenue streams that would stimulate the local economy—procurement of locally sourced goods and services, wages paid to local construction workers, and the local expenditures of non-local construction workers during the period they reside in the analysis area. Each of these revenue streams was incorporated in the RIMS II analysis. Operation and maintenance of the transmission line would generate tax revenues for as long as the line is in use, as well as potential right-of-way lease fees.

Even though the majority of the construction workforce would be temporary workers who would not permanently reside in the analysis area, they would still contribute to the overall economic impacts of the Project. Given that the non-local labor force would reside in the local community for the duration of the Project, they would inevitably spend a portion of their income in the local economy. These local expenditures would likely primarily include housing, food, and entertainment. DCRT estimates that approximately 45 percent of Project construction workers would be hired from the local labor pool, which is typically defined as workers who reside within a 50-mile radius of the Project (DCRT 2017b).

Given the short-term and migratory nature of this Project during construction activities, very few of these employees are expected to be accompanied by their families. Experience on similar projects has shown that the proportion of non-local construction workers accompanied by their families ranges from none to roughly 10 percent of the non-local work force (BLM 2013a; 2013b). To ensure this analysis does not inadvertently understate potential population-related impacts, the analysis assumes that 10 percent of the non-local construction workforce would be accompanied by a spouse and a school-aged child.

The local economic opportunities that result from construction-related payroll and construction expenditures for local goods and services could also lead to additional migration to the analysis area. The RIMS II model provides estimates of the number of indirect and induced jobs that would be created due to these expenditures. “Indirect effects,” as the term is used in economics, includes additional employment and wages resulting from spending by the construction companies, while “induced effects” are increased employment and wages resulting from the economic growth associated with increased spending by workers in the area. The extent to which indirect and induced jobs would be filled by existing residents in the analysis area, versus people drawn to the area by these new employment opportunities, is unknown. For purposes of estimating potential impacts on population, this analysis provides a range of potential population effects from the alternatives. At the low end, the indirect and induced jobs are assumed to be

filled entirely by local residents and estimates of population effects include only the direct Project construction workers and families from outside the Project Area (55 percent). At the high end, half the indirect and induced jobs are assumed to be filled by workers who migrate to the analysis area. The composition of these workers' households is assumed to mirror the current average of 2.19 persons per household within La Paz County, which is considered most representative of the Project Area (US Census Bureau 2017).

Non-local workers, direct or indirect, would require housing in the analysis area. For purposes of considering potential effects on housing conditions, the number of projected non-local workers is compared to the estimated availability of rental housing, motel/hotel rooms, and RV sites within the analysis area.

During the operations and maintenance phase of the Project, which is expected to last approximately 50 years, DCRT estimates a workforce of three, full-time equivalent local jobs at a cost of $195,000 per year (in 2020 dollars) (DCRT 2017b).

Table 4.9-1 Impacts to Jobs and Employment

JOBS	DIRECT	INDIRECT	INDUCED	TOTAL
Transmission Line	120	54.1	85.5	259.6
Substation	40	9.0	14.3	43.3
Total	160	63.1	99.8	302.9

Table 4.9-2 Impacts to Earnings from Indirect and Induced Employment

EARNINGS	DIRECT	INDIRECT	INDUCED	TOTAL
Total ($ millions)	N/A*	13.3	17.7	31.0

*N/A – Not Available, at the request of the Applicant

Table 4.9-3 Impacts to Population

	DIRECT*	INDIRECT	INDUCED	NON-LOCAL HOUSEHOLD PERSONS**	POPULATION INCREASE (PERSONS) ***
Scenario One – All Indirect and Induced Hires Local					
Local	63	63	100	0	0
Non-Local	77	0	0	15.4	92.4
Scenario Two – Half of Indirect and Induced Hires Non-Local					
Local	63	31.5	50	0	0
Non-Local	77	31.5	50	31.7	190.2

* Construction Workers

** Non-Local Households = 10% of non-local workers times 2

*** Population Increase = non-local workers and their families

Table 4.9-4 Population Impacts as a Percent

AREA	2014 POPULATION (TABLE 3.15-1)	SCENARIO ONE		SCENARIO TWO	
		POPULATION INCREASE (PERSONS)	POPULATION INCREASE (%)	POPULATION INCREASE (PERSONS)	POPULATION INCREASE (%)
La Paz County	20,348	92	0.452 %	190	0.934%
Maricopa County	3,947,382	92	0.002%	190	0.005%
Riverside County	2,266,899	92	0.004%	190	0.008%
Three-County Study Area	6,234,629	92	0.001%	190	0.003%
Block Group Study Area	21,710	92	0.424%	190	0.875%

Table 4.9-5 Project Impacts on Existing Housing Units

AREA	2014 HOUSING UNITS	SCENARIO ONE		SCENARIO TWO	
		HOUSING UNITS INCREASE	HOUSING UNITS INCREASE (%)	HOUSING UNITS INCREASE	HOUSING UNITS INCREASE (%)
La Paz County	16,113	77	0.478%	158	0.981%
Maricopa County	1,657,753	77	0.005%	158	0.010%
Riverside County	810,426	77	0.010%	158	0.019%
Three-County Study Area	2,484,292	77	0.003%	158	0.006%
Block Group Study Area	13,750	77	0.560%	158	1.149%

4.10 ENVIRONMENTAL JUSTICE

See Chapter 4.

4.11 VISUAL RESOURCES

4.11.1 Introduction

See Chapter 4.

4.11.2 Methods for Analysis

4.11.2.6 Analysis of KOPs/Segments not Simulated

When viewers are proximal to the large structures (such as driving the road through Copper Bottom Pass, where existing structures are a few hundred feet away, adjacent to the road) and overall infrastructure of a transmission line is similar to the Project, the infrastructure has "presence" for the viewer. Viewers see and sense the largeness of the structures and other infrastructure in comparison to themselves, their vehicle, and the surrounding landscape. Apart of visibility, viewers can experience noise created by wind moving around the conductors or crackling. When the Project would have "presence" for the viewer it would be a major modification to and dominate the visual environment. Distance between the viewer and the Project was found to be the primary indicator of "presence," level of modification, and dominance.

The following examples of transmission structure visibility in the Project Area provide a gradient of viewer proximity and demonstrate how these factors affect the visual impact that the Project would have, and how the factors can be applied to non-simulated KOPs/segments to make conformance determinations.

From KOP 1 viewers would be approximately 2 miles from the closest point of the Project along Segment d-01. At 2 miles distant where the Project infrastructure would be viewed against a background of somewhat scenic topography, the Project (and the existing monopole structures connecting the Delaney Substation to the Harquahala Power Plant) would essentially not be visible, understanding that time of day, atmospheric, and lighting conditions could somewhat affect visibility.

From KOP 7 viewers would be approximately 1 mile from the closest point of the DPV1 transmission line along Segment p-01. The self-supporting lattice structures would be visible and barely noticeable where skylined, but difficult to discern against the mountainous backdrop. Where visible, the structures form would be unclear and the conductors would not be visible.

From KOP 19, (simulated, Figure 4.11-21, Appendix 7) viewers would be approximately 1.25 miles from the closest point of the Project along Segment in-01. Similar to KOP 7, due to distance, the structures would appear very small in the landscape; due to intervening topography, only the tops would be visible and form would be indistinguishable. Due to intervening vertical vegetation (primarily saguaro cactus), the structures would be barely distinguishable and not noticeable, and the conductors would not be visible. Segment in-01 would be located within a BLM utility corridor and would meet VRM Class III objectives, as viewed from KOP 19.

From KOP 20, (simulated, Figure 4.11-10a, Appendix 7) viewers would be approximately 0.5-mile away from the Project along Segment in-01. Where skylined, structures would be visible and somewhat noticeable, but would not be detectible against a backdrop of rugged mountains. Structure form would be distinguishable, but conductors would not be visible. Segment in-01 would be located within a BLM utility corridor and would meet VRM Class III objectives, as viewed from KOP 20.

From KOP 20, (simulated, Figure 4.11-10b, Appendix 7) viewers would be approximately 0.2-mile away from the Project along Segment i-04. In this view, because of proximity to the structures, they would begin to appear larger than some of the surrounding landforms. Where skylined, structures, conductors, and guy wires would be clearly visible and attract attention. With a backdrop of low rugged hills, structures would be visible but not noticeable, and conductors and guy wires would not be visible. Structure form would be distinctive. While Segment i-04 would be located within a BLM utility corridor and would meet VRM Class III objectives, as viewed from KOP 20, this area is used for OHV recreation, and viewers would be expected to be traveling in closer proximity to the Project. In this case, the Project would dominate the surrounding landscape and would not conform to VRM Class III objectives.

From KOP 17, viewers would be approximately 0.3-mile away from the Project along Segment i-03. Structures would be partially skylined and partially visible against a backdrop of distant mountains with hazy atmospheric conditions. The structures and their form would be noticeable. The portion of Segment i-03 located within a BLM utility corridor would meet VRM Class III objectives, as viewed from KOP 17.

From KOP 37, (simulated, Figure 4.11-6, Appendix 7) viewers would be less than 0.2-mile away from the Project along Segment p-13. Because of the proximity of the viewer to the structures and the distance between the structures and the backdrop of rugged mountains, the structures would be much larger than the surrounding scenery, the conductors and guy wires would be clearly visible, and the contrast between the form of the guyed V structures and the self-supporting lattice structures of the DPV1 transmission line would be evident. As structures recede in the distance, the conductors and guy wires quickly would become invisible and the form contrast would transition to less noticeable and then undetectable with greater distance. However, this area is heavily used for OHV recreation, with routes essentially paralleling and winding around the existing DPV1 structures. Therefore, a portion of the structures would appear to recreationists as the closest structures. The Project, in conjunction with the DPV1 transmission line would be a major modification and would dominate the surrounding landscape and therefore would not conform to VRM Class III objectives.

Further, as previously described, the BLM has determined that in heavily recreated areas, guy wires could pose an unacceptable risk to OHV recreationists. Therefore, in situations such as the one simulated in KOP 37, the structures would be replaced with self-supporting lattice structures to eliminate guy wires, which would also repeat the form and lines of the existing DPV1 infrastructure (Figure 4.11-6, Appendix 7). However, despite the replacement of structure type and application of other MMs, such as dulling or coloring of structure surfaces, the Project would continue to not meet VRM class objectives, and an RMP amendment would be included.

Generally speaking, in the Project Area environment, when the viewer is less than 0.3-mile away from the Project, the structures would begin to appear larger than the surrounding landforms; the conductors and guy wires would be clearly visible; and the infrastructure would become a major modification and dominate views, and would not conform to VRM Class III objectives.

Table 4.11-1 Visual Impact Analysis and Mitigation Summary for the East Plains and Kofa Zone

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSITIVITY	VRI	VRM	CONFORM?	MITIGATION[1]	RMPA?[2]
1	Saddle Mountain Trailhead	p-01	N/A					None	No
		d-01	N/A					None	No
2	Salome Road South	p-01	N//A					None	No
		d-01	N/A					None. However, recommend matching monopoles from Delaney Substation across agricultural area – as viewed from KOPs 1 & 2 to reduce contrast between the structure types and sense of visual clutter (BMP AES-10); however, the portions viewed by KOPs are not on BLM-administered land.*	No
3	I-10 Crossing East	p-01	N/A					None.	No
4	Not Assigned								No
5	Private Residence	d-01	N/A					None	No
6	Salome Road North	p-01	N/A					None.	No
7	Snowbird West RV Park	p-01	N/A					None.	No
		p-01, p-02	N/A					None. However, in the vicinity of the crossing, for Segment p-02, recommend using self-supporting lattice structures with matching color and span lengths to match the existing DPV1 structures to reduce contrast between the structure types and sense of visual clutter (BMP AES-04); however,	No

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSITIVITY	VRI	VRM	CONFORM?	MITIGATION[1]	RMPA?[2]
								the portions viewed by KOPs are not on BLM-administered land.*	
		p-03	C	Moderate	No	III	Yes	None	No
8	I-10 Crossing West	i-01	C	Moderate	No	III	Yes*	None. However, recommend using self-supporting lattice structures with matching color and span lengths to match the existing DPV1 structures to reduce contrast between the structure types and sense of visual clutter (BMP AES-04); however, the portions viewed by KOPs are not on BLM-administered land.*	No
		x-01	C	Moderate	No	II & III	Yes	None	No
		x-02b	C	Moderate	No	II & III	Yes	None	No
9	Eagletail Mountains (Courthouse Rock)	d-01	C	Moderate	No	III	Yes	None	No
10	Palomas – Harquahala Road	p-04, p-05	C	Moderate, High, and Low	II, III, IV	III	Yes	None	No
		x-03	C	Moderate & High	III & IV	III	Yes	None	No
11	Intersection of AT&T and Connector Road	i-02	C	Moderate	IV	III	Yes	None	No
		x-03	C	Moderate & High	III & IV	III	Yes	None	No
12	Hovatter Road	x-04	C	Moderate & Low	IV	III	Yes	None	No

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSITIVITY	VRI	VRM	CONFORM?	MITIGATION[1]	RMPA?[2]
13	Kofa Wayside/Vicksburg Road	p-06	C	Low	III, IV	III	Yes	None	No
14	Kofa #1	p-06	N/A					The USFWS has stated they will not issue a ROW through the Kofa NWR ; therefore, the need for any mitigation is moot.	No
15a	Kofa #2 – Wilbanks Road	p-06	N/A						No
15b	Kofa East Pinch Point	p-06	N/A						No
16	Kofa #3	p-06	N/A						No
17	I-10 Rest Area East	i-03	C & B	Moderate	III, IV	III	Yes	None	No
		x-04	C	Moderate and Low	IV	III	Yes	None	No
18	I-10 Westbound	i-03	C & B	Moderate	III, IV	III	Yes	None	No
		x-04	C	Moderate and Low	IV	III	Yes	None	No
19	Brenda RV Park	in-01	C & B	High	II, III	III	Yes	None	No
20	Gold Nugget Road	i-04	B & C	High	II, III	III	No	Recreation impact analysis determined that an unacceptable level of impacts to OHV rider safety could occur from guys extending from the guyed V structures in areas of heavy OHV use, and mitigation specifies that structures in these areas not contain guy wires. Structures along Segment i-04 would be replaced by either self-supporting lattice or monopoles (MM-REC-02), as specified by the BLM.	Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSITIVITY	VRI	VRM	CONFORM?	MITIGATION[1]	RMPA?[2]
	Gold Nugget Road Cont.	in-01	B & C	High	II, III	III	No	Because of proximity of infrastructure to I-10 viewers and mountainous background, color treat the structures to better blend with the background. Minimize disturbance at bases (MM-VIS-01) and access-related disturbance.	Yes
59	I-10 West Crossing Eastbound	in-01	B & C - YFO	High - YFO	Unk	III	No	Disturbance at the bases of structures and along access routes should be minimized (MM-VIS-01). Newly disturbed rock areas should be surface treated to match surrounding rock to minimize color contrast (MM-VIS-03).	Yes
			Unknown – Lake Havasu	Unknown – Lake Havasu	IV	II & III	Yes		No
60	I-10 Eastbound On-ramp at Hovatter Road	i-01, i-02, i-03	C & B	Moderate	III & IV	III	Yes	None	No[3]
		x-03, i-03	C	Moderate & High	III, IV	II & III	Yes	None	No[3]
62	I-10 Westbound South of Brenda	Alt SCS	B	High	III	III	Yes	None	No
63	I-10 Eastbound South of Brenda	Alt SCS	B	High	III	III	Yes	None	No

N/A – Not Applicable; not located on BLM-administered land.
If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first.
[1]Structure changes would be required as mitigation for unacceptable impacts for other resources, with ramifications for visual resources impacts analysis.
[2]If yes, see Table 4.11-5, YFO RMP Amendment Summary by Segment, which contains descriptions of mitigative RMP amendments.
[3] An RMPA would be necessary if the existing corridor is not widened to include the portion of i-03 not in the corridor.
*Segment not located on BLM-administered land, therefore structure type to be determined by DCRT in conjunction with landowner; BLM recommendations only.

Table 4.11-2 Visual Impact Analysis and Mitigation Summary for the Quartzsite Zone

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
21	Mitchell Mine Road Residence	x-05	C & B	High	III	III & II	Yes	Recreation impact analysis determined that an unacceptable level of impacts to OHV rider safety could occur from guys extending from the guyed V structures in areas of heavy OHV use, and mitigation specifies that structures in these areas not contain guy wires. Structures along Segment x-05 would be replaced by either self-supporting lattice structures or monopoles, as specified by the BLM (MM-REC-02).	No
22	BLM Long Term Visitor Area (LTVA) #1	x-05	C & B	High	III	III & II	Yes	Same as above	No
		x-06	C & B	High	III	III, IV, & II	No	Recreation impact analysis determined that an unacceptable level of impacts to OHV rider safety could occur from guys extending from the guyed V structures in areas of heavy OHV use, and mitigation specifies that structures in these areas not contain guy wires. Structures along Segment x-06 would be replaced by either self-supporting lattice structures or monopoles, as specified by the BLM (MM-REC-02).	Yes
23	BLM LTVA #2	x-06	C & B	High	III	III, IV, & II	Yes	Same as above	No
		x-07	C	High	III	III	Yes	No, but KOP 28 for Segment x-07 does not meet and recommends matching structures to reduce contrast (MM-VIS-06).	No

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
24	RV Park Quartzsite	qs-01	C	High	III	III	Yes	None. However, recommend matching monopole structures and surface treatment (BMP AES-10).	Yes
25	Not Assigned								
26	Quartzsite Civic Event Parcel	qs-02	B & C	High	II & III	III & IV	Yes	None	Yes[3]
27	Boyer Road – Quartzsite North Side	qn-02	B & C	High	II & III	III & IV	Yes	Analysis of impacts to recreation found that guyed-V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures or monopoles would be used to eliminate guy wires (MM-REC-02).	Yes
28	SR 95 LTVA	x-07	C	High	III	III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas, such as the LTVA. Lattice H-frame structures would be used to eliminate guys and more closely match the WAPA 161kV H-frame structures, which would reduce structure contrast and visual clutter (MM-REC-02, MM-VIS-06).	Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
29	SR 95 Crossing	p-07 and p-08	B & C	High	II & III	III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures with matching color and span lengths to match the existing DPV1 structures would be used to reduce contrast between the structure types, sense of visual clutter, and eliminate guy wires (MM-REC-02, MM-VIS-06).	Yes
61	I-10 Eastbound West of Quartzsite	qs-02, i-06	B & C	High	II, III, & IV	III & IV	No	Analysis of impacts to recreation found that guyed-V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures or monopoles would be used to eliminate guy wires (MM-REC-02).	Yes
		qn-02/i-06	B & C	High	II & III	III & IV	No		Yes

N/A – Not Applicable; not located on BLM-administered land.

If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first.

[1]Structure changes would be required as mitigation for unacceptable impacts for other resources, with ramifications for visual resources impacts analysis.

[2]If yes, see Table 4.11-5, YFO RMP Amendment Summary by Segment, which contains descriptions of mitigative RMP amendments.

[3]An RMPA would be included to change to VRM Class IV the portion of Segment qs-02 west of the area of VRM Class IV and east of Segment i-06.

*Segment not located on BLM-administered land, therefore structure type to be determined by DCRT in conjunction with landowner; BLM recommendations only.

Table 4.11-3 Visual Impact Analysis and Mitigation Summary for the Copper Bottom Zone

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
30	Copper Bottom Pass Road #1	p-09, p-10	C & B	High	II, III	III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures with matching color and span lengths to match the existing DPV1 structures would be used to reduce contrast between the structure types, sense of visual clutter, and eliminate guy wires (MM-REC-02, MM-VIS-06).	Yes
31	Not Assigned								
32	Copper Canyon	p-10	B	High	II	III	No	The surface of the structures should be dulled to match or be better than surface conditions of the DPV1 structures. Surface disturbance should be minimized; therefore, structure sites should be accessed via helicopter. Newly disturbed rock areas should be surface treated to match surrounding rock to minimize color contrast (MM-VIS-03).	Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
33	Johnson Canyon	cb-02	B	High	II, III	II, III	No	Recommend no access routes be constructed to structure sites, and thus structure sites be accessed by foot or helicopter (MM-VIS-02). Recommend that disturbance at structure bases be minimized (MM-VIS-01). Consider applying surface treatments to newly exposed rock and gravel to blend with surrounding rock face and minimize visual impact of attention-attracting disturbance (MM-VIS-03). Recommend height of structures be limited to that absolutely necessary for safety and operation in order to minimize skylining (MM-VIS-04). Consider shortening span lengths and designing the route to follow the canyon route to minimize elements (conductors in particular) that would be overhead of viewers and skylined (MM-VIS-05). At a minimum, the surface of the structures should be dulled to eliminate potential for reflection, if not treated to color blend with the canyon, which could help reduce color contrast.	Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
34	Copper Bottom Alternatives Intersection	cb-01/cb-04	B	High	II, III, IV	II & III	No	At a minimum, the surface of the structures should be dulled to eliminate potential for reflection, if not treated to color blend with the mountainous backdrop, which could help reduce contrast. Disturbance at the bases of structures and along access routes should be minimized (MM-VIS-01). Limit height of structures to that absolutely necessary for safety and operation in order to minimize skylining (MM-VIS-04). Shorten span lengths and design the route to follow canyon routes to minimize elements (conductors in particular) that would be overhead of viewers and skylined (MM-VIS-05).	Yes
		cb-02/cb-04	B	High and Moderate	II, III	II, III	No	At a minimum, the surface of the structures should be dulled to eliminate potential for reflection, if not treated to color blend with the mountainous backdrop, which could help reduce contrast. Disturbance at the bases of structures and along access routes should be minimized (MM-VIS-01). Limit height of structures to that absolutely necessary for safety and operation in order to minimize skylining (MM-VIS-04). Shorten span lengths and design the route to follow canyon routes to minimize elements (conductors in particular) that would be	Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
								overhead of viewers and skylined (MM-VIS-05).	
35	Copper Bottom Pass Road #2	p-11	B	High	II, III	III	No	The surface of the structures should be dulled to match or be better than surface conditions of the DPV1 structures. Surface disturbance should be minimized; therefore, structure sites should be accessed via helicopter (MM-VIS-02). Newly disturbed rock areas should be surface treated to match surrounding rock to minimize color contrast (MM-VIS-03).	Yes
		cb-03	N/A – CRIT Lands					None. However, similar to recommendations for BLM-administered land, on CRIT lands the surface of the structures should be dulled to match or be better than surface conditions of the DPV1 structures. Surface disturbance should be minimized; therefore, structure sites should be accessed via helicopter (BMP AES-11). Newly disturbed rock areas should be surface treated to match surrounding rock to minimize color contrast (BMP AES-12).*	N/A and Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
36	Dome Rock Mountains	cb-04/cb-05	B	Moderate & High	II, III, IV	II & III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures to match the existing DPV1 structures would be used in the vicinity of Segments cb-04 and 05 (MM-REC-02, MM-VIS-06).	Yes
		cb-04/06	B	Moderate & High	II, III, IV	II & III	No		Yes
37	Ehrenberg-Cibola Road	p-13	C	Moderate	IV	III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures with matching color and span lengths to match the existing DPV1 structures to reduce contrast between the structure types, sense of visual clutter, and eliminate guy wires would be used.	Yes
		cb-05	B & C	Moderate	III, IV	II & III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self-supporting lattice structures to match the existing DPV1 structures to reduce contrast between the structure types, sense of visual clutter, and eliminate guy wires would be used (MM-REC-02, MM-VIS-06).	Yes

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
38	Ehrenberg Wash	p-12	C & B	Moderate and High	II, III, IV	III	No	Analysis of impacts to recreation found that guyed V structures pose an unacceptable human health and safety risk to OHV recreationists in heavily used recreation areas. Self supporting lattice structures would be used to match the existing DPV1 structures to reduce contrast between the structure types, sense of visual clutter, and eliminate guy wires (MM-REC-02, MM-VIS-06).	Yes
		cb-06	C & B	Moderate	IV	III	No		Yes
39	I-10 Hilltop I-10 Rest Area West	i-06	N/A					None	N/A
40	I-10 Rest Area West	i-07	N/A					None	N/A

N/A – Not Applicable; not located on BLM-administered land.

If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first.

[1]Structure changes would be required as mitigation for unacceptable impacts for other resources, with ramifications for visual resources impacts analysis.

[2]If yes, see Table 4.11-5, YFO RMP Amendment Summary by Segment, which contains descriptions of mitigative RMP amendments.

*Segment not located on BLM-administered land, therefore structure type to be determined by DCRT in conjunction with landowner; BLM recommendations only.

Table 4.11-4 Visual Impact Analysis and Mitigation Summary for the Colorado River and California Zone

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
41	Colorado River Crossing	i-08s/ca-04	N/A					None	N/A
42	Colorado River Corridor	ca-04/x-10	N/A					None	N/A
43	Riviera Drive, West Side of Colorado River	x-10, ca-01	N/A					None	N/A
44	Oxbow Road Colorado River Crossing	p-15e/w	NA					None	NA
		cb-10, x-11	N/A					None	N/A
45	McIntyre County Park	p-15e/w	N/A					None	N/A
46	Confidential – See Confidential **Appendix 3C**								
47	Appleby Elementary School	ca-05, ca-01	N/A					None	N/A
48	Miller Park	ca-05, ca-01	N/A					None	N/A
49	Intersection of Seeley and Lovekin	ca-05/ca-06	N/A					None	N/A
		p-15w	N/A					None	N/A
50	18th Avenue Houses	p-15w, ca-01, ca-05	N/A					None	N/A
51	Lovekin Private Residence	p-15w, ca-01	N/A					None	N/A
52	Intersection of I-10 and Neighbours Boulevard	ca-05, ca-06, ca-01, ca-02 p-15	N/A					None	N/A
		p-16	N/A					None	N/A
53	Ripley	p-15w, p-16, x-12, x-13	N/A					None	N/A

KOP	KOP NAME	SEGMENTS VIEWED	SCENIC QUALITY	SENSI-TIVITY	VRI	VRM	COMPLY?	MITIGATION[1]	RMPA?[2]
54	Mesa Verde Community	ca-07	B	High	II	IV	Yes		No
55	I-10 Communication Site	ca-09	B	High	II	IV	Yes		No
		p-17	B	High	II	IV	Yes		No
56	I-10 North of Colorado River Substation	ca-09	B	High	II	IV	Yes		No
		p-18	B	High	II	IV	Yes		No
57	Confidential – See Confidential Appendix 3C								
58	Not Assigned								

N/A – Not Applicable; not located on BLM-administered land.

If more than one value applies to a segment, both values are provided showing the value with the highest proportion of the segment first.

[1]Structure changes would be required as mitigation for unacceptable impacts for other resources, with ramifications for visual resources impacts analysis.

[2]If yes, see Table 4.11-5, YFO RMP Amendment Summary by Segment, which contains descriptions of mitigative RMP amendments.

*Segment not located on BLM-administered land, therefore structure type to be determined by DCRT in conjunction with landowner; BLM recommendations only.

Table 4.11-5 Summary of Visual Resource-related RMP Amendments to the Yuma RMP

SEGMENT	LENGTH	STATE AND COUNTY	PROJECT AREA ZONE	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA INCLUDED?	RMPA ANALYSIS DRIVERS	VISUAL RMPA SUMMARY
PROPOSED ACTION SEGMENTS								
p-06	35.7	Arizona, La Paz	East Plains and Kofa	III	Yes - BLM Portion	Yes (only west of Kofa NWR)	VRM class for p-06, p-07, and p-08 (KOP 29) should match for effective management of visual resources of lands west of the Kofa NWR. Travelers along the DPV1 access road would be experiencing the Project in conjunction with the. DPV1 transmission line within 0.1- to 0.25-mile, resulting in major modification and dominance	Change to VRM Class IV west of the Kofa NWR
p-07	2.1	Arizona, La Paz	Quartzsite	III	Yes	Yes		Change to VRM Class IV
p-08	0.6	Arizona, La Paz	Quartzsite	III	Yes	Yes		Change to VRM Class IV
p-09	6.9	Arizona, La Paz	Copper Bottom	III	Yes	Yes	Travelers along Copper Bottom Pass Road would be experiencing the Project in conjunction with the DPV1 transmission line within 0.1- to 0.25-mile (KOPs 30, 32, 35, 37, and 38), resulting in major modification and dominance.	Change to VRM Class IV
p-10	1.1	Arizona, La Paz	Copper Bottom	III	Yes	Yes		Change to VRM Class IV
p-11	4.1	Arizona, La Paz	Copper Bottom	III	Yes	Yes		Change to VRM Class IV
p-12	2.5	Arizona, La Paz	Copper Bottom	III	Yes	Yes		Change to VRM Class IV
p-13	3.5	Arizona, La Paz	Copper Bottom	III	Yes	Yes		Change to VRM Class IV
ALTERNATIVE SEGMENTS								
cb-01	3.2	Arizona, La Paz	Copper Bottom	II & III	Yes - Partial	Yes	Implementation of recommended MMs would not reduce contrast to the point that the segment would conform to VRM Class II and III standards (KOP 34).	Change to VRM Class III for conformance outside utility corridor within 0.3-mile either side of the centerline of segments, or in an area bounded by the viewshed where the segment would be within canyons.
cb-02	2.2	Arizona, La Paz	Copper Bottom	II & III	Yes - Partial	Yes	Implementation of recommended MMs would not reduce contrast to the point that the segment would conform to VRM Class II and III standards (KOP 33).	Change to VRM Class IV in conjunction with ROW within 0.3-mile either side of the centerline of segments, or in an area bounded by the viewshed where the segment would be within canyons, for conformance outside utility corridor; or expand existing utility corridor to contain this segment, and in conjunction with other corridor changes, change VRM to Class IV.
cb-03	4.3	Arizona, La Paz	Copper Bottom	III	Yes - Partial	Yes	Implementation of recommended MMs would not reduce contrast to the point that the segment would conform to VRM Class III standards (KOP 35).	Located partially on CRIT Reservation Change to VRM Class IV on portion on BLM-administered land within the utility corridor within the viewshed of the canyon.

SEGMENT	LENGTH	STATE AND COUNTY	PROJECT AREA ZONE	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA INCLUDED?	RMPA ANALYSIS DRIVERS	VISUAL RMPA SUMMARY
cb-04	1.9	Arizona, La Paz	Copper Bottom	II & III	No	Yes	Implementation of recommended MMs would not reduce contrast to the point that the segment would conform to VRM Class III standards (KOP 34).	Change to VRM Class IV for the area within 0.3-mile either side of the centerline of the segment, or in an area bounded by the viewshed where the segment would be within canyons.
cb-05	4.4	Arizona, La Paz	Copper Bottom	II & III	Yes - Partial	Yes	Implementation of recommended MMs would not reduce contrast to the point that the segment would conform to VRM Class III standards (KOP 36).	Change to VRM Class IV for the area within 0.3-mile either side of the centerline of the segment.
cb-06	1.9	Arizona, La Paz	Copper Bottom	III	Yes - Partial	Yes	Implementation of recommended MMs would not reduce contrast to the point that the segment would conform to VRM Class II and III standards (KOP 36).	Change to VRM Class IV for the area within 0.3-mile either side of the centerline of the segment.
i-03	19.9	Arizona, La Paz	East Plains and Kofa	III	Yes - partial	Optional for ROW	Viewers at the KOP would be 0.4-mile from the closest point along the segment (KOPs 17 & 60). Viewers in closer proximity to the segment would be few if any, as access near/along the segment is extremely limited. An RMPA would be necessary if the existing corridor is not widened to include the portion of i-03 not in the corridor.	None
i-04	10.5	Arizona, La Paz	East Plains and Kofa	III	Yes	Yes	VRM Class III objectives would not be met because viewers would only be 0.1-mile away from the Project in certain areas (KOP 20), MMs would not reduce impacts to allow for conformance, resulting in major modification and dominance.	Change the VRM to Class IV within the BLM utility corridor.
i-05	2.8	Arizona, La Paz	East Plains and Kofa	III	Yes	Yes	Viewers along I-10 would be 0.3-mile from the closest point along the segment. Viewers in closer proximity to the segment would be few, as access near/along the segment is limited. However, Segment i-05 would be changed to Class IV to conform.	Change the VRM to Class IV within the BLM utility corridor.
i-06	7.2	Arizona, La Paz	Copper Bottom	III	Yes	Yes	Viewers along I-10 would be 0.2-mile from the closest point along the segment (KOP 61).	Change the VRM to Class IV within the BLM utility corridor.
qn-02	10.8	Arizona, La Paz	Quartzsite	III & IV	Yes - partial	ROW	Viewers at KOP 27 would be 0.3-mile from the closest point of BLM-administered land along the segment. Viewers in closer proximity to the segment would be few if any, as access near/along the segment is limited.	Change to VRM Class IV 0.3-mile either side of centerline within a single-use ROW
qs-01	3.1	Arizona, La Paz	Quartzsite	III	Yes - partial	Yes	Viewers at KOP 24 would be approximately 0.2-mile from the closest point of the segment, with structures expected out outsize nearby landforms and dominate the view.	Change to VRM Class IV 0.3-mile either side of centerline within a ROW

SEGMENT	LENGTH	STATE AND COUNTY	PROJECT AREA ZONE	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA INCLUDED?	RMPA ANALYSIS DRIVERS	VISUAL RMPA SUMMARY
qs-02	4.8	Arizona, La Paz	Quartzsite	III & IV	Yes - partial	Yes	Viewers of Segment qs-02 would be viewing the Project in the context of other development and vertical elements that the Project would blend with.	Change to VRM Class IV within the BLM utility corridor.
x-06	9.2	Arizona, La Paz	Quartzsite	III, IV, II	Yes - partial	Yes	Viewers from KOP 22 would be about 700 feet from the segment, where the Project would be viewed as a major modification and dominating; MMs would not allow conformance and VRM Class III objectives would not be met.	Change to VRM Class IV 0.3-mile either side of segment centerline. Class II portions not visible from KOP 22 or 28.
x-07	7.7	Arizona, La Paz	Quartzsite	III	Yes	Yes	Implementation of MMs would not reduce contrast to the point that the segment would conform to VRM Class III standards.	Change to VRM Class IV within the BLM utility corridor.

N/A – Not Applicable; not located on BLM-administered land.

*Structure changes would be required as mitigation for unacceptable impacts for other resources, with ramifications for visual resources impacts analysis.

**Segment not located on BLM-administered land, therefore structure type to be determined by DCRT in conjunction with landowner; BLM recommendations only

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Table 4.11-6 Summary of Visual Resource-related RMP Amendments to the Lake Havasu RMP

SEGMENT	LENGTH	STATE AND COUNTY	PROJECT AREA ZONE	VRM CLASS	WITHIN UTILITY CORRIDOR?	RMPA	RMPA ANALYSIS DRIVERS	VISUAL RMPA SUMMARY
ALTERNATIVE SEGMENTS								
in-01	13.9	Arizona, La Paz	East Plains and Kofa	II & III	Yes	Yes	Viewers of the segment would range in distance of 0.4-mile to 1.3 miles from the closest point along the segment (KOPs 19 and 20). Viewers in closer proximity to the segment would be few if any, as access near/along the segment is extremely limited.	Within the BLM utility corridor, change the VRM from Class II to Class IV in the Lake Havasu RMP; change the VRM Class from III to IV in the Yuma FO.

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Appendix 5 Tabular Data Associated with Chapter 5

List of Tables

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Table 5.3-1 Tribal Consultation and Coordination to Date

DATE	TRIBE	DESCRIPTION
2/16/16	Agua Caliente Band of Cahuilla Indians Ak-Chin Indian Community Augustine Band of Cahuilla Indians Cabazon Band of Mission Indians Chemehuevi Tribe Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Hopi Tribe Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community San Manuel Band of Mission Indians Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Initial letters to tribes inviting government to government consultation on the Project, including Project description.
2/16/16	Agua Caliente Band of Cahuilla Indians	Declined to participate.
2/16/16	Ak-Chin Indian Community	Deferred to GRIC THPO. Requested continued consultation.
2/16/16	Augustine Band of Cahuilla Indians	Declined to participate. Requested continued consultation if there are discoveries.
2/16/16	Cabazon Band of Mission Indians	Declined to participate.
2/16/16	Chemehuevi Tribe	Requested continued consultation if there are discoveries.
2/16/16	Cocopah Indian Tribe	Requested consulting party status.
2/16/16	Colorado River Indian Tribes	Requested consulting party status.
2/16/16	Fort McDowell Yavapai Nation	No response.
2/16/16	Fort Mojave Indian Reservation	Requested consulting party status.
2/16/16	Gila River Indian Community	Requested consulting party status.
2/16/16	Hopi Tribe of Arizona	Requested continued consultation.
2/16/16	Morongo Band of Mission Indians	Requested continued consultation and consulting party status.

DATE	TRIBE	DESCRIPTION
2/16/16	Fort Yuma Quechan Tribe	Requested consulting party status.
2/16/16	Salt River Pima-Maricopa Indian Community	Requested consulting party status.
2/16/16	San Manuel Band of Mission Indians	Declined to participate.
2/16/16	Soboba Band of Luiseño Indians	Requested continued consultation.
2/16/16	Tohono O'odham Nation	Requested consulting party status and continued consultation.
2/16/16	Torres-Martinez Desert Cahuilla Indians	Requested consulting party status.
2/16/16	Twenty-Nine Palms Band of Mission Indians	Requested continued consultation and consulting party status.
2/16/16	Yavapai-Apache Nation	Requested consulting party status.
2/16/16	Yavapai-Prescott Indian Tribe	No response.
3/30/16	See above recipients (2/16/2016 entry)	Letter inviting tribe to attend public scoping meetings for the Ten West Link Project.
4/8/16	Morongo Band of Mission Indians	BLM Project Manager and PSFO Manager attended an in-person meeting with the Morongo Band.
5/26/16	See above recipients (2/16/2016 entry)	Letter inviting tribe to attend the Economic Strategies Workshop on 6/14/16 in Quartzsite, AZ for the Ten West Link Project.
3/13/17	Agua Caliente Band of Cahuilla Indians Augustine Band of Cahuilla Indians Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter inviting tribe to attend a Section 106 kick-off meeting in either Blythe, CA (3/23/17) or Phoenix, AZ (3/24/17).
3/16/17	See above recipients. (3/13/17 recipients)	Letter inviting the tribe to become a Cooperating Agency for the Ten West Link Project.

DATE	TRIBE	DESCRIPTION
3/16/17	Agua Caliente Band of Cahuilla Indians Augustine Band of Cahuilla Indians Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter inviting tribes to become a Cooperating Agency for the Ten West Link Project.
3/17/17	See above recipients. (3/16/17 recipients)	Letter inviting tribes to participate in a tribal field tour of Project alternatives for the Ten West Link Project.
3/23/17	Colorado River Indian Tribes	Participated in Section 106 meeting in Blythe, CA
3/24/17	Ak-Chin Indian Community Gila River Indian Community	Participated in Section 106 meeting in Phoenix, AZ
3/29/17	Agua Caliente Band of Cahuilla Indians Augustine Band of Cahuilla Indians Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter transmitting the Class I and draft Ethnographic reports to tribes and requesting feedback.
3/29/17	Ak-Chin Indian Community	Letter indicating that the tribe does not know of any cultural resources in the Project area. Please contact if any are found.

DATE	TRIBE	DESCRIPTION
3/29/17	Morongo Band of Mission Indians	PSFO Management and George Kline participated in a Project update meeting with Raymond Huaute.
4/10/17	Ak-Chin Indian Community	Letter deferring to the Tohono O'odham Nation for Project consultation.
4/14/17	Colorado River Indian Tribes	Letter from tribe requesting additional information on becoming a Cooperating Agency.
4/18/17	Colorado River Indian Tribes Fort Yuma Quechan Tribe Twenty-Nine Palms Band of Mission Indians	Sixteen members of the CRIT, three members of the Quechan tribe, and two Twenty-Nine Palms tribal members attended the first day of the field tour.
4/19/17	Colorado River Indian Tribes Fort Yuma Quechan Tribe	Eleven CRIT members and three members of the Fort Yuma Quechan Tribe attended the second day of the field tour.
5/12/17	Twenty-Nine Palms Band of Mission Indians	Letter response to BLM Class I and Ethnographic reports stating areas of sensitive cultural resources should be avoided.
5/23/17	Colorado River Indian Tribes	Letter declining participation as a Cooperating Agency for the Project. Letter also expresses tribal concerns about Class III information for Segments p-17 and p-18. The tribe provided proposed guidance for government-to-government consultation under Section 106.
6/9/17	Colorado River Indian Tribes	Letter from tribe indicating a tribal preference for in-person meetings rather than conference calls and formal letters rather than emails. The letter also requests further clarification on the BLM's decision to move forward with a PA vs. MOA.
6/15/17	Ak-Chin Indian Community Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter to tribes requesting written tribal input on the Ten West Link Project alternatives.

DATE	TRIBE	DESCRIPTION
7/11/17	Colorado River Indian Tribes	Email to tribe requesting a meeting with the tribal council in order to gain feedback on the Project alternatives.
7/13/17	Colorado River Indian Tribes	Letter to tribe in response to CRIT's 5/23/17 letter.
7/13/17	Colorado River Indian Tribes	Letter to tribe in response to CRIT's 6/9/17 letter.
7/14/17	Colorado River Indian Tribes	Letter from tribe inviting the PSFO manager to meet with the tribal council on 8/10/17.
7/18/17	Colorado River Indian Tribes	Letter to tribe accepting CRIT's 7/14/17 invitation to meet with the tribal council on 8/10/17.
7/19/17	Colorado River Indian Tribes Fort Yuma Quechan Tribe Twenty-Nine Palms Band of Mission Indians	Email to tribes inviting them to attend an 8/15/17 meeting on the viewshed analysis for the Project.
7/26/17	Colorado River Indian Tribes	Email to tribe updating acting THPO on the status of the Project and reiterating the contents of the 6/15/17 letter to the tribe requesting input on the Project alternatives.
7/27/17	Fort Yuma Quechan Tribe	Letter from tribe expressing agreement on potential indirect effects to cultural sites and the need for a Class III survey.
8/1/17	Ak-Chin Indian Community Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter to tribes providing an overview of the Project APE and identification efforts for cultural resources and historic properties that the applicant will be required to complete.
8/10/17	Colorado River Indian Tribes	Meeting with the CRIT Tribal Council and PSFO Manager to discuss Project alternatives.
8/15/17	Colorado River Indian Tribes	Letter from tribe containing summary of the 8/10/17 meeting. Letter also requested an opportunity to review the PDEIS.
8/15/17	Colorado River Indian Tribes	Letter from tribe providing CRIT's comments on the 7/19/17 draft of the PA.

DATE	TRIBE	DESCRIPTION
8/15/17	Colorado River Indian Tribes	PA writing group meeting to review comments on draft PA.
8/23/17	Colorado River Indian Tribes Fort Yuma Quechan Tribe Twenty-Nine Palms	Letter to tribes transmitting portions of the PDEIS for tribal review. Sections include Cultural Resources, Concerns of Indian Tribes, and Socioeconomics.
8/23/17	Ak-Chin Indian Community	Letter to BLM re; APE and Historic Property Identification.
8/30/17	Colorado River Indian Tribes	Letter from tribe providing additional comments on the PA to those in the 8/15/17 letter.
8/31/17	Colorado River Indian Tribes	PA writing group meeting to review comments on draft PA.
9/1/17	Ak-Chin Indian Community Cocopah Indian Tribe Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter to tribes transmitting portions of the PDEIS for tribal review. Sections include Cultural Resources, Concerns of Indian Tribes, and Socioeconomics.
9/1/17	Twenty-Nine Palms Band of Mission Indians	Letter from tribe in response to 8/1/17 letter regarding the Project APE. Letter also notes areas of concern for potential indirect effects.
9/6/17	Twenty-Nine Palms Band of Mission Indians	In-person meeting of PSFO manager with Tribal Council to discuss Project and alternatives.
9/18/17	Colorado River Indian Tribes	Letter from tribe expressing concern about sections of the PDEIS and requesting in-person meeting on 10/23/17 to discuss.
9/22/17	Twenty-Nine Palms Band of Mission Indians	Email to tribe acknowledging receipt of 9/1/17 letter.
9/26/17	Ak-Chin Indian Community	Letter from tribe acknowledging receipt of PDEIS sections for review. Tribe will await the DEIS to submit any comments. Letter reiterates that the Ak-Chin will defer to the Tohono O'odham.
10/5/17	Colorado River Indian Tribes	Letter to tribe acknowledging receipt of the tribe's 8/15/17 and 8/29/17 letters regarding the PA. A comment matrix with the BLM's responses is included for reference.

DATE	TRIBE	DESCRIPTION
10/6/17	Fort Yuma Quechan Tribe	In-person meeting with tribal cultural committee to give a general update on the Project.
10/10/17	Ak-Chin Indian Community Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter to tribes transmitting the Research Design and Work Plan for review.
10/12/17	Colorado River Indian Tribes	Letter from tribe providing comments on the 9/12/17 draft of the PA. The letter also requests that an ethnographic assessment be completed for the Project.
10/23/17	Colorado River Indian Tribes	In person meeting to discuss maps included in the PDEIS.
10/24/17	Colorado River Indian Tribes Quechan Tribe	PA writing group meeting to discuss edits to 9/12/17 version of PA.
11/1/17	Colorado River Indian Tribes	Letter responding to tribe's comments on the PA.
11/1/17	Colorado River Indian Tribes	Letter responding to tribe's comments on the PA.
11/7/17	Colorado River Indian Tribes	In person meeting to discuss documentation of the ethnographic background information.
11/9/17	Colorado River Indian Tribes	Letter containing tribe's comments on the PDEIS sections related to Cultural Resources and Native American Concerns.
11/15/17	Ak-Chin Indian Community Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community	Letter containing the 11/13/17 draft of the Project PA for review by all consulting parties and tribes.

DATE	TRIBE	DESCRIPTION
	Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	
11/27/17	Yavapai-Prescott Indian Tribe	Email request from tribe for a copy of the Draft Research Design and Work Plan.
12/1/17	Yavapai Apache Nation	Email stating tribe has no comments on the draft PA.
12/19/17	Colorado River Indian Tribes Quechan Tribe Twenty-Nine Palms Band of Mission Indians	PA writing group consulting parties meeting to review comments on the draft PA.
1/8/18	Colorado River Indian Tribes	Letter acknowledging receipt of CRIT's Government-to-Government Consultation Policy.
2/5/18	Colorado River Indian Tribes	Letter responding to tribe's 12/15/17 comments on the draft PA.
2/09/18	Colorado River Indian Tribes, Tribal Council Meeting	Meeting with Yuma Field Manager to discuss the Project, Section 106 consultation, and other related topics.
2/12/18	Quechan Tribal Council Meeting	Meeting with Yuma Field Manager to discuss the Project, Section 106 consultation, and other related topics.
2/14/18	Ak-Chin Indian Community Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Email with 2/14/18 version of draft PA for review by consulting parties.
2/21/18	Twenty-Nine Palms Band of Mission Indians, Tribal Council Meeting	Meeting with PSFO manager to discuss the Project, Section 106 consultation, and other related topics.
3/13/18	Torres Martinez Desert Cahuilla Indians	Email requesting copies of all cultural reports and to initiate government-to-government consultation.

DATE	TRIBE	DESCRIPTION
3/19/18	Ak-Chin Indian Community Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Letter asking if tribe would like to participate in Ethnographic Assessment.
3/21/18	Morongo Band of Mission Indians	Email discussion of Morongo's comments on draft PA.
3/21/18	Torres Martinez Desert Cahuilla Indians	Email response to 3/13/18 email requesting copies of reports and to initiate government-to-government consultation.
3/29/18	Morongo Band of Mission Indians	Meeting to update tribe on various energy projects, including Ten West Link.
4/11/18	Colorado River Indian Tribes	Letter responding to tribe's 3/16/18 comments on the draft PA.
4/17/18	Colorado River Indian Tribes Fort Mojave Tribe Quechan Tribe	PA writing group consulting parties meeting to review comments on draft PA.
4/20/18	Fort Yuma Quechan Tribe	Email requesting more time to consider tribe's involvement in the ethnographic assessment.
4/24/18	Colorado River Indian Tribes	Email asking for a copy of the letter indicating the CRIT's participation in Ethnographic Assessment.
5/29/18	Colorado River Indian Tribes	Letter transmitting May 2018 draft of PA that will be included in the DEIS for comment.
8/30/18	Colorado River Indian Tribes	Letter transmitting the DEIS and informing the recipient of the agency and public DEIS meetings
9/27/18	Colorado River Indian Tribes	Email confirming that BLM's project management consultant (Galileo Project, LLC) sent the CRIT a copy of the DEIS on a flashdrive.
10/1/18	Yavapai-Prescott Indian Tribe	Response from the Yavapai-Prescott Indian Tribe on the Draft EIS. The Tribe indicated that they want to be a consulting party to the Programmatic Agreement.

DATE	TRIBE	DESCRIPTION
11/5/18	Colorado River Indian Tribes	Raymond Suazo requesting a meeting with Dennis Patch of the Colorado River Indian Tribe to discuss the Project, the DEIS, and the PA.
11/7/18	Colorado River Indian Tribes	Email to discuss a date for the BLM to go to CRIT for consultation on the Project DEIS.
11/15/18	Colorado River Indian Tribes	Email discussing dates and format of a meeting between the BLM and CRIT for consultation on the Project DEIS.
11/20/18	Colorado River Indian Tribes	Confirming dates for a BLM / CRIT meeting regarding the Project DEIS in Parker, Arizona.
11/28/18	Twenty-Nine Palms Band of Mission Indians	Twenty-Nine Palms addressing 'applicant proposed measures' and BLM Best Management Practices and requested continued Section 106 consultation.
12/7/18	Colorado River Indian Tribes	Government to government consultation with CRIT tribal council discussing project, impact and mitigation regarding cultural resources, and EJ impacts and outcome.
1/25/19	Twenty-Nine Palms Band of Mission Indians	Email to Twenty-Nine Palms with transmittal of the requested Project sensitivity analysis.
2/15/19	Agua Caliente Band of Cahuilla Indians Ak-Chin Indian Community Augustine Band of Cahuilla Indians Cabazon Band of Mission Indians Chemehuevi Tribe Cocopah Indian Tribe Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe Salt River Pima-Maricopa Indian Community San Manuel Band of Mission Indians Soboba Band of Luiseno Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation Yavapai-Prescott Indian Tribe	Ethnographic Literature Review Transmittal letter.

DATE	TRIBE	DESCRIPTION
3/14/19	Ak Chin Indian Community Augustine Band of Cahuilla Indians Cocopah Indian Tribe of Arizona Colorado River Indian Tribes Fort McDowell Yavapai Nation Fort Mojave Tribe of AZ Gila River Indian Community Morongo Band of Mission Indians Fort Yuma Quechan Tribe of the Fort Yuma Indian Reservation Salt River Pima-Maricopa Indian Community Soboba Band of Luiseño Indians Tohono O'odham Nation Torres Martinez Desert Cahuilla Indians Twenty-Nine Palms Band of Mission Indians Yavapai-Apache Nation of the Camp Verde Indian Reservation Yavapai-Prescott Indian Tribe	Section 106 Consulting Parties Meeting Webinar.
3/14/19	Colorado River Indian Tribes Fort Mojave Tribe Gila River Indian Community Quechan Tribe Twenty-Nine Palms Band of Mission Indians Yavapai-Prescott Indian Tribe	PA writing group consulting parties meeting to review comments on draft PA.

Table 5.4-1 Newspaper Publications

PUBLICATION	DATE(S)
Arizona Republic	April 2, 2016 April 8, 2016 April 9, 2016
Yuma Sun	April 1, 2016 April 8, 2016
Parker Pioneer	April 6, 2016
West Valley View	April 6, 2016
Quartzsite Times	March 30, 2016 April 6, 2016
Palo Verde Times	March 30, 2016 April 6, 2016 April 8, 2016
Desert Messenger	April 6, 2016

Table 5.4-2 Arizona Agencies Invited to become a Cooperating Agency

AGENCY	AGENCY
Arizona Corporation Commission	Maricopa Association of Governments
Arizona Department of Emergency Management	Maricopa County, Arizona
Arizona Department of Environmental Quality	Maricopa County Air Quality Department
Arizona Department of Transportation	Maricopa County Department of Transportation
Arizona Department of Water Resources	Maricopa County Flood Control District
Arizona Game and Fish Department	Maricopa County Planning and Development
Arizona Governor's Office	Town of Buckeye, Arizona
Arizona Mines and Mineral Resources	Town of Gila Bend, Arizona
Arizona State Land Department	Town of Parker, Arizona
Arizona State Parks	Town of Quartzsite, Arizona
Central Arizona Project	Western Arizona Council of Governments
La Paz County, Arizona	Yuma County, Arizona
La Paz County Community Development Department	Yuma County Department of Development Services
La Paz County Enterprise Zone Commission	Yuma County Department of Public Works
La Paz County Office of Emergency Management	Yuma Metropolitan Planning Organization
La Paz County Public Works Department	

Table 5.4-3 Arizona Nongovernmental Organizations (NGOs) Consulted

NGO	NGO
Anglers United	Bouse Ghost Riders
Arizona Antelope Foundation	Center for Biological Diversity
Arizona Archaeological Society	Center for Desert Archaeology
Arizona Association for Economic Development	Central Arizona Land Trust
Arizona Association of Counties	Coalition for Sonoran Desert Protection
Arizona Association of 4-Wheel Drive Clubs	Defenders of Wildlife*
Arizona Association of Environmental Education	Desert Botanical Garden
Arizona Audubon*	Earth Resources Mining and Milling
Arizona Bighorn Sheep Society	Environment Arizona
Arizona Bowhunters Association	Friends of the Sonoran Desert National Monument
Arizona Cattle Growers Association	Great Western Trail Association, Arizona Council
Arizona Cattlemen's Association	Maricopa Audubon Society
Arizona Commerce Authority	Parker 4-Wheelers Association
Arizona Conservation Partners	People for the USA
Arizona Desert Bighorn Sheep Society	Phoenix Varmint Callers Inc.
Arizona Guided Hunts	Public Lands Foundation, Arizona Chapter
Arizona Land and Water Trust	Quartzsite Area Chamber of Commerce
Arizona Mining Association	Quartzsite Improvement Association
Arizona Native Plant Conservation	Quartzsite Roadrunner Gem and Mineral Club
Arizona Peace Trail*	Quartzsite Rock and Gem
Arizona Riparian Council	RV Lifestyles
Arizona Roamers Buggy Club	Safari Club International
Arizona Rock Products Association	Sierra Club Rincon Group
Arizona Rural Water Association	Society for Range Management, Arizona Section
Arizona Site Stewards	The Nature Conservancy
Arizona Solar Working Group*	The Sierra Club Grand Canyon Chapter
Arizona State Association of 4-WD Club	The Sonoran Institute*
Arizona Sunriders ATV Club	Tonopah Valley Association
Arizona Trail Association	Tonopah Valley Community Council
Arizona Trail Riders Association	Western Regional Partnership
Arizona Wilderness Coalition	Western Watersheds Project
Arizona Wildlife Federation	Yellownhorn Outfitters
Black Mountain Outfitters	Yuma Audubon Society
Bouse C of C	Yuma Valley Rod and Gun Club*

*submitted scoping comments

Table 5.4-4 California Agencies Invited to become a Cooperating Agency

AGENCY	AGENCY
California Colorado River Board	California Governor's Office of the Tribal Advisor
California Department of Fish and Wildlife	California Public Utilities Commission
California Department of Transportation	California State Lands Commission
California Department of Water Resources	California State Parks
California Energy Commission	California Wildlife Conservation Board
California Environmental Protection Agency	City of Blythe, California
California Fish and Game Commission	Riverside County, California
California Governor's Office	Riverside County Department of Building and Safety

Table 5.4-5 California NGOs Consulted

NGO	NGO
Agricultural Council of California	Desert Trails Coalition
American Sand Association	Desert Wildlife Unlimited
Anza Trail Foundation	Environmental Defense Fund
Backcountry Horsemen of America	Gold Prospectors of America
Blythe Chamber of Commerce	National Off-Highway Conservation Council
Blythe Riding Club – Happy Hoofers	Natural Resources Defense Council*
California Desert Coalition	Naturalists at Large
California Labor Federation	Palo Verde Valley Rod and Gun Club
California Native Plant Society	Planning and Conservation League
California Solar Energy Industries Association	Riverside County Farm Bureau
California Wilderness Coalition	Riverside Land Conservancy
Center for Biological Diversity	Sacred Sites Protection Circle
City of Blythe, California	San Diego Audubon Society
Coachella Valley Hiking Club	The Desert Protective Council Inc.
Coachella Valley Mountains Conservancy	The Desert Tortoise Council
Defenders of Wildlife	The Sierra Club San Gogonio
Desert Bicycle Club	The Wildlands Conservancy
Desert Riders Trail Fund, Inc.	Union of Concerned Scientists

*submitted scoping comments

Table 5.4-6 Other NGOs Consulted

NGO	NGO
The Wilderness Society (CO)*	Wilderness Watch (MT)
Wilderness Land Trust (CO)	Public Lands Interpretive Association (NM)
National Wildlife Federation (CO)	The Trust for Public Land (NM)
American Wind Energy Association (D.C.)	Wild Earth Guardians (NM)
Congressional Sportsmen's Foundation (D.C.)	Basin and Range Watch (NV)*
Defenders of Wildlife (D.C.)	Colorado River Commission (NV)
Society for American Archaeology (D.C.	The Fund for Animals Inc (NY)
Quality Deer Management Association (GA)	International Society for the Protection of Mustangs and Burros (SD)
Animal Welfare Institute (KY)	Colorado River Basin Salinity Control Forum (UT)
Conservation Force (LA)	National Rifle Association (VA)
National OHV Conservation Council (MI)	National Wildlife Federation (VA)
Wildlife Forever (MN)	Bowhunting Preservation Alliance (VA)
Rocky Mountain Elk Foundation (MT)	Western Lands Project (WA)

*submitted scoping comments

Table 5.4-7 DEIS Hardcopy Locations

LOCATION	ADDRESS
BLM Desert District Office	22835 Calle San Juan De Los Lagos, Moreno Valley, CA 92553
BLM Palm Springs-South Coast Field Office	1201 Bird Center Drive, Palm Springs, CA 92262
BLM Yuma Field Office	7341 E. 30th Street, Yuma AZ 85365
BLM Arizona State Office	One North Central Ave. Suite 800 Phoenix, AZ 85004
BLM California State Office	2800 Cottage Way, Suite W1623, Sacramento, CA 95825
Palo Verde Valley Library	125 W Chanslorway, Blythe CA 92225
Palm Springs Library	300 S. Sunrise Way, Palm Springs, CA 92262
Quartzsite Public Library	465 N Plymouth, Quartzsite, AZ 85346
Buckeye Public Library Downtown	310 N 6th St., Buckeye, AZ 85326
Parker Public Library	1001 Navajo Ave., Parker, AZ 85344

Table 5.6-1 BLM Staff

NAME	TITLE	RESPONSIBILITY	OFFICE
Joe Incardine	BLM National Project Manager	Project Manager	Washington (duty stationed in Salt Lake City, Utah)
Lane Cowger	Project Manager	Deputy Project Manager; Public Health and Safety	AZSO
John MacDonald	Yuma Field Office Manager	EIS Authorized Officer	YFO
Aron King	Yuma Field Office Manager	EIS Authorized Officer	YFO
Ray Suazo	State Director	RMP Amendment Authorized Officer	AZSO
Joe Stout	Acting State Director	RMP Amendment Authorized Officer	CASO
Karen Kelleher	Associate State Director	BLM Management Review	AZSO
Tom Jones	Yuma Assistant Field Office Manager	YFO Coordinator	YFO
Eddie Arreola	Supervising Manager	AZSO Team	AZSO
Douglas Herrema	Field Office Manager	PSFO Coordinator	PSFO
Mark Demaio	Project Manager	PSFO Coordinator	PSFO
Nancy Favour	NEPA & ePlanning Lead	NEPA Specialist	AZSO
Aaron Wilkerson	Soil, Water, and Air Program Lead	Air Quality and Climate Change; Water Resources (hydrology)	AZSO
Bill Werner	Biological Lead	Biological Resources; Noise related to Wildlife; Water Resources (wetlands)	AZSO
Mark Massar	Biological Lead	Biological Resources	CDDO
Jason Sutter	NPST Wildlife Biologist	Biological Resources	IDSO
Christine Fletcher	Biological Lead	Biological Resources	Washington (duty stationed in Cedar City, Utah)
Codey Carter	Wildlife Biologst	Biological Resources	BLM AZ Renewable Energy Coordination Office

NAME	TITLE	RESPONSIBILITY	OFFICE
Signa Larralde	BLM National Transmission Support Team Member	Cultural Resources Lead	Washington (duty stationed in Taos, New Mexico)
Matt Basham	Deputy Preservation Officer	Cultural Resources	AZSO
George Kline	Archaeologist	Cultural Resources	PSFO
Phil Gensler	Regional Paleontologist (NM, AZ, CA)	Paleontology	New Mexico SO
Jeff Garrett	Mining Engineer	Geology, Minerals, and Soil Resources; Paleontology	AZSO
Catherine Wolff-White	Environmental Protection Specialist	Hazards and Hazardous Materials	CO River District
Vanessa Briceno	Realty Specialist	Land Use; Agriculture; Special Designations; Wilderness (Realty)	YFO
Victoria Hernandez	Realty Specialist	Land Use; Agriculture; Special Designations; Wilderness (Realty)	PSFO
Brandon Anderson	Project Manager	Land Use; Agriculture; Special Designations; Wilderness (Realty)	PSFO
Ron Morfin	Recreation and Wilderness Specialist	Recreation; Traffic and Transportation	YFO
Michael Johnson	Social Scientist	Socioeconomics; Environmental Justice	AZSO
Brandon Colvin	Landscape Architect	Visual Resources	AZSO

Table 5.6-2 CPUC Staff

NAME	TITLE	RESPONSIBILITY	OFFICE
Eric Chiang	Project Representative	CPUC Cooperator Project Representative	San Francisco
Mary Jo Borak	Infrastructure and Permitting	CPUC Cooperator Project Representative	San Francisco
Nicholas Sher	Legal Council	CPUC Cooperator Project Representative	San Francisco

Table 5.6-3 Consultant Preparers and Contributors

NAME	TITLE	RESPONSIBILITY	OFFICE
Stantec			
Schelle Davis	Project Manager, Visual Resource Specialist	Project Manager; Visual Resources	Salt Lake City, UT
Greg Brown	Senior Principal	Deputy Project Manager	Salt Lake City, UT
Eric Clark	Project Engineer	Air Quality and Climate Change	Boise, ID
Elena Nuno	Senior Air Quality Scientist	Air Quality and Climate Change	Boise, ID
Bruce Palmer (Jacobs)	Biologist	Biological Resources	Phoenix, AZ
Glennda Luhnow (Jacobs)	Archaeologist	Cultural Resources	Phoenix, AZ
Beth Defend (Jacobs)	Project Manager	Coordination and Document Review	Phoenix, AZ
Loren Knopper	Principal	Noise; Public Health and Safety	Hamilton, ON
Stephanie Lauer	Environmental Scientist	Land Use; Agriculture; Special Designations; Wilderness; Recreation; Traffic and Transportation	Butte, MT
John Schulman	Environmental Scientist	Socioeconomics; Environmental Justice; Hazards and Hazardous Materials; Soils	Salt Lake City, UT
Josh Hohn	Senior Planner – Visual Resources Practice Lead	Visual Resources	San Francisco, CA
Karla Knoop	Project Manager	Water Resources	Salt Lake City, UT
Nick Faust	GIS Analyst	GIS, Mapping	Lynwood, WA
Jenni Prince-Mahoney	Environmental Scientist	Lead Author; Geology, Minerals, and Soil Resources; Paleontology	Salt Lake City, UT
Galileo LLC			
Ellen Hopp	Project Manager	Project Manager	Tempe, AZ
Meredith Griffin	Deputy Project Manager	Deputy Project Manager	Tempe, AZ
HDR Inc.			
Ed Liebsch	Air Quality Specialist	Air Quality and Climate Change	Minneapolis, MN
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Mark Brodbeck, RPA	Archaeologist	Cultural Resources	Phoenix, AZ
Patricia Terhaar, PG	Geologist	Geology, Mineral Resources, Soils, and Paleontology	Minneapolis, MN

NAME	TITLE	RESPONSIBILITY	OFFICE
Devin Malkin	Environmental Scientist	Hazardous Materials and Hazardous & Solid Waste	Bellevue, WA
Jerry Ellsworth, PE	Engineer	Public Health and Safety	Minneapolis, MN
Fiona Goodson	Environmental Planner	Public Health and Safety; Hazards and Hazardous Materials	Vancouver, CA
Amanda Gregory	Environmental Planner	Land Use, Agriculture, Special Designations, and Wilderness (Realty); Recreation	Houston, TX
Keith Lay	Air Quality and Noise Specialist	Noise; Air Quality and Climate Change	Irvine, CA
Tim Casey	Noise Specialist	Noise	Minneapolis, MN
Marissa Birtz	Economist	Socioeconomics; Environmental Justice	Boston, MA
Kurt Watzek	Environmental Scientist	Biological Resources; Traffic, Transportation; and Public Access	Phoenix, AZ
Wenbin Ma	Transportation Planner	Traffic and Transportation; Public Access	Walnut Creek, CA
Christine Whittaker	Landscape Architect	Visual Resources	Boise, ID
Jeff Schively, PWS	Environmental Scientist	Water Resources	Phoenix, AZ
Patti Murphy	Environmental Planner	CEQA Checklist; Cumulative Projects	Sacramento, CA
Genevieve Munsey	Environmental Planner	Wilderness	Walnut Creek, CA

Table 5.6-4 Consultant Reviewers

NAME	RESPONSIBILITY	OFFICE
Dudek		
Wendy Worthey	Project Manager	Encinitas, CA
Jennifer Reed	Air Quality and Climate Change	San Juan Capistrano, CA
Ryan Henry	Biological Resources	San Juan Capistrano, CA
Elizabeth Denniston	Cultural Resources	Pasadena, CA
Dylan Duvergé	Geology, Minerals, and Soil Resources; Paleontology; Water Resources	San Francisco, CA
Micah Hale	Cultural Resources	Encinitas, CA
Nicole Peacock	Hazards and Hazardous Materials	Encinitas, CA
Josh Saunders	Public Health and Safety; Land Use, Agriculture, Special Designations, and Wilderness; Recreation; Socioeconomics (population and housing); Traffic and Transportation; Public Access; Visual Resources	Encinitas, CA
Asher Sheppard	Public Health and Safety (EMF)	Santa Rosa, CA
Scott Eckardt	Public Health and Safety (Fire)	Auburn, CA
Mike Greene	Noise	San Juan Capistrano, CA
Brian Grattidge	Environmental Justice	Auburn, CA
Jim Harris	Flow Analysis	Portland, CA

Appendix 6 References, Acronyms, Abbreviations, Glossary, and Index

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Appendix 6 References, Acronyms, Abbreviations, Glossary, and Index

6.1 REFERENCES

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6.2 ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AAC	Arizona Administrative Code
AC	alternating current
ACC	Arizona Corporation Commission
ACEC	Area of Critical Environmental Concern
ACSR	Aluminum conductor steel-reinforced
ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
ANPL	Arizona Native Plant Law
APDES	Arizona Pollutant Discharge Elimination System
APE	Area of Potential Effect
APM	Applicant proposed measure
APS	Arizona Public Service
ARHP	Arizona Register of Historic Places
ARS	Arizona Revised Statutes
asl	Above sea level
ASLD	Arizona State Land Department
ASM	Arizona State Museum
ATC	Authority to Construct
ATCM	Airborne Toxic Control Measure
AZ	Arizona
BA	Biological Assessment
BBCS	Bird and Bat Conservation Strategy
BEA	Bureau of Economic Analysis
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	best management practice
BO	Biological Opinion
CA	California

Acronym/Abbreviation	Definition
CAA	Clean Air Act
CAISO	California Independent System Operator
Caltrans	California Departments of Transportation
CAP	Central Arizona Project
CARB	California Air Resources Board
CCD	Census county division
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CDP	Census designated place
CEA	Cumulative Effects Area
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
CIC	Compliance Inspection Contractor
CMA	Conservation and Management Action
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_{2e}	carbon dioxide equivalent
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CREZ	Competitive Renewable Energy Zones
CRHR	California Register of Historic Resources
CRIT	Colorado River Indian Tribes
CRPR	California Rare Plant Ranking
CWA	Clean Water Act
CY	Cubic yard
DCRT	DCR Transmission, LLC
DFA	development focus area

Acronym/Abbreviation	Definition
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DPV1	Devers to Palo Verde 500kV No. 1
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substance Control
E	Endangered
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMF	electromagnetic field
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESW	Economic Strategies Workshop
°F	degrees Fahrenheit
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FLPMA	Federal Land Policy and Management Act
FO	Field Office
FPS	Federally Protected Species
FUDS	Formerly Used Defense Site
GHG	greenhouse gas
GMU	Game management unit
HAPs	hazardous air pollutants
HMA	herd management area
HPTP	Historic Properties Treatment Plan
HR	Harvest restricted
HS	Highly safeguarded
I	Interstate
KOP	Key Observation Point
km	kilometers

Acronym/Abbreviation	Definition
kV	kilovolt
LR2000	Legacy Rehost 2000 System
LTVA	long term visitor area
LUPA	Land Use Plan Amendment
MAG	Maricopa Association of Governments
MBTA	Migratory Bird Treaty Act
MDAQMD	Mojave Desert Air Quality Management District
MM	mitigation measure
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per our
MSDS/SDS	Material Safety Data Sheet/Safety Data Sheet
MSL	Mean sea level
MT	metric ton
MTR	military training route
MVAR	megavolt-ampere reactive
MVCD	minimum vegetation clearance distance
MW	megawatt
N/A	Not applicable
n.d.	no date
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NCL	National Conservation Area
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NGO	non-governmental organization
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO_x	nitrogen dioxide

Acronym/Abbreviation	Definition
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSE	Nonessential experimental population
NSR	Noise Sensitive Receptor
NTP	Notice to Proceed
NWP	Nationwide Permit
NWR	National Wildlife Refuge
OHV	off-highway vehicle
OPGW	optical ground wire
PA	Programmatic Agreement
PEIS	Programmatic Environmental Impact Statement
PFYC	Potential Fossil Yield Classification
PILT	Payments in Lieu of Taxes
PL	Public law
PM_{10}	particulate matter smaller than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter smaller than 2.5 microns in aerodynamic diameter
POD	Plan of Development
PPA	Power purchase agreement
PRPA	Paleontological Resources Preservation Act
PTO	Permit to Operate
PUP	pesticide use proposal
PWA	Philip Williams & Associates
Reclamation	U.S. Bureau of Reclamation
RECS	rolled erosion control systems
RETI	Renewable Energy Transmission Initiative
RMP	Resource Management Plan
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum

Acronym/Abbreviation	Definition
ROW	right-of-way
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SA	Salvage assessed
SBR	Sequencing batch reactor
SCADA	supervisory control and data acquisition
SCE	Southern California Edison Company
SCS	series compensation station
SF_6	sulfur hexafluoride
SGCN	Species of Greatest Conservation Need
SHPA	State Historic Preservation Act (Arizona)
SHPO	State Historic Preservation Office
SLC	State Lands Commission
SO_2	sulfur dioxide
SQRU	Scenic Quality Rating Unit
SR	State Route #
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SCS	Series Compensation Station
SSURGO	Soil Survey Geographic Data Base
STATSGO	State Soil Geographic Data Base
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T	Threatened
TES	Technical Environmental Study
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Officer
US	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USFS	U.S. Forest Service

Acronym/Abbreviation	Definition
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	unexploded ordnance
VOC	volatile organic compound
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WA	Wilderness Area
WAPA	Western Area Power Administration
WECC	Western Electricity Coordinating Council
WEG	Wind erodibility group
WHA	Wildlife Habitat Area
WHB	wild horse and burro
WHMA	Wildlife Habitat Management Area
WWEC	West-wide Energy Corridor
YFO	Yuma Field Office
YPG	Yuma Proving Ground
yr	year

6.3 GLOSSARY

Activity Footprint. The area of long- and short-term ground disturbance associated with the pre-construction, construction, operation, implementation, maintenance, and decommissioning of an activity, including associated linear and non-linear components, such as staging areas, access routes and roads, gen-ties, other utility lines, borrow pits, disposal areas, etc. May also be considered synonymous with activity site, activity area, or activity boundary.

Administrative Route. A designated road, primitive road, or trail on BLM-managed public lands that is limited to BLM-authorized official use. Official use is defined in 43 CFR 8340 as, "Use by an employee, agent, or designated representative of the Federal Government or one of its contractors, in the course of his employment, agency, or representation."

Adverse visual impact. Any modification of landforms, water bodies, or vegetation, or any introduction of structures, which negatively interrupts the visual character of the landscape and disrupts the harmony of the basic elements (that is, form, line, color, and texture).

Aeolian. Pertaining to material or processes associated with transportation or deposition of soil by action of the wind.

Air Quality. A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

Alluvial. Pertaining to material or processes associated with transportation or deposition of soil and rock by flowing water (e.g., streams and rivers).

Alluvium. Soil and rock deposited by flowing water (e.g., streams and rivers); consists of unconsolidated deposits of sediment, such as silt, sand, and gravel.

Alternative. Any one of a number of options for a project.

Ambient. Surrounding, existing, background conditions.

Animal unit month (AUM). The amount of forage necessary to sustain one cow and one calf (e.g., a 1,000-pound cow and calf) for a period of one month.

Annual (ecology). A plant that completes its development in one year or one season and then dies.

Anthropogenic (climate change/global warming). Resulting from or produced by human beings.

Aquatic. Growing or living in or near the water.

Aquifer. A water-bearing rock unit (unconsolidated or bedrock) that will yield water in a usable quantity to a well or spring.

Archaeological site. A discrete location that provides physical evidence of past human use.

Archaeology. The scientific study of the life and culture of past, especially ancient, peoples, as by excavation of ancient cities, relics, artifacts, etc.

Area of Critical Environmental Concern (ACEC). A BLM designation pertaining to areas where specific management attention is needed to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish or wildlife resources, or other natural systems or processes, or to protect human life and safety from natural hazards.

Arroyo. A dry gully, or a stream in a dry region.

Artifact. Any object showing human workmanship or modification, especially from a prehistoric or historic culture.

Avoid to the Maximum Extent Practicable. A standard identified in the DRECP LUPA CMAs and applied to implementation of activities. Under this standard, impacts to identified resources are not allowed unless there is no reasonable or practicable means of avoidance that is consistent with the basic objectives of the activity. Compensation for unavoidable impacts would be required as specified in the CMAs. The term "maximum extent practicable" as used here in the DRECP LUPA is applicable only to its use in the CMAs; it does not apply to the term as it is used in the Endangered Species Act of 1973.

Backfill. The excavated material (soil and/or rock) used to refill a hole/trench created during construction activities (i.e., drilling foundation holes). The excavated material used to fill a hole/trench in the groundbed (i.e., structure foundations). The composition of the backfill varies based on the soil type at the excavation site and the component being covered.

Background (visual). That portion of the visual landscape lying from the outer limit of the middleground to infinity. Color and texture are subdued in this area, and visual sensitivity analysis here is primarily concerned with the two-dimensional shape of landforms against the sky.

Background distance zone. The visible area of a landscape that lies beyond the foreground-middleground. Visibility from 5 miles to a maximum distance of approximately 15 miles from a travel route, use area, or another observer platform. Atmospheric conditions in some areas may limit the maximum distance to approximately 8 miles or less.

Basic Elements (visual). The four major elements (form, line, color, and texture) that determine how the character of a landscape is perceived.

Baseline. The existing conditions against which impacts of the proposed action and its alternatives can be compared.

Basin. A depressed area having no surface outlet (topographic basin); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (water); a depression in the earth's surface, the lowest part often filled by a lake or pond (lake basin); a part of a river or canal widened (drainage, river, stream basin).

Best Management Practices (BMPs). Vegetative and structural methods to control erosion and sedimentation.

Big Game. Large species of wildlife that are hunted (such as elk, mule deer, and pronghorn antelope).

Biological monitoring. Visual survey of an area conducted by a designated biologist to determine if a biological resource is present. Biological monitoring is commonly conducted on the sites of proposed projects. Biological monitoring conducted during the implementation of activities is used to implement DRECP BLM LUPA CMAs that require construction setbacks or that require the designated biologist to move a biological resource out of harm's way.

Butte. A steep hill standing alone in a plain.

California Ambient Air Quality Standards (CAAQS). The allowable concentrations of air pollutants in the air specified by the State of California and established by the California Clean Air Act. The standards include the same pollutants regulated under the NAAQS and some additional pollutants, including hydrogen sulfide, sulfates, and vinyl chloride. Air quality standard setting in California commences with a critical review of all relevant peer reviewed scientific literature. The Office of Environmental Health Hazard Assessment (OEHHA) uses the review of health literature to develop a recommendation for the standard. The recommendation can be for no change or can recommend a new standard. The review, including the OEHHA recommendation, is summarized in a document called the draft Initial Statement of Reasons (ISOR), which is released for comment by the public, and also for public peer review by the Air Quality Advisory Committee (AQAC). AQAC members are appointed by the President of the University of California for their expertise in the range of subjects covered in the ISOR, including health, exposure, air quality monitoring, atmospheric chemistry and physics, and effects on plants, trees, materials, and ecosystems.

Candidate Species. A plant or animal species not yet officially listed as threatened or endangered under the Endangered Species Act, but which is undergoing status review by the U.S. Fish and Wildlife Service.

C**haracteristic landscape.** The established landscape in an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Clean Air Act of 1990. Federal legislation governing air pollution. The Clean Air Act established National Ambient Air Quality Standards for carbon monoxide, nitrogen oxide, ozone, particulate matter, sulfur dioxide, and lead. Prevention of Significant Deterioration classifications define the allowable increased levels of air quality deterioration above legally established levels and include the following:

Class I – minimal additional deterioration in air quality (certain national parks and wilderness areas)

Class II – moderate additional deterioration in air quality (most lands)

Class III – greater deterioration for planned maximum growth (industrial areas)

Clean Water Act of 1987. National environmental law enforced by the U.S. Environmental Protection Agency that regulates water pollution.

Clearance Survey. Survey for Focus and BLM Special-Status Species conducted immediately prior to vegetation and/or ground disturbance from activities, as per the CMAs. Clearance surveys must be conducted throughout the DRECP BLM LUPA Decision Area and in accordance with applicable species-specific CMAs and protocols, as approved by BLM and the applicable Wildlife Agencies, to detect and clear (i.e., remove, translocate) out of harm's way individuals of a species prior to disturbance.

Contrast (visual). Opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Contrast rating. A method of analyzing the potential visual impacts of proposed management activities.

Consulting Party under NPHA Section 106. A consulting party under Section 106 of NHPA assists the federal agency in identifying historic properties potentially affected by an undertaking, assessment of the undertaking's effects, and identifying ways to avoid, minimize, or mitigate any adverse effects to historic properties. Consultation is the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process. The following parties are entitled to participate as consulting parties during Section 106 review: Advisory Council on Historic Preservation; State Historic Preservation Officers; Federally recognized Indian tribes/THPOs; Native Hawaiian organizations; local governments; and applicants for Federal assistance, permits, licenses, and other approvals.

Cooperating Agency. Assists the lead Federal agency in developing an environmental assessment or environmental impact statement. The Council on Environmental Quality regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any Federal, state, or local government jurisdiction with such qualification may become a cooperating agency by agreement with the lead agency.

Council on Environmental Quality (CEQ). An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effort on environmental studies and advises the President on environmental matters.

Creosote Bush Rings. Rings of creosote bush (*Larrea tridentata*) that form over long periods of time. As a single creosote bush produces new branches at the periphery of its crown, the branches in the center of the crown begin to die. Eventually a sterile area of bare ground occupies the center of the original shrub, and as the ring becomes larger the original shrub segments into several shrubs (satellites), forming a ring around the point where the original shrub originated. As more time goes by these rings become elliptical rather than circular. The satellite shrubs in a ring are the same genetically, attesting to the fact that they form a single clone originating from one original shrub. Vasek (1980) showed that some of these clones are several thousand years old. The largest known creosote ring is 20.5 feet in diameter and may be 11,700 years old.

Cubic feet per second (CFS). Unit of discharge, or volume rate of flow, equal to 0.0283 cubic meters per second. As a rate of streamflow, a cubic foot of water passing a referenced section in one second. A measure of a moving volume of water.

Cultural Resources. Remains of human activity, occupation, or endeavor as reflected in districts, sites, buildings, objects, artifacts, ruins, works of art, architecture, and natural features important in human events.

Cumulative effect (or impact). As defined in the CEQ Regulations at §1508.7, the cumulative impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. These impacts may result from individually minor but collectively significant actions taking place over a period of time.

dBA. The sound pressure levels in decibels measured with a frequency weighing network corresponding to the A-scale on a standard sound level meter. The A-scale tends to suppress lower frequencies (e.g., below 1,000 Hz).

Decibel (dB). One-tenth of a Bel is a measure on a logarithmic scale that indicates the ratio between two sound powers. A ratio of 2 in power corresponds to a difference of 3 decibels between two sounds. The decibel is the basic unit of sound measure.

Designated Biologist. A biologist who is approved as qualified by BLM, and U.S. Fish and Wildlife Service (USFWS) and CDFW, as appropriate. A designated biologist is the person responsible for overseeing compliance with specific applicable DRECP BLM LUPA biological CMAs.

Developed land. For purposes of this analysis, the term “developed land” is defined to mean property that has been developed for residential, commercial, recreation, or other uses and contains the required infrastructures for those uses. This definition also includes all the required infrastructure needed for lots to be home sites and are marketed as such, including things such as roads and utilities.

Direct effect. See effect.

Discharge. Outflow of surface water in a stream or canal (water). Discharge from an industrial facility that may contain pollutants harmful to fish or animals if it is released into nearby water bodies usually requires a permit issued by the U.S. Environmental Protection Agency and is monitored.

Displacement. When one or more wildlife individual abandons a habitat because the habitat is no longer suitable, and must seek out alternative habitat, which may or may not be adjacent. If the abandonment of habitat is caused by a disturbance, wildlife individuals may or may not return to the habitat after the disturbance is no longer present.

Distance zones. A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground, middleground, and background, and is seldom seen.

Drainage. The natural or artificial removal of surface water and groundwater from a given area. Many agricultural soils need drainage to improve production or to manage water supplies.

Easement. A right afforded to a person, agency, or organization to make limited use of another's real property for access or other purposes.

Effect (impact). A modification of the existing environment as it presently exists, caused by an action (such as construction or operation of facilities). An effect may be direct, indirect, or cumulative. The terms effect and impact are synonymous under the NEPA.

A direct effect is caused by an action and occurs at the same time and same place (40 CFR 1508.8(a)).

An indirect effect is caused by the action later in time or farther removed in distance but is still reasonably foreseeable (40 CFR 1508.8(b)). Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water or other natural systems including ecosystems.

Electromagnetic field (EMF). Also called electric and magnetic fields. An electric field is the region around a conductor where a force will be experienced by an electric current or charge. A magnetic field is the region around a current where a moving charge will experience a force. Extremely low frequency EMF is the type associated with transmission lines.

Emission. Effluent discharged into the atmosphere, usually specified by mass per unit time, and considered when analyzing air quality.

Endangered Species. Species in danger of extinction throughout all or a significant portion of its range. Endangered species are rarely identified by the Secretary of the Interior in accordance with the Endangered Species Act of 1973.

Endangered Species Act (ESA) of 1973. Provides a means whereby the ecosystems upon which threatened and endangered species depend may be conserved and to provide a program for the conservation of such threatened and endangered species. The ESA requires all Federal agencies to seek to conserve threatened and endangered species, use applicable authorities in furtherance of the purposes of the ESA, and avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened and endangered or destroying or adversely modifying its designated or proposed critical habitat. The U.S. Fish and Wildlife Service is responsible for administration of this act.

Environmental Impact Statement (EIS). A document prepared to analyze the impacts on the environment of a proposed action and released to the public for review and comment. An EIS must meet the requirements of NEPA, CEQ, and the directives of the agency responsible for the proposed action.

Environmental Justice. The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies (see Executive Order 12898).

Ephemeral stream (wash, creek, waterbody). A stream or portion of a stream which flows briefly in direct response to precipitation in the immediate vicinity, and whose channel is at all times above the water table.

Erosion. The wearing away of the land surface by running water, wind, ice, or other geological agents and by such processes as “gravitation creep.”

Extremely low frequency (ELF). Invisible lines of force that you cannot feel that surround electrical equipment, power cords, wires that carry electricity, and outdoor power lines.

Federal Land Policy and Management Act of 1976 (FLPMA). Public Law 94-579 signed by the President on October 21, 1976. Established public land policy for management of lands administered by the Bureau of Land Management (BLM). FLPMA specifies several key directions for the BLM, notably: (1) management on the basis of multiple use and sustained yield; (2) land use plans prepared to guide management actions; (3) public lands for the protection, development, and enhancement of resources; (4) public lands retained in Federal ownership; and (5) public participation used in reaching management decisions.

Federal Register. Published by the Office of the Federal Register, National Archives, and Records Administration, the *Federal Register* is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.

Floodplain. The low and relatively flat areas adjacent to rivers and streams. A 100-year floodplain is that area subject to a 1 percent or greater chance of flooding in any given year.

Forage. Vegetation used for food by wildlife, particularly big game wildlife and domestic livestock.

Foreground (visual). The visible area from a viewpoint or use area out to a distance of 0.5 mile. The ability to perceive detail in a landscape is greatest in this zone.

Foreground-middleground distance zone. The area visible from a travel route, use area, or other observation platform to a minimum distance of 0 to 5 miles. The outer boundary of this zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape. Vegetation is apparent only in patterns or outline.

Forbs. Any herbaceous plant other than a grass.

Form. The mass or shape of an object or objects that appears unified, such as a vegetative opening in a forest, a cliff or mountain formation, a water tank, or a highway overpass.

Fossil. Any remains, trace, or imprint of a plant or animal that has been preserved by natural process in the earth's crust since some past geologic time.

Game Species. Animals commonly hunted for food or sport.

Gauss (G). A unit used for measuring magnetic flux density fields. Since gauss is a large measure, milligauss (mG) is more commonly used for environmental measurements. One gauss equals 1,000 milligauss, 10,000 gauss equal 1 tesla.

Geographic Information System (GIS). A system of computer hardware, software, data, people, and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information.

Geology. The science that relates to the earth, the rocks of which it is composed, and the changes that the earth has undergone or is undergoing.

Geothermal Resource. Heat found in rocks and fluids at various depths within the earth's crust that can be extracted by drilling or pumping for use as an energy source. This heat may be residual heat, friction heat, or a result of radioactive decay.

Global Warming. An increase in the average temperature of the earth's atmosphere and oceans. The term is also used to describe the theory that increasing temperatures are the result of a strengthening greenhouse effect caused primarily by manmade increases in carbon dioxide and other greenhouse gases.

Greenhouse Gases (GHGs). The warming of the earth and its atmosphere through the trapping of heat from the sun by gases, known as greenhouse gases, in the earth's atmosphere.

Groundwater. Subsurface water that fills available openings in rock or soil materials to the extent that they are considered water saturated.

Habitat. A specific set of physical conditions in a geographic area(s) that surrounds a single species, group of species, or large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

Habitat assessment. As required in LUPA-BIO CMAs. Use of the DRECP land cover mapping and/or species model(s), as well as reconnaissance-level site visits and available aerial photography for confirmation of site conditions and mapping of vegetation types and species' suitable habitat. For all activities, a habitat assessment will be required to assess site-specific vegetation types and Focus and BLM Special-Status Species.

Historic Property. Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Hydrology. The study of the movement, distribution, and quality of water throughout the earth, addresses both the hydrologic cycle and water resources.

Hydrographic basin (area, region, unit). A geographic area drained by a single major stream or an area consisting of a drainage system comprised of streams and often natural or man-made lakes. See also basin.

Impact. See effect.

Indian Tribe. An Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation, or village corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

Indirect effect. See effect.

Infrastructure. The facilities, services, and equipment needed for a community or facility to function, such as and including roads, sewers, water lines, and electric lines.

Intermittent. A river or stream that flows for a period of time, usually seasonally during rainy periods, and stops during dry periods. In arid regions, dry periods may be interrupted by occasional flash floods from brief but intense rainstorms.

Invasive Species. Describes a large number of non-native plant species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Joshua Tree Woodlands. Evenly distributed with Joshua trees at ≥1% and *Juniperus* and/or *Pinus* spp <1% absolute cover in the tree canopy (Thomas et al. 2004).

Key Observation Point (KOP). One or a series of points on a travel route or at a use area or potential use area, where the view of a management activity would be most revealing.

Kilovolt (kV). A unit of power equivalent to 1,000 volts. A volt is a measure of electrical potential difference that would cause a current of 1 ampere to flow through a conductor whose resistance is 1 ohm.

Labor Force. All persons 16 years of age or over who are either employed or unemployed and actively looking for a job.

Landform. A term used to describe the many land surfaces that exist as a result of geologic activity and weathering (e.g., plateaus, mountains, plains, and valleys).

Land Use Plan. The organized direction or management of the use of lands and their resources to best meet human needs over time, according to the land's capabilities.

Laydown Area. An area where construction material and equipment are staged during a construction operation.

Lease. An authorization or contract by which one party (lessor) conveys the use of property to another (lessee) in return for rental payments. In cases of resource production, lessees pay royalties to the lessor in addition to rental payments.

Long-term Impacts. Ground and/or vegetation disturbance that results in impacts lasting greater than 2 years.

Long-term visitor area (LTVA). LTVAs are specially designated areas on BLM lands in California and Arizona. LTVAs provide places for visitors to stay for up to 180 days between September and April.

Megawatt (MW). A unit for measuring power equal to one million watts. The productive capacity of electrical generators is measured in megawatts.

Mesa. An isolated, nearly level land mass, formed on nearly horizontal rocks, standing above the surrounding country, and bounded with steep sides.

Microphyll Woodlands. Consist of drought-deciduous, small-leaved (*microphyllus*), mostly leguminous trees. Occurs in bajadas and washes where water availability is somewhat higher than the plains occupied by creosote bush and has been called the "riparian phase" of desertscrub (Webster and Bahre 2001). Composed of the following alliances: desert willow, mesquite, smoke tree, and the blue palo verde-ironwood.

Minor Incursion. Small-scale allowable impacts to sensitive resources, as per specific CMAs, that do not individually or cumulatively compromise the conservation objectives of that resource or rise to a level of significance that warrants development and application of more rigorous CMAs or a LUPA amendment. Minor incursions may be allowed to prevent or minimize greater resource impacts from an alternative approach to the activity. Not all minor incursions are considered unavoidable impacts.

Mitigation. Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

National Ambient Air Quality Standards (NAAQS). The allowable concentrations of air pollutants in the air specified by the Federal government and established by the Clean Air Act. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

National Environmental Policy Act (NEPA) of 1969. Our nation's basic charter for protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. In accordance with NEPA, all Federal agencies must prepare a written statement on the environmental impacts of a proposed action. The provisions to ensure that Federal agencies act according to the letter and spirit of NEPA are the CEQ regulations for implementing NEPA 943 CFR 1500-1508).

National Register of Historic Places. A listing, maintained by the Secretary of the Interior, of districts, sites, buildings, structures, and objects worthy of preservation. To be eligible a property must normally be at least 50 years old, unless it has exceptional significance, and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture; and possess integrity of location, design, setting, material, workmanship, feeling, and association; and (a) be associated with events that have made a significant contribution to the broad pattern of history, (b) be associated with the lives of persons significant to our past, (c) embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction; or (d) have yielded, or may be likely to yield, information important to prehistory or history.

National Wildlife Refuge (NWR). NWR is a designation for certain protected areas managed by the U.S. Fish and Wildlife Service. NWRs are public.

Native Infrastructure. Elements of the landscape, either cultural or natural, important to Indian tribes. Elements of Native infrastructure on the landscape may include, but are not limited to, prehistoric trail networks and cultural resources sites, natural landmarks, and areas used for resource procurement.

Negligible (impact). Unless otherwise specified, "negligible" indicates impacts of such a small scale such as to be non-measurable.

Non-attainment Area. An air quality control region (or portion thereof) in which the U.S. Environmental Protection Agency has determined that ambient air concentrations exceed national ambient air quality standards for one or more criteria pollutants.

Noxious Weed. Nonnative plant species that negatively impact crops, native plant communities, and/or management of natural or agricultural systems. Noxious weeds are officially designated by a number of states and Federal agencies.

Off-highway vehicle. A vehicle specifically designed for off-highway use.

Perennial (vegetation). A plant whose root remains alive more than two years.

Perennial Stream. A stream that flows throughout the year and from source to mouth.

Physiographic province. An extensive portion of the landscape normally encompassing many hundreds of square miles, which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin such as the Basin and Range province where this Project is situated.

$PM_{2.5}$. Particulate matter less than 2.5 microns in aerodynamic diameter.

PM_{10}. Particulate matter less than 10 microns in aerodynamic diameter.

Prime Farmland. A special category of highly productive cropland that is recognized and described by the U.S. Department of Agriculture's Soil Conservation Service and receives special protection under the Surface Mining Law of 1977.

Programmatic Agreement. A document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex undertaking, or other situations in accordance with § 800.14(b) of the NHPA.

Project Area. The area of land which the project would encompass.

Protocol survey. Species-specific surveys that are conducted under a protocol that has been adopted by the Wildlife Agency(ies) or is otherwise scientifically accepted for determining the occupancy or presence and absence of Covered Species. These surveys would be required as specified in the species-specific CMAs in the DRECP BLM LUPA.

Public Land. Land or interest in land owned by the United States and administered through agencies such as the BLM and USBR without regard to how the United States acquired ownership, except lands on the Outer Continental Shelf, and land held in trust for the benefit of American Indians, Aleuts, and Eskimos.

Radio frequency. Electromagnetic energy in the approximate frequency range of 3,000 Hz (3 kHz) to 1 billion Hz (l gHz).

Range. A large, open area of land over which livestock can wander and graze.

Raptor. A bird of prey (e.g., eagles, hawks, falcons, and owls).

Reclamation. Restoration of land disturbed by natural or human activity (e.g., mining, pipeline construction) to original contour, use, or condition. Also describes the return of land to alternative uses that may, under certain circumstance, be different from those prior to disturbance.

Recontouring. Return a land surface to or near to its original form through earth-moving equipment such as front-end loaders, backhoes, hand rakes, hoes, shovels, etc.

Record of Decision. A document separate from but associated with an EIS that publicly and officially discloses the responsible official's decision on a proposed action.

Revegetation. The reestablishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as reseeding.

Right-of-way. Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, such as a road or utility.

Riparian. Situated on or pertaining to the bank of a river, stream, or other body of water. Riparian is normally used to refer to plants of all types that grow along streams, rivers, or at spring and seep sites.

Resource Management Plan. Document that establishes direction for the use of resources to best meet the needs of humans over time, according to the resource potential or capability.

Resource setback. A minimal horizontal distance required for construction activities from a particular biological resource.

Scoping. Procedures by which agencies determine the extent of analysis necessary for a proposed action (i.e., the range of actions, alternatives, and impacts to be addressed; identification of significant issues related to a proposed action; and the depth of environmental analysis, data, and task assignments needed).

Sediment. Solid fragmental material, either mineral or organic, that is transported or deposited by air, water, gravity, or ice.

Sedimentation. The result when soil or mineral is transported by moving water, wind, gravity, or glaciers and deposited in streams or other bodies of water, or on land. Also, letting solids settle out of wastewater by gravity during treatment.

Sensitive Species. Those plant or animal species that are susceptible or vulnerable to activity impacts or habitat alterations.

Setback. A defined distance, usually expressed in feet or miles, from a resource feature (such as the edge of a vegetation type or an occupied nest) within which an activity would not occur; otherwise often referred to as a buffer. The purpose of the setback is to maintain the function and value of the biological resource features identified in the DRECP BLM LUPA CMAs. See Section II.3.4.2.1 for a summary of setbacks incorporated in the CMAs.

Scenic quality. Scenic quality is a measure of the visual appeal of a tract of land. In the visual resource inventory process, public lands are given an A, B, or C rating based on the apparent scenic quality that is determined using seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications.

Sensitivity level. Sensitivity levels are a measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern including type of use, amount of use, public interest, adjacent land uses, special areas, and other factors.

Short-term Impacts. Ground and/or vegetation impacts that result in effects lasting 2 years or less.

Significant Impact Level (SIL). The SIL is a de minimis threshold applied to individual facilities that apply for a permit to emit a regulated pollutant in an area that meets the NAAQS. The state and EPA must determine if emissions from that facility will cause the air quality to worsen. The SIL is a measure of whether a source may cause or contribute to a violation of PSD increment or the NAAQS, i.e. a significant deterioration of air quality.

Simulation. A realistic visual portrayal that demonstrates the perceivable changes in landscape features caused by a proposed management activity. This is done using photography, artwork, computer graphics, and other such techniques.

Special Recreation Management Area (SRMA). SRMAs are areas officially designated by statute or Secretarial order, including components of the National Trails System, the National Wild and Scenic Rivers System, the National Wilderness System, National Conservation Areas, National Monuments or National Recreation Areas, an area covered by joint agreement between the BLM and a state government, or any area where the authorized officer determines that the resources require special management and control measures for their protection, and where a permit system for individual use would achieve management objectives.

Special Status Species. Wildlife and plant species either Federally listed or proposed for listing as endangered or threatened; state-listed; or priority species of concern to Federal agencies or tribes.

Substation. A facility where electrical voltage is either increased or decreased through the use of transformers; electric lines are interconnected at one or more voltage; and electric power is metered and regulated to provide safe and stable voltage for end-use customers.

Suitable habitat. In general, Focus and BLM Special-Status Species habitat consisting of land within a species range that has—in the case of wildlife, breeding and foraging habitat characteristics required by the species, or in the case of plants, vegetation and microhabitat characteristics—consistent with known or likely occurrences, as determined by the habitat assessment. In the California Desert Conservation Framework modeled habitat as determined by species distribution models and confirmed or refined (i.e., expanded or reduced) by activity- level habitat assessment and that require site-specific protocol or presence/absence surveys as specified in the species-specific DRECP BLM LUPA CMAs.

Texture. The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

Threatened Species. Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Traditional Cultural Property. A Traditional Cultural Property (TCP), as defined in the NHPA, is a property that is eligible for inclusion on the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. Stated another way, a significant TCP is defined as a property with significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.

Transportation Corridor. A BLM- designated corridor that would reduce resource impacts while allowing for linear ROWs for development of new transportation routes or expansion of existing roads within the designated corridor. However, corridor designation does not automatically result in authorization of requested ROWs within the corridor. Each requested ROW would require environmental analysis and evaluation of compatibility of the proposed ROW with any existing ROWs within the corridor.

Tribal Land. All lands within the exterior boundaries of any Indian reservation and all dependent Indian communities.

Unavoidable impacts to resources. Small-scale impacts to sensitive resources, as allowed per specific CMAs, that may occur even after such impacts have been avoided to the maximum extent practicable (see definition). Unavoidable impacts are limited to minor incursions (see definition), such as a necessary road or pipeline extension across a sensitive resource required to serve an activity.

Undertaking. A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval of a Federal agency.

Undeveloped Land. For purposes of this analysis, the term "undeveloped land" is defined to mean land that does not have existing residential or commercial buildings, facilities, or uses. Undeveloped land may be private lands that are part of a master planned community that is not yet fully developed to include residential or commercial facilities or uses, and may be in varying stages of planning or preparation for development.

Utility Corridor. Designated through land use planning to promote compatible, systematic, and predictable development on Federal lands to expedite permitting and reduce impacts to natural, economic and cultural resources from linear ROWs. However, corridor designation does not automatically result in authorization of requested ROWs within the corridor. Each requested ROW would require environmental analysis and evaluation of compatibility of the proposed ROW with any existing ROWs within the corridor.

Vegetation communities. Species of plants that commonly live together in the same region or ecotone.

Viewing platform. A point such as a scenic overlook, or route such as a highway or trail where observers would be viewing the surrounding landscape.

Viewshed. Visible portion of the specific landscape seen from a specific viewpoint, normally limited by landform, vegetation, distance, and existing cultural modifications.

Visibility. The distance to which an observer can distinguish objects from their background. The determinants of visibility include the characteristics of the target object (shape, size, color, pattern), the angle and intensity of sunlight, the observer's eyesight, and any screening present between the viewer and the object (i.e., vegetation, landform, even pollution such as regional haze).

Visual quality. The relative worth of a landscape from a visual perception point of view.

Visual resource. The visible physical features on a landscape (for example, land, water, vegetation, animals, structures, and other features).

Visual resource inventory. A BLM inventory tool that portrays the relative value of the existing visual resources of an area.

Visual resource management classes. Four management categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape.

VRM Class I Objective - The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II Objective - The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

VRM Class III Objective - The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM Class IV Objective - The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Waters of the United States (WOUS). All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce including adjacent wetlands and tributaries to water of the United States; and all waters by which the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce.

Watershed. Drainage basin for which surface water flows to a single point.

Wetlands. Areas inundated by surface water or groundwater with a frequency sufficient to support vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wilderness. An area formally designated by Congress as part of the National Wilderness Preservation System.

Wilderness Area (WA). WAs are designated under the Wilderness Act. They generally do not allow motorized equipment, motor vehicles, mechanical transport, temporary roads, or permanent structures or installations (with exceptions in Alaska). WAs are to be primarily affected by the forces of nature, although the Act does acknowledge the need to provide for human health and safety, protect private property, control insect infestations, and fight fires in the area.

6.4 INDEX

Appendix 8 Public Comments and Responses on the DEIS

Table of Contents

List of Tables

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8.0 DEIS COMMENTS AND RESPONSES

8.1 INTRODUCTION

This chapter provides public comments received by the BLM in response to publication of the DEIS, and the BLM's responses to those comments. The information contained in this chapter did not exist in the DEIS.

The comment period for the DEIS commenced with the publication of the NOA in the *Federal Register* on August 28, 2018 and ended on November 28, 2018.

A total of 50 comment letters and emails were received. All comments on the DEIS that were received, were read, and given careful consideration, with necessary changes incorporated into this FEIS.

8.2 RESPONSE TO COMMENTS

In responding to comments, every effort was made to address all questions, concerns, and other points presented by the commenter. Table 8.1-1 presents all of the specific comments that were received on the DEIS. It includes the comment letter number, commenter name, the comment type, the specific comment, and the BLM's response to the comment. Information contained in comment letters that had no specific relevance to the analysis in the DEIS is not included in Table 8.1-1. Copies of the comment letters in their entirety are included in the Project administrative record.

Not all comments in Table 8.1-1 resulted in text changes that appear in the FEIS. The "Response" provided by BLM, in many cases, refers to information already contained in the DEIS, or provides an explanation and/or clarification as to why a text change to the document was not required.

The following is a list of comment type codes that were used to indicate each comment's associated resource or concern.

AQ	Air Quality Concern
AG	Agricultural Concern
AIRP	Airport Concern
AR	Access Routes Concern
CE	Cumulative Effects Concern
CEQA	CEQA Concern
CLIM	Climate Change Concern
CONST	Construction Concern
CUL	Cultural Resources Concern
DATA	Data Concern
EJ	Environmental Justice Concern

GEN	General Concern
GEO	Geology & Minerals Concern
GHG/CC	Greenhouse Gas/Climate Change Concern
I10	Supports route along I10 without indicating which side (north or south)
INFO	Information Request
KOFA	Kofa NWR Concern
LAW	Legal Concern
LU	Land Use Concern
LWC	Lands with Wilderness Characteristics Concern
M&M	Mitigation and Monitoring Concern
MTR	Military Training Route Concern
NA	Native American Consultation
NEPA	NEPA Concern
NOISE	Noise Concern
OHV	Off Road Vehicle Recreation Concern
OOS	Out of Scope
OPP ALT 1	Opposes Alternative 1
OPP ALT 2	Opposes Alternative 2
OPP ALT 3	Opposes Alternative 3
OPP ALT 4	Opposes Alternative 4
OPP ALTS	Opposes All Alternatives
OPP FL	Opposes Use of Federal Lands
OPP MUC	Opposes Multi-use Corridor
OPP PA	Opposes Proposed Action
OPP PRF	Opposes Preferred Alternative
OPP RMPA	Opposes RMP Amendment
OPP SAR	Opposes Sub-alternative Route
OPP UR	Opposes Unidentified Route
PROG	Programmatic Agreement Concern
PERM	Permit Concern
PI	Public Input Concern
PH&S	Public Health & Safety Concern
PLAN	Management Plans and Guidance Concern

P&N	Purpose and Need Concern
RAN	Range Concern
REC	Recreation Concern
RENE	Renewable Energy Concern
RIP	Riparian Concern
RMPA	RMP Amendment Concern
RNA	Recommends a New Alternative
ROUTE	Route Concern
ROW	Rights-of-way Concern
SDA	Supports a Dismissed Alternative
SOC	Socioeconomics Concern
SOIL	Soils Concern
SRMA	Special Recreation Management Area Concern
SSS	Special Status Species Concern
SUP DUC	Supports Use of Designated Utility Corridor
SUP NA	Supports No Action
SUP PA	Supports Proposed Action
SUP PRF	Supports Preferred Alt
SUP PRO	Supports Project, General
SUP UR	Supports Unidentified Route
TRAN	Transportation Concern
UC	Content Unrelated to Analysis
VEG	Vegetation Concern
VIS	Visual Resources Concern
WLF	Wildlife Concern
WOUS	Wetlands and Waters of the US
WTR	Water Concern
YPG	Yuma Proving Ground Concern

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Table 8.1-1 Public Comment Response Matrix

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
1	1	Jean Public	1.1	LU	This is national land. This plan is to expropriate land owned by 328 million Americans and put up this horrific transmission line primarily for the use of all the Hispanics unlawful sneaks who flood to this Maricopa area…	Federal lands would be part of the route. See Sections 1.2.2 and 1.3 for the Applicant's project objectives and BLM's purpose and need, respectively.
1	1	Jean Public	1.2	UC	We believe joe Arpaio that there is high infestation of such non americans flooding this area and that this line is only necessary because of this high infestation of people who unlawfully are in the usa. They don't belong here. We should not be using national land so that these foreigners can get electricity. They should be in their own country.	Comment unrelated to Project.
1	1	Jean Public	1.3	OPP FL	Let the transmission company find private land to buy to use. We don't want our national land used for this purpose.	Comment unrelated to Project.
1	1	Jean Public	1.4	UC	We want an America that has a lawful immigration policy, not one flooded by illegal criminal and other foreign sneaks. You should not be able to sneak unlawfully into a country that has laws set out for how to enter this country. We need a lawful country and letting in those who don't obey the law is wrong, totally wrong. This comment is for the public record. No transmission line should be approved. It will not be for americans. It will be for an area that is used as illegal immigration territory. I don't see our national land being used for the purposes this comment is for the public record. Please receipt.	Comment unrelated to Project.
2	1	Alan J. De Salvio, Deputy Director, Mojave Desert Operations, **MDAQMD**	2.1	AQ	The District has reviewed the DEIS/EIR and concurs with the findings and actions stated in Applicant Proposed Measures (APMs) AIR-01 through AIR-05.	Comment noted. For clarification, this document is not a joint EIS/EIR.
2	1	Alan J. De Salvio, Deputy Director, Mojave Desert Operations, **MDAQMD**	2.2	AQ	The District also recommends the project require that that the following dust mitigation measures be required for the construction of the expansion (enforceable by the District AND by the land use agency): Prepare and submit to the MDAQMD, prior to commencing earth-moving activity, a dust control plan that describes all applicable dust control measures that will be implemented at the project. The most current Dust Control Plan Requirements and Dust Control Plan Submission Form are available at http://mdimrnd.ca.gov/permitting/cornpliance-fonns.;	The dust control plan will be submitted for review and approval to the MDAQMD. The fugitive dust control plan is in Appendix 2B.
2	1	Alan J. De Salvio, Deputy Director, Mojave Desert Operations, **MDAQMD**	2.3	AQ	The following signage shall be erected not later than the commencement of construction: A minimum 48 inch high by 96 inch wide sign containing the following shall be located within 50 feet of each project site entrance, meeting the specified minimum text height, black text on white background, on one inch A/C laminated plywood board, with the lower edge between six and seven feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day: "[Site Name] {four inch text} [Project Name/Project Number] {four inch text} IF YOU SEE DUST COMING FROM {four inch text} THIS PROJECT CALL: {four inch text} [Contact Name], PHONE NUMBER XXX-XXXX {six inch text} If you do not receive a response, Please Call {three inch text} The MDAQMD at 1-800-635-4617 {three inch text}"	The language has been added to the EIS and CEQA Appendix and is included in the Fugitive Dust Control Plan (Appendix 2B) for the part of the Project Area that is in Riverside County, California.

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2	1	Alan J. De Salvio, Deputy Director, Mojave Desert Operations, **MDAQMD**	2.4	AQ	Use a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes to minimize visible fugitive dust emissions. For projects with exposed sand or fines deposits (and for projects that expose such soils through earthmoving), chemical stabilization or covering with a stabilizing layer of gravel will be required to eliminate visible dust/sand from sand/fines deposits.	Appendix 2A, AQ-01 includes these dust control measures. The language has been added to the EIS and CEQA Appendix and is included in the Fugitive Dust Control Plan (Appendix 2B).
2	1	Alan J. De Salvio, Deputy Director, Mojave Desert Operations, **MDAQMD**	2.5	AQ	All perimeter fencing shall be wind fencing or the equivalent, to a minimum of four feet of height or the top of all perimeter fencing. The owner/operator shall maintain the wind fencing as needed to keep it intact and remove windblown dropout. This wind fencing requirement may be superseded by local ordinance, rule or project-specific biological mitigation prohibiting wind fencing.	The language has been added to the EIS and CEQA Appendix and is included in the Fugitive Dust Control Plan (Appendix 2B).
2	1	Alan J. De Salvio, Deputy Director, Mojave Desert Operations, **MDAQMD**	2.6	AQ	All maintenance and access vehicular roads and parking areas shall be stabilized with chemical, gravel or asphaltic pavement sufficient to eliminate visible fugitive dust from vehicular travel and wind erosion. Take actions to prevent project-related trackout onto paved surfaces, and clean any project-related trackout within 24 hours. All other earthen surfaces within the project area shall be stabilized by natural or irrigated vegetation, compaction, chemical or other means sufficient to prohibit visible fugitive dust from wind erosion.	Appendix 2A, AQ-01 includes these dust control measures. The language has been added to the EIS and CEQA Appendix and is included in the Fugitive Dust Control Plan (Appendix 2B).
3	1	Mary-Ellen Walsh, Cultural Resources Compliance Manager, **Arizona State Historic Preservation Office**	3.1	CUL	1. SHPO Guidance Point # 5 says new survey is recommended if the survey is 10 years or older if: a) field methods do not meet current professional standards; or b) there may be structures or buildings that are now historical in age; or c) changes in landform due to pedogenic processes would result in the visibility of previously buried cultural resources.	Comment noted. The BLM conducted a Class I inventory of all routes included in the DEIS, with a 1-mile buffer analysis area. The Class I inventory, as part of their methodological approach, evaluated all previous studies and surveys in accordance with SHPO Guidance Point # 5.
3	1	Mary-Ellen Walsh, Cultural Resources Compliance Manager, **Arizona State Historic Preservation Office**	3.2	CUL	2. We also recommend that, in areas where no new survey is necessary, previously recorded sites should be revisited (depending on pedogenic processes) to assess condition and reevaluate Register eligibility.	This is also a stipulation in BLM Cultural Resource Use Permits.
4	1	Don Rerick, Manager, Planning and Project Management Division, **Flood Control District of Maricopa County**	4.1	WTR	Thank you for the project maps. I have reviewed them and have found that the proposed alignment west of Tonopah, AZ may have the potential for impacting one of our Flood Control structures, the Harquahala FRS (Flood Retarding Structure) a.k.a. a dam. I have attached one of your maps showing this area along with a Maricopa County map that shows the same area. To provide you with some geographic reference for the two maps: On your attached map; 1. As the alignment moves north and then west from the Delaney Substation, the alignment travels along the CAP Canal alignment. 2. To the north of the alignment you will see the Big Horn Mountains Wilderness area, and to the west the Salome Hwy alignment. On the attached county map; 1. You will see the same geographic references; the wilderness and the highway. 2. You will notice between these two features the CAP Canal alignment, and adjacent and	Comment noted. The selected Project Alternative would be required to span the Harquahala FRS, or any other such feature. BMP MISC-07 (Appendix 2A) states that “project structures would be located to avoid sensitive infrastructure.

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					parallel to the canal you will see the alignment for the Harquahala FRS structure, an earthen dam. It is this flood control dam that you should be aware of as you develop any alignments for the transmission corridor.	
5	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	5.1	LWC	I've been reviewing the DEIS and am having trouble making sense of the descriptions of potential impacts to lands with wilderness characteristics as well as the map in Figure 3.2-3 in Appendix 7. After comparing with LWC maps from the underlying RMPs, I think there is something off with some of the symbology and legend in Figure 3.2-3.	The wrong figure was included in the DEIS as Figure 3.2-3. A correct Figure 3.2-3 has been included in the FEIS and represents the mapping and data used as a part of the DEIS analysis. The text in Section 4.2.5.3 has been clarified.
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.1	LWC	Did BLM do new LWC inventory as part of this EIS?	Yes. The study team conducted a stepwise evaluation of the Project study area using GIS software to determine which lands potentially meet LWC criteria, and to specify a subset of these lands for field examination. The primary information sources used for this screening evaluation included BLM route GIS data, BLM GIS data for prior inventory of LWC, citizen-provided GIS data (The Wilderness Society), U.S. Census road inventory data, and 2014 aerial imagery.
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.2	LWC	Are the LWC polygons shown in purple crosshatching on the new Figure3.2-3 the units that BLM found to have LWC as part of that new inventory?	The FEIS Figure 3.2-3 that will replace the DEIS Figure 3.2-3 identifies six LWC polygons in purple cross-hatch; these are the updated BLM LWC polygons (see response to Comment 6.1).
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.3	LWC	Can you share the inventory reports, both for units found to have LWC and units not found to have LWC?	The inventory reports were provided per this request on 11/7/18.
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.4	LWC	Based on the new Figure 3.2-3, it appears that BLM's preferred alternative would not intersect LWC, is that correct?	The Preferred Alternative includes Segment p-09, which would intersect LWC Polygon 23. However, the intersection of Segment p-09 would only reduce the polygon by approximately 9 acres, and would not result in reducing Polygon 23 below the 5,000-acre requirement to qualify as LWC. Therefore, Segment p-09 would have negligible direct impacts on LWC Polygon 23. See Response to Comment 6.6 for further information about impacts to LWC.
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.5	LWC	It looks like segment i-04 runs along the edge of LWC unit 14, but doesn't intersect it? It looks like segment x-05 runs along the edge of LWC unit 13, but doesn't intersect it?	Correct for both – according to Table 3.11-3 of the TES, the study area for Segment i-04 includes a portion of LWC polygons 14 and 34, but neither polygon is bisected by Segment i-04. According to Table 3.11-4 (Appendix 3), the study area for Segment x-05 includes a portion of LWC polygon 13, but the polygon is not bisected by Segment x-05.
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.6	LWC	As described in the DEIS on p. 4-6, the only route segment that would intersect an LWC unit is qn-02 (intersecting LWC unit 35_SW), but that route segment is not part of the BLM-preferred alternative. Correct?	DEIS page 4-6 is not fully correct, but also note that page 4-6 does not specifically identify Segment qn-02. The following segments would intersect (bisect) an LWC polygon: in-01 (polygon 34), qn-02 (polygon 35_SW), p-09 (polygon 23 [this one may be within GIS margin of error, but it is being evaluated as correct]), cb-01 (polygon 23), cb-02 (polygon 23), and cb-04 (polygon 23). Of these, cb-01, cb-02, and cb-04 would result in polygon 23 being reduced to below the 5,000-acre LWC criteria, and thus making the polygon ineligible for LWC designation. None of these three segments (cb-01, -02, or -04) are part of the BLM Preferred Alternative. Section 4.2.5.3 of

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						the FEIS has been revised to clarify and correct the information.
6	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	6.7	LWC	Less important, but in the old Figure 3.2-3, do you know what the polygons with green hashing angling down to the left (the majority of the polygons shown on the map) are?	In the old Figure 3.2-3 the green-hashed polygons are the citizen-provided data from The Wilderness Society.
7	1	Mark Cunningham, **IBEW Local 769**	7.1	SUP PRO	I am very much in support of this project.	Comment noted.
7	1	Mark Cunningham, **IBEW Local 769**	7.2	Socio	I represent workers who do the construction of these type [of] transmission line. We would employ approximately 160 IBEW workers from AZ on this project.	Comment noted. The Socioeconomics section discloses potential employment effects.
7	1	Mark Cunningham, **IBEW Local 769**	7.3	Socio	The line would also help improve the current electrical grid. Power would be able to travel to and from AZ to CA CA to AZ when the peak demand was needed.	Comment noted.
8	1	Julie Kroepel	8.1	WTR	Has the flood plain issue been address[ed] with the construction of Ten West particularly in the Harquahala Valley area west of Tonopah south of I-10? Having land in this area I was made aware of the floodplain there and I know that there are other flood plain areas between Tonopah and California border. Won't this impact the running of lines or cables?	Floodplains were analyzed in detail in the TES (Section 4.19). The average span between transmission line poles would be 1,200 feet. For the various alternative routes, floodplains would likely be able to be spanned and thus avoided. Final design would emphasize avoidance of floodplains for structure locations. Whether avoided or not, compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act would ensure that any physical alterations of floodplains would be mitigated to ensure their continuing functioning.
9	1	Travis Odle	9.1	SUP PRO	I'm for the Project brings jobs and needed energy resource.	Comment noted.
10	1	Ron Riffe	10.1	SUP PRF	Please use the Preferred	Comment noted.
10	1	Ron Riffe	10.2	REC	[the preferred alternative] will not [impact] the Arizona Peace Trail.	As noted in Tables 2-10 and 2-13, the Agency Preferred Alternative would have similar negligible to moderate impacts as the Proposed Action to the Arizona Peace Trail.
11	1	[Carol] Lynn Stimson	11.1	SUP PRF	I'm agreed with your preferred alternative.	Comment noted.
12	1	Bruce Fenske, Arizona Department of Transportation	12.1	LU	As a reminder (because I have made this comment before), Ten West will require an encroachment permit from ADOT for each location where it wishes to cross I-10 and US 95 in Arizona. Ten West should be aware of this due to previous comments at public/agency meetings and in a meeting held at our office in Yuma.	Comment noted. Table 1.5-2 lists the permits that would be required.
13	1	Jim Schwarz	13.1	Socio, LU	How will any of these proposed routes affect our real property?	Impacts to property values are discussed in Section 4.9 of the DEIS, and in Section 4.15 Socioeconomics, 4.16 Environmental Justice, and 4.8 Land Use in the TES. Short-term negligible impacts to property values under all alignments are anticipated.
14	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	14.1	LWC	Does the TWL preferred alternative crosses any lands with wilderness characteristics identified in the inventory we performed for Ten West.	See response to comment 6.5.

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14	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	14.2	LWC	Requested shapefiles for all project alternatives.	Shapefiles were provided.
14	1	Alex Daue, Assistant Director, Energy & Climate, **The Wilderness Society**	14.3	LWC	Requested a copy of the actual wilderness inventory completed by HDR.	Most recent version of the LWC inventory report was provided.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.1	KOFA	Avoiding the Kofa National Wildlife Refuge (NWR): BLM should not approve a route for Ten West Link through the Kofa NWR because of the sensitive and valuable wildlife habitat and other resources there. The Kofa NWR provides habitat for nearly 200 species of birds, 49 species of mammals, 41 species of reptiles and amphibians, and many species of plants. The habitat types of the Kofa NWR are fragile and unique in the country; consequently, Kofa continues to be an essential landscape for desert bighorn sheep and other species of interest, including desert tortoise, Gila monster, Colorado Desert Fringe toed Lizard, Golden Eagle, LeConte's Thrasher, Gray Vireo, California leaf-nosed bat, peregrine falcon, and Kofa Mountain barberry.	Comment noted.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.2	SUP PRF	We appreciate that BLM's preferred alternative route, described in the DEIS as modified Alternative 2, avoids the Kofa NWR. If BLM approves Ten West Link, we support BLM selecting modified Alternative 2 or another alternative that avoids the Kofa NWR in the Final EIS and Record of Decision (ROD).	Comment noted.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**),	15.3	KOFA	U.S. Fish and Wildlife Service (USFWS) determination: As stated in the DEIS, "The USFWS determined that the Project would not be an appropriate use within the Kofa NWR on January 26, 2017, and therefore the USFWS cannot authorize a ROW for the Project across the Kofa NWR (USFWS 2017) (Appendix 1A)." DEIS p. 1-5. Beyond making it clear that the USFWS will not authorize a ROW for Ten West Link through the Kofa NWR, this determination	The route through the Kofa NWR was part of the Proponent's Proposed Action. The BLM must analyze the impacts of the route as proposed by the Proponent; therefore, this route is considered in the EIS.

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		Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)			underscores the fact that BLM and the project developer should abandon consideration of any routes that intersect with the Kofa NWR. We further note that the DEIS identifies significant and unacceptable impacts to the Kofa NWR and its mission associated with the originally proposed alternative, including: "[the Kofa route] segment is almost 36 miles long and follows the existing DPV1 line and corridor with approximately 25 miles crossing the Kofa NWR. Construction along this segment has the potential to alter habitats of various special status species including Gila monster, elf owl, gilded flicker, LeConte's thrasher, and Lucy's warbler. The portion of this segment near and through the Kofa NWR has the potential to disrupt desert bighorn sheep movement and habitat use, as well as impact good quality habitat for the Sonoran desert tortoise, and disturb golden eagles... The route crosses between the Livingston Hills and New Water Mountains, an identified desert bighorn sheep dispersal corridor, temporarily disrupting movement for forage. This segment... [is] within the designated experimental nonessential population area for the Sonoran pronghorn.... Sonoran pronghorn may avoid the area during construction, thereby disrupting natural movement patterns, and forage habitat would be lost in the short term until construction areas are revegetated. Construction activities associated with Segment p-06 would not be in compliance with the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 and could have significant direct and indirect impacts on the continued management of the Kofa NWR for the conservation and development of natural wildlife. These impacts would be major, with both short- and long-term effects, and cannot be mitigated. The USFWS states (USFWS 2017) that the construction of a new transmission line across the Kofa NWR should not be considered as a viable alternative." [DEIS p. 4-30] Clearly, the Kofa NWR is an unsuitable location for infrastructure development such as the proposed electrical transmission line.	
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.4	WLF	Sonoran pronghorn: As we noted in our prior comments, a very significant change of circumstance has occurred since the DPV1 line was constructed: the presence of Sonoran pronghorn in the project area. As noted by the USFWS: "In 2011, the refuge began work to re-establish a population of the endangered Sonoran pronghorn on Kofa NWR which lies within the historic range of the species. This was undertaken to support recovery and down-listing of the species. The wild population has reached about 70 animals through reproduction and supplemental releases. Sonoran pronghorn are nomadic and require large expenses of land to survive as localized droughts are frequent and summer rains are sporadic. These animals must be able to move to areas with sufficient food and water throughout the year. Sonoran pronghorn have repeatedly been documented within the area of the proposed ROW and may be negatively impacted by general human disturbance, construction and maintenance activities, and associated habitat loss and fragmentation." [DEIS, Appendix 1A p. 5] The presence of Sonoran pronghorn in the project area is the result of successful re-establishment efforts by federal and state agencies and other stakeholders involving years of planning and resources. This includes significant investment from the Department of the Interior. We encourage BLM to give these efforts and resource expenditures exceptional consideration and, consequently, support the recovery of Sonoran pronghorn by avoiding any	Comment noted. The BLM's preferred alternative does avoid the Kofa NWR.

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					routing or activity on the Kofa NWR. If BLM approves Ten West Link, we support BLM selecting modified Alternative 2 or another alternative that avoids the Kofa NWR in the Final EIS and ROD.	
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.5	WLF	Desert bighorn sheep: In prior comments we noted that the Kofa NWR was originally designated as a game range for desert bighorn sheep. Indeed, the USFWS comments echo this: "Kofa NWR was established for the recovery of desert bighorn sheep populations." [DEIS, Appendix 1A p. 4]. Further, the USFWS explains the negative effects on desert bighorn sheep of a routing through the Kofa NWR: "While the sheep have largely done well on the refuge, a recent population decline of nearly half the historic population of 800 sheep prompted investigations into possible causes of the decline and management actions targeted specifically toward recovery. Increased habitat fragmentation and construction activities that would occur as a result of a ROW for a transmission line, may slow population recovery and restrict sheep movements between mountain ranges. North-south movement between mountain ranges is important for sheep to maintain genetic diversity and since habitat conditions may vary dramatically between different locations based on sporadic and localized rainfall. It is important for the long-term survival of desert bighorn sheep to be able to move to areas with sufficient food and water, particularly during dry seasons or dry years and prolonged droughts." [DEIS, Appendix 1A p. 4] Similar to that for Sonoran pronghorn, the effort to recover desert bighorn sheep on the Kofa NWR represents a considerable investment by federal and state agencies and non-governmental organizations. Similarly, we encourage BLM to give these efforts and resource expenditures by sister agencies exceptional consideration and, consequently, support the recovery of desert bighorn sheep by avoiding any routing or activity on the Kofa NWR. We support BLM selecting modified Alternative 2 or another alternative that avoids the Kofa NWR in the Final EIS and ROD.	Comment noted. The BLM's preferred alternative does avoid the Kofa NWR.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.6	PI	Response to stakeholder input: BLM's press release announcing publication of the DEIS noted that the agency's preferred alternative route, "…is responsive to stakeholder input by avoiding popular recreation areas, the Kofa National Wildlife Refuge, and Tribal lands." A broad suite of stakeholders submitted comments to BLM opposing routing the project through the Kofa NWR and recommending BLM instead consider use of the West-wide Energy Corridor (WWEC) along Interstate Highway 10 (I-10). We appreciate BLM's responsiveness to stakeholder input in the agency's selection of its preferred alternative.	Comment noted.

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15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.7	I10	Using portions of the West-wide Energy Corridor 30-52 along I-10: As noted in the DEIS, portions of the BLM-preferred alternative for Ten West Link would be within WWEC 30-52. DEIS p. 1-7. WWEC 30-52 is the result of a multi-stakeholder and multidiscipline analysis to determine more appropriate corridors for infrastructure development on federal lands. WWEC 30-52 avoids many of the negative environmental impacts associated with the original proposed route through the Kofa NWR. BLM has done the right thing in taking advantage of this work and choosing the WWEC in this case. This route along I-10 demonstrates the promise and value of the WWEC to facilitate consolidated, lower-conflict infrastructure development by steering it to places with fewer impacts. If BLM approves Ten West Link, we support BLM selecting modified Alternative 2 or another alternative that avoids the Kofa NWR and uses WWEC 30-52 in the Final EIS and ROD.	Comment noted.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.8	REC	Avoiding Johnson Canyon: This area is very important to local residents for its scenic views and opportunities for solitude, convenient recreational opportunities, and inclusion in the Arizona Peace Trail. We appreciate that the BLM-preferred alternative avoids Johnson Canyon and traverses Copper Bottom Pass instead. Our staff have visited the area with local residents and agree that the BLM-preferred alternative is the best solution for that portion of the route. As BLM notes in the DEIS, "The effects to OHV routes and the proposed Arizona Peace Trail under the Preferred Alternative would be the similar to those under the Proposed Action. [DEIS 4-125]" which is to say "Because the Proposed Action would follow the existing DPV1, the Project would have negligible changes on the recreation experience of OHV users on OHV routes and the proposed Arizona Peace Trail." [DEIS 4-123] We applaud BLM's decision to avoid new infrastructure in Johnson Canyon or detrimental impacts to the proposed Arizona Peace Trail. If BLM approves Ten West Link, we support BLM selecting modified Alternative 2 or another route that avoids Johnson Canyon and the Arizona Peace Trail in the Final EIS and ROD. We do not oppose the creation of limited spur roads to support construction of the project in Copper Bottom Pass; doing so may help limit safety risks that helicopter installation would create because of the proximity of the existing DPV1 line and the lack of escape routes.	Comment noted.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon**	15.9	VEG	We are pleased that the analysis of the BLM-preferred alternative in the DEIS follows the Desert Renewable Energy Conservation Plan (Land Use Plan Amendment adopted 2016) scientific data and Conservation Management Actions in determining impacts and mitigation ratios for microphyll woodlands, as is appropriate. We recommend that any indirect impacts such as grading or removing vegetation for construction or removing vegetation under the lines be considered direct and not indirect impacts to this plant assemblage. We also recommend that any mitigation needed for microphyll woodlands expand the size of a protected area of BLM lands with a high amount of existing microphyll woodlands, such as the Chuckwalla Area of Critical Environmental Concern.	Comment noted. Ground disturbance, including grading and removing vegetation, for project construction is considered a direct impact. BMP BIO-46 (Appendix 2A, Section 2A.4) compensates for loss of desert riparian woodland at a ratio of 5:1 in California.

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		Society), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)				
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.10	WLF	The alternatives analysis in the Draft EIS also rightly acknowledges that migratory birds are at higher risk where the BLM-preferred alternative crosses the agriculture fields. Audubon has identified the Lower Colorado River Valley as an Important Bird Area (IBA) in an international program to identify areas of high conservation value for birds led by BirdLife International. The IBA designation states: Because the river is emerging as one of the most important corridors in the state for northbound migrants in spring, the agricultural fields to the west of Blythe (esp. along Lovekin Blvd.) support exceptionally high numbers of migrant shorebirds when flooded (e.g. up to 10,000 Whimbrel in spring, RM). Long-billed Curlew is also found in migration and winter in large flocks. The fields in this area host one of just two large aggregations of Mountain Plover left in southern California (several hundred birds), the other being in similar habitat in the Imperial Valley. (Cooper, Important Bird Areas of California, 2008) We are also pleased that the BLM-preferred alternative aligns with the existing SCE Devers Palo Verde 1 line (DPV1) rather than crossing these fields in another area, because this routing will reduce the risk of bird collisions. We recommend that the DEIS include a specific mitigation measure from Avian Power Line Interaction Committee guidance on collision that was included in DPV1 line Mitigated Negative Declaration in siting parallel distribution lines: Avian Protection – The Avian Power Line Interaction Committee (APLIC) guidelines will be followed to the greatest extent feasible (APLIC 2006, 2012). SCE shall install transmission lines utilizing APLIC standards for collision-reducing techniques, which avoids placement of lines significantly above existing transmission lines, topographic features, or tree lines. Use of bird flight diverters or other visual markers to reduce avian collisions with lines shall mimic existing and adjacent transmission line features.	Comment noted. Avian Protection measures following APLIC guidelines are included in the Applicant Proposed Measures as APM BIO-21 (Appendix 2A, Section 2A.4). Additional examples of these were added to the APM description. Additionally, text has been added to Impact BIO 2 in Appendix 1 C to more closely address potential impacts within riparian habitat, including the Colorado River corridor.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club,** Grand Cyn Ch)	15.11	WLF	We are also pleased that the BLM-preferred alternative crosses the Colorado River at an area where the banks of the river have been channelized, because doing so will reduce the risk of bird collisions. Nevertheless, it is well documented that migratory birds fly along the Colorado River during migration periods, some of which may be Endangered or Threatened under Endangered Species Act, such as Yellow-billed Cuckoo and Southwest Willow Flycatcher. While following the Avian Power Line Interaction Committee guidance for reducing the risk of collision and electrocution of birds with transmission lines is key, many birds that migrate at night will not be able to see the lines. The Final EIS and ROD should include guidance on lighting in order not to attract nocturnal migrants to the infrastructure or the lines.	Avian Protection measures following APLIC guidelines are included in the Applicant Proposed Measures as APM BIO-21 (Appendix 2A, Section 2A.4). These include using visual markers, avoiding placing lines significantly above existing transmission lines, topographic features, or tree lines, and lighting specifications in order not to attract nocturnal migrants to the infrastructure or lines.

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15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.12	WLF	Consistent with industry best practices the developer should develop an Avian Protection Plan covering the entire project footprint. BLM should include requirements for the preparation and implementation of an Avian Protection Plan, including measures for nocturnal migrants, in the Final EIS and ROD. The Avian Protection Plan should put particular emphasis on the Colorado River crossing and the crossing of agricultural fields.	The Avian Protection Plan is in Appendix 2B of the FEIS.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.13	VIS	We understand that BLM is recommending that the project developer site the towers close to the existing DPV1 towers to reduce visual impacts. While reduction of visual impacts is important, we understand that strict requirements for close placement of the towers would limit opportunities to adjust tower placement to avoid impacts to microphyll woodlands and cultural resources. In general, we recommend that BLM prioritize flexibility for tower placement to avoid microphyll woodlands and cultural resources over reduction of visual impacts.	It is unclear whether this situation will occur until micrositing has been designed. As part of the micrositing process the BLM will consider impacts to microphyll woodlands and cultural resources and work with DCRT to balance tower placement requirements while minimizing impacts to resources. Impacts to microphyll woodland vegetation communities were evaluated in FEIS Section 4 and Appendix 1C; Table 2.4-1 from Appendix 1C assumed under a worst-case scenario that 7.5 acres of Blue palo verde - ironwood woodland (*Parkinsonia florida - Olneya tesota*) may be impacted by the Project; however, the actual impact is expected to be considerably less after micrositing and application of resource setbacks and applicable APMs, BMPs, and MMs. All unavoidable impacts to microphyll woodlands would be offset through required compensatory mitigation.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs,	15.14	LWC	Lands with wilderness characteristics (LWC) inventory: We appreciate that BLM completed an LWC inventory update for the DEIS and analyzed impacts to LWC in the DEIS, as required by the Federal Land and Policy Management Act (FLPMA) and BLM guidance (Manual 6310). It is our understanding that the BLM-preferred alternative avoids LWC, which we also appreciate. We are trying to confirm with BLM whether this is the case. If the BLM-preferred alternative does intersect LWC, BLM should pursue adjustments to the route to avoid LWC, while taking into consideration potential impacts that adjusting the route could cause to other important resources and values. Unfortunately, the map showing LWC inventory BLM included in the DEIS did not include the right information. BLM has since shared the correct map with some stakeholders; BLM should post the correct map on its ePlanning page and notify stakeholders of its availability as soon as possible.	Corrected figures shared with the Wilderness Society on 11/7/18. Corrected figures and discussion on LWC is included in Section 4.2.5.3 of the FEIS.

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		Sonoran Institute), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)			Instruction Memorandum 2013-106 instructs that BLM field offices should make finalized and signed wilderness characteristics inventory findings available to the public as soon as practicable after their completion and before the inventory data is used to inform decisions. BLM should make these detailed inventory findings available to the public as soon as possible to facilitate informed comments on the DEIS.	
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.15	M&M	Compensatory mitigation: BLM is subject to a broad range of authorities supporting mitigation measures to avoid, minimize and offset unavoidable impacts. While the BLM preferred alternative avoids some of the worst potential impacts by avoiding the Kofa NWR, construction, operation and maintenance of Ten West Link in the BLM-preferred alternative would still cause significant impacts which must be addressed through the mitigation hierarchy. FLPMA requires BLM to manage for multiple use and sustained yield, and to avoid unnecessary or undue degradation of resources and values. The National Environmental Policy Act (NEPA) and associated Council on Environmental Quality (CEQ) regulations require BLM to analyze potential impacts and consider ways to avoid, minimize and mitigate impacts – in accordance with the mitigation hierarchy. The DEIS currently includes inappropriate and inadequate requirements for compensatory mitigation. The BLM must address this by including appropriate requirements for compensatory mitigation in the Final EIS and ROD. The project developer should also make voluntary commitments to appropriate compensatory mitigation, in coordination with BLM, cooperating agencies and stakeholders.	IM 2019-018 (dated December 6, 2018) supersedes IM 2018-093 (and all previous policies regarding compensatory mitigation) and states that BLM must not require compensatory mitigation from public land users under FLPMA. This policy does not preclude compensatory mitigation required under other federal law, state law, or voluntary actions of the proponent. Compensatory mitigation identified in the DRECP will be required for permitting under CEQA in California. Several of the mitigation measures identified in Appendix 1-C have a compensatory mitigation component. Should the CPUC, or any other California agency, use the EIS in lieu of an EIR, the compensatory mitigation requirements would become part of the Mitigation Monitoring and Reporting Program (MMRP), which is attached to Appendix 1C. All measures in the MMRP would be enforced by the CEQA Lead Agency. Therefore, the Applicant may need to compensate for direct impacts regardless of the BLM's stance on compensatory mitigation.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.16	LAW	Instruction Memorandum (IM) 2018-093: Despite recent guidance from BLM in IM 2018-093 instructing agency staff not to require compensatory mitigation to offset impacts from development on public lands, there is a strong legal framework supporting the authority of BLM to require mitigation and in some cases compelling it to do so. FLPMA provides for the administration of the public lands by the Secretary of the Interior through the BLM. BLM has broad authority and obligations under FLPMA to require mitigation when exercising its authority to engage in land use planning, approve site-specific projects, or engage in other management activities. In accordance with FLPMA, the Administrative Procedure Act, other laws and case-law. BLM's decisions regarding mitigation must not be arbitrary or capricious. Because of this, we believe that the BLM must consider and as appropriate require compensatory mitigation in the FEIS and ROD, consistent with FLPMA.	See response to comment 15.15.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy	15.17	M&M	Inadequate and unclear compensatory mitigation requirements: While we appreciate that the DEIS includes some compensatory mitigation requirements, they are inadequate and unclear in many cases. For example, when addressing compensatory mitigation for impacts to birds and bats in California, the DEIS states that "Compensation will be consistent with the most up to date DOI mitigation policy." DEIS Appendix 2C-32. As described above, the current DOI and BLM mitigation policy is inconsistent with the agency's requirements under FLPMA and other laws and regulations. BLM must include specific and appropriate requirements for	See response to comment 15.15.

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		Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)			compensatory mitigation in the Final EIS and ROD. The project developer should also make voluntary commitments to appropriate compensatory mitigation, in coordination with BLM, cooperating agencies and stakeholders.	
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.18	M&M	Compensatory mitigation for impacts to lands with wilderness characteristics: As stated above, we appreciate that the BLM-preferred alternative avoids LWC. If the final Ten West Link route impacts any LWC, BLM must include appropriate compensatory mitigation requirements in the FEIS and ROD, and the project developer should make voluntary commitments. Our scoping comments (incorporated by reference) include details on appropriate compensatory mitigation for LWC impacts and examples from other energy infrastructure projects on BLM lands.	Impacts to LWC would be impacted are presented in FEIS Section 4.2.5.3. Currently there are no proposed structures that would be sited on LWC and only a small portion of the conductors would cross over LWC. BLM has no authority or direction in relevant RMPs to require compensatory mitigation to impacts to LWC. Also see response to comment 15.15.
15	6	Mike Quigley (AZ State Director, **The Wilderness Society**), Rob Peters (Senior Southwest Representative, **Defenders of Wildlife**), Helen O'Shea (Director, Western Renewable Energy Project, **NRDC**), Garry George (Renewable Energy Director, **National Audubon Society**), John Shepard (Senior Director of Programs, **Sonoran Institute**), Sandy Bahr (Chapter Director, **Sierra Club** – Grand Canyon Chapter)	15.19	GEN	In conclusion, we reiterate our appreciation of the fact that the BLM-preferred alternative avoids the Kofa NWR, uses portions of WWEC 30-52, avoids Johnson Canyon, appears to avoid LWC, and reduces risks of bird collisions in California by crossing the Colorado River where it is channelized and following DPV1 across agricultural lands. If BLM approves Ten West Link, the agency should select this BLM-preferred alternative in the Final EIS and ROD, or another route that addresses these sensitive resources and potential impacts in the same way. The Final EIS and ROD should also appropriately address compensatory mitigation. We appreciate the opportunity to comment.	Comment noted.
16	1	Lowell Sorenson, AZ Sunriders & AZ Peace Trail	16.1	SUP PA	It is my belief that the new power line should be built in the same corridor as the old one. Common sense tells us that, but I am told that not possible because of certain government entities that think there ideas are more important than anybody's.	Comment noted.

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16	1	Lowell Sorenson, AZ Sunriders & AZ Peace Trail	16.2	SUP PREF	So next best thing is the BLM proposal. I will approve that proposal.	Comment noted.
17	1	Bruce Fuller, President **Arizona Sunriders**	17.1	SUP PREF	The Arizona Sunriders support the BLM Preferred route that bypasses Quartzsite and Johnson Canyon.	Comment noted.
18	1	Eric Angle	18.1	LU	I own a 20 acre parcel of land near Ave 22 in Blythe. When the project was announced I was contacted by a representative regarding access and testing on my property. I granted access but have not received any follow up information as to findings or resolutions that would impact the project or my property specifically. What will be the long term impacts to the viability of surrounding properties and their use for other non project related functions? Will zoning be changed or will there be limit as to what and who can access the surrounding properties based on security concerns?	DCRT will negotiate easements with private landowners that contain specific stipulations on allowable uses. Impacts to residential land use are provided in the TES, Section 4.8.4.1 and 4.8.5.4. Zoning changes are out of the jurisdiction of the BLM. Access for construction and maintenance is described in the EIS Appendix 2.
18	1	Eric Angle	18.2	SOCIO	Whether or not the equipment being deployed will cause medical conditions is arguable but out of caution the perception would be to keep a distance which means surrounding properties will see a negative impact on values and use. I am not opposed to progress, especially as a benefit for the entire community as long as there is mitigation for those directly and negatively impacted by progress.	Public health and safety is discussed in Section 4.2.8 of the EIS. EMF levels were modeled (Appendix 4, Tables 4.2-4 and 4.2-5) and would be at levels comparable to typical magnetic fields associated with common household appliances with EMF levels decreasing rapidly at increasing distance from the Project. As noted in Section 4.9.5.6 of the DEIS, any potential long-term decreases in property values are difficult to determine. The majority of studies have focused on urban residential properties whereas this Project is largely rural. Property owners allowing the use of a portion of their property for the transmission line ROW would be compensated by DCRT, as negotiated, for the encumbrance the line creates upon their land and potential reductions in their property values.
19	1	Victor Lujan, Palo Verde Irrigation District	19.1	WTR	Palo Verde Irrigation District would like to submit the following comments. Under Chapter 4 Section 2.10 named Water Resources; the DEIS indicates flexibility with structure placement would eliminate or reduce impact to water resources. Palo Verde Irrigation District would suggest any structure being placed in Palo Verde Irrigation District boundary from the Ten West Project have a hundred-foot minimum distance from any existing Palo Verde Irrigation District right of way. Palo Verde Irrigation District's concerns are from the possibility of Ten West structure failure due to possible unforeseen soil wash outs due to normal system use in our canals and drains system.	DCRT will be required to work with PVID and agricultural operators to design the Project to minimize impact. Palo Verde Irrigation District is included in Table 1.5-2 that lists state and local permits required by the Project.
20	1	Kathleen Martyn Goforth, Manager, Environmental Review Section, **EPA**	20.1	GEN	As a cooperating agency for the proposed Project, EPA recognizes the BLM for its early and sustained coordination throughout the NEPA process. The BLM convened a diverse group of federal, state, and local stakeholders and conducted months of cooperating agency calls and in-person meetings to identify potential impacts resulting from the Project. As a result of that well managed process, the BLM Preferred Alternative proposed in the DEIS responds to major issues of concern by avoiding the Kofa National Wildlife Refuge, minimizing impacts to the Yuma Proving Ground, and avoiding the area of abundant cultural resources in the Mule Mountains, among other measures.	Comment noted.
20	1	Kathleen Martyn Goforth, Manager, Environmental Review Section, **EPA**	20.2	WOUS	While EPA has no outstanding concerns, we suggest that the BLM provide additional information in the Final EIS regarding the potential impacts from project activities on sensitive water resources such as waters of the United States (WUS). The BLM states, in the Technical Environmental Study (TES) prepared for the Project, that existing wetlands and	The preliminary stand-in delineation of linear feet was a compromise with USACE for the EIS. Through consultation with USACE, it was decided that a PJD report and need for PJD-level (detailed) mapping for all EIS alternatives was a major undertaking and not necessary for the EIS but rather would be

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					WUS mapping from the National Wetlands Inventory was reviewed for the water resources study area, and that the U.S. Fish and Wildlife Service has mapped potentially jurisdictional waters, mostly ephemeral washes, throughout the study area at each mapped drainage crossing (p. 3-495). The TES provides a table (Table 3.19-4) with estimates of the ephemeral wash crossings and the WTJS crossing length (in feet) but does not include an estimate of the number of acres of jurisdictional waters that could be subject to Section 404 of the Clean Water Act (CWA). The BLM notes in the DEIS that Nationwide Permit (NWP) 12 for Utility Line Activities would be the likely applicable Section 404 permit for most Project features requiring compliance. The EPA suggests that the Final EIS include an estimate of the acres of jurisdictional waters that could be subject to Section 404 permit requirements, as well as a description of how the BLM would coordinate with the U.S. Army Corps of Engineers to ensure that the proposed Project complies with such requirements and how the extent of jurisdictional waters would be verified.	carried forward in the 404 permitting process. DCRT would need to coordinate with the USACE to apply for and obtain the necessary Section 404 permit(s) for the project.
20	1	Kathleen Martyn Goforth, Manager, Environmental Review Section, **EPA**	20.3	GEN	Effective October 22, 2018, EPA no longer includes ratings in our comment letters. Information about this change and EPA's continued roles and responsibilities in the review of federal actions can be found on our website at: https://www.epa.gov/nepalepa-review-process-under-section-3 09-clean-air-act.	Comment noted.
21	3	D.L. Wilson (District 1), Duce Minor (District 2), and Holly Irwin (District 3) **La Paz County Board of Supervisors**	21.1	GEN	Like the proponents, we too desire the construction and operation of a feasible transmission line with associated infrastructure that provides economic security in the future, while avoiding destructive impacts to existing land uses. So far, it appears that is what is underway.	Comment noted.
21	3	D.L. Wilson (District 1), Duce Minor (District 2), and Holly Irwin (District 3) **La Paz County Board of Supervisors**	21.2	SUP PREF	The preferred alternative follows the existing BLM designated energy corridor. Negative impacts to locations and uses long established by tourists and La Paz residents will be avoided. Critically, the transfer and sale of Federal public lands to La Paz County for economic development, a process now well underway in the US Congress, will not be threatened.	Comment noted.
21	3	D.L. Wilson (District 1), Duce Minor (District 2), and Holly Irwin (District 3) **La Paz County Board of Supervisors**	21.3	ROUTE	We would like to know as soon as possible where the proposed route for the Link will meet the California state border.	The Agency Preferred Alternative identified in the DEIS would cross the Arizona-California border at the same Colorado River crossing essentially as the existing DPV1 line transmission line, on the north side of it.
22	1	Mark Roberts, ACIP, Office Chief, IGR/Community & Regional Planning, **California Department of Transportation**, District 8	22.1	ROUTE	The Executive Summary of the DEIS and DRMPA has identified Alternative 2 as BLM's preference. This alternative might traverse State Route 78 (SR-78). As the owner and operator of the State Highway System (SHS) we respectively offer the following comments…	Correct, Alternative 2 would cross SR-78. As SR 78 traverses north-south through Blythe, all routes would cross it.
22	1	Mark Roberts, ACIP, Office Chief, IGR/Community & Regional Planning, **California Department of Transportation**, District 8	22.2	PERM	This project will require a Caltrans Encroachment Permit if the transmission lines traverse any portion of the SHS for any work performed within the State right-of-way. Please refer to the Caltrans Encroachment Permit Manual, Chapter 600-Utilities Permits website for further information: http://www.dot.ca.gov/trafficops/ep/manual.html In addition, all work undertaken shall be in compliance to all current design standards,	Comment noted. DCRT would be required to obtain this permit, as applicable.

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					applicable policies, and construction practices.	
23	1	Angela Horn, Senior Planner, Maricopa County Department of Transportation	23.1	TRANS	In comparing the proposed transmission line route and alternatives, with the Major Streets and Routes Plan (MSRP) and Maricopa County Zoning requirements, we found many instances where the proposed transmission line is in close proximity to, adjacent to, or in line with existing or future roadways. Specifically these include Salome Highway, Indian School Road, Eagle Eye Road, and several section and mid-section line roadways within the study area. All of these roadways will require 130 feet of right-of-way to accommodate future travel, with the exception of mid-section lines which will require 80 feet.	Comment noted. DCRT would be required to obtain a road/highway encroachment permit from Maricopa County (Appendix 1, Table 1.5-2). As part of the final siting (micrositing) of the Project, DCRT would be required to coordinate design of the Project and micrositing of Project infrastructure with Maricopa County to allow for future ROW needs for Maricopa County roads.
23	1	Angela Horn, Senior Planner, Maricopa County Department of Transportation	23.2	TRANS	MCDOT has previously expressed concerns regarding impact to future roadway widening due to utility conflicts and repeats that concern with this project. MCDOT respectfully requests the Bureau of Land Management (BLM) carefully consider the potential impact of this line with roadways. We encourage any approval to require equal cooperation in sharing right-of-way (roadway and utilities) thereby limiting impact to the environment by decreasing overall right-of-way requirements.	Comment noted. See comment 23.1.
24	1	Nils Stannik, Utilities Engineer, **Public Advocates Office**, California Public Utilities Commission	24.1	P&N	The Public Advocates Office recognizes that the BLM's DEIS does not assess project need, non-wire alternatives, or policy goals. As such, claims by the project proponent, DCR Transmission LLC (DCRT) about economic benefits, renewable energy development, and reliability/operational flexibility were not examined in the BLM's analysis and should not, at this time, be presumed correct or considered as justifications for the project. The Public Advocates Office proposes that further analysis and policy recommendations are required to determine if the project is needed, if any alternatives are feasible or desirable, and what costs are appropriate for the project. The Public Advocates Office looks forward to examining and discussing these issues in the Certificate for Public Convenience and Necessity (CPCN) Application before the California Public Utilities Commission (Application 16-10-012).	The EIS addresses purpose and need as required by NEPA and BLM guidance (Section 1.3). The non-wires alternative can be found in Section 4.3 of Appendix 1C.
24	1	Nils Stannik, Utilities Engineer, **Public Advocates Office**, California Public Utilities Commission	24.2	P&N	The BLM's environmental analysis and route alignment recommendations are an important first step in the analysis of the Proposed Project and will assist with compliance with the California Environmental Quality Act (CEQA), but do not obviate or reduce the need for thorough, transparent and updated analysis to confirm project need, cost/benefit evaluation, potential alternatives, and consistency with statewide policy goals.	BLM invited the CPUC to cooperate in preparation of the EIS to ensure the EIS also meets the requirements of the CEQA. Appendix 1c of the EIS contains the CEQA analysis. Further, the California Independent System Operator (CAISO) is responsible for operating and managing California's energy grid. The Ten West Link line is being developed through the CAISO's competitive transmission solicitation process to connect APS's Delaney 500 kV Substation to the SCE Colorado River 500 kV Substation. Therefore, the need for the project was established by CAISO during their transmission planning process.
24	1	Nils Stannik, Utilities Engineer, **Public Advocates Office**, California Public Utilities Commission	24.3		The Public Advocates Office notes that the BLM's Preferred Project Alternative (124.9 miles long) and many of the other considered alternatives (ranging from 111.5 miles to 126.1 miles) are longer than the DCR Transmission's Proposed Project (114 miles). Should the BLM's Preferred Project Alternative be approved by the CPUC, a longer project route will almost certainly result in higher project costs and therefore greater ratepayer impact. DCR Transmission estimates its Proposed Project's total cost as $279,560,483 in 2020 dollars. Although a per-mile extrapolation is an imperfect measure, an increase in project length of nearly 10% would correlate to a cost increase of nearly $27 million in 2020 dollars.	NEPA requires the development and analysis of project alternatives. These were developed with consideration of resource impacts, as well as existing infrastructure, with the goal of minimization of environmental impacts. The EIS analyzes a range of alternatives that meet the requirements of NEPA which also are consistent with the DCRT's interests and objectives.

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24	1	Nils Stannik, Utilities Engineer, **Public Advocates Office**, California Public Utilities Commission	24.4		At this time, the Public Advocates Office neither supports nor opposes the BLM's Preferred Project Alternative. However, the Public Advocates Office's future support of or opposition to this project is contingent on demonstrable project need, costs, and potential alternatives that will be evaluated during the CPCN process.	Comment noted.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.1	KOFA	The Center is encouraged that many of the alternatives, including BLM's preferred alternative, avoid impacts to the Kofa National Wildlife Refuge. The Final EIS should not select any alternative or subalternative that includes constructing any part of this proposed project in the Kofa National Wildlife Refuge because the proponents' preferred route through the Kofa National Wildlife Refuge would cause excessive environmental harm compared to other routes. This route would not be compatible with the purpose of the refuge which was established in 1939 "for the protection of desert bighorn sheep and other native wildlife"	Comment noted.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.2	P&N	While the DEIS includes sections on the Purpose and Need for the project proponent and various agencies, we had requested in joint scoping comments that the DEIS independently evaluate the following: • whether the project significantly contributes to meeting energy needs in Arizona and/or California; • whether the line would help generators meet California's deliverability requirements for out-of-state renewable energy resources; • whether the energy shipped on the line would be cost-competitive and the project would be economically viable; • whether the line would reduce current congestion and increase reliability; • the degree to which distributed generation, energy efficiency, demand-side management, or proposed line enhancements and additions may modify or shape congestion and reduce the need for the line; • an analysis of the ultimate energy mix;	Evaluating these issues are outside the scope of NEPA analysis for the ROW application.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.3	P&N	Instead of providing an analysis on these basic issues, the DEIS relies on the 2014 CAISO report that is not provided as part of the DEIS. This independent analysis still needs to be included in a revised or supplemental DEIS.	The report is part of the Administrative Record for the Project. Including it as an appendix was not warranted. It is available on the CAISO website at: http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=36222BAE-8DB0-4BCE-B88C-75267214120F.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.4	RENE	While grid reliability may be a driving factor for this new proposed line, the planet desperately needs humans to transition to a clean energy economy including a transition to renewable energy generation (with storage). The proposed project has the opportunity to commit to moving only clean renewable energy and rejecting climate-harming energy from fossil fuels. The DEIS identifies one of the developer's purpose and need for the project is to "Facilitate development of new renewable energy", a true commitment to this goal would be to reject moving energy generated from polluting fossil fuels on this line.	Sources of energy that would be transmitted along the Project line would be beyond the scope of the project and authority of the BLM.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.5	WLF	While the DEIS contemplates a Section 7 consultation with the U.S. Fish and Wildlife Service, which we agree is necessary, the consultation appears limited to the federally threatened Mojave desert tortoise population and the federally endangered Sonoran pronghorn. Because the proposed project in all alternatives will be crossing the Colorado River, a known thread of the Pacific flyway and habitat for non-migratory federally protected avian species, the BLM needs to consult on additional federally and California State protected species including the federally endangered southwestern willow flycatcher ((*Empidonax*	The scope of and requirements for Section 7 consultation will be determined by the USFWS.

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					traillii extimus) and California endangered willow flycatchers (*Empidonax traillii*), the federally threatened and California endangered western yellow billed cuckoo (Coccyzus americanus occidentalis), the federally and California endangered least Bell's vireo (*Vireo bellii pusillus*), federally endangered and California threatened Yuma Ridgway's rail (*Rallus obsoletus yumanensis*)(formerly Yuma clapper rail (*Rallus longirostris yumanensis*)) and potentially others. Consultation must cover construction, operation and maintenance (O&M) and decommissioning.	
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.6	WLF	We remain particularly concerned about Yuma Ridgway's rail in part because the USFWS' Draft Yuma (Ridgway's) Clapper Rail Recovery Plan, First Revision, states that the Yuma clapper rail has a "high degree of threat and low recovery potential from loss of habitat due to lack of natural river processes that create and maintain marshes, and lack of security relative to the protection of existing habitats in the U.S. and Mexico". The USFWS identifies the population along the Colorado River as non-migratory, however one key action identified in the 2010 Draft Recovery Plan is "Identify migration pathways between the three core populations to assess metapopulation status and contribute to determinations on minimum population size and habitat necessary to support that population." While the definition of "migratory" and "non-migratory" are not clearly defined in the Draft Recovery Plan, the rails (and other birds) do move along the Colorado River flyway. The proposed project site traverses the Lower Colorado River core population. Ridgway's rails have been found at PV projects. One of this proposed project's purposes is to facilitate additional renewable energy projects. Impacts to this very rare and apparently non-migratory wading bird not only from this proposed transmission project, but also from its purpose to facilitate additional renewable energy projects, need to be considered in a revised EIS. Because of already low and now declining population numbers, additional impacts and mortalities will drive the Yuma clapper rail closer to the brink of extinction.	The BLM is consulting with USFWS for ESA-listed species. The basis of Section 7 consultation under ESA is to ensure that actions a federal agency may authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. Cumulative effects in regard to the BA analysis include those effects of future state, private, or tribal actions that are reasonably certain to occur in the action area.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.7	VEG	The DEIS defers a proper look at proposed mitigation by referencing but then failing to provide key plans that are proposed to minimize and mitigate impacts. For example, missing plans include: • Vegetation Management Plan (Appendix 2A-17) which would "describe[] the surveys, permitting, fee payments, and plant protection to be conducted in areas where Project design would not eliminate the need for vegetation control for the project to be in compliance with NERC requirements. Vegetation would be trimmed or otherwise controlled for safe operation of the transmission line and would be designed to minimize impacts on special status species to the extent practicable. The Plan also would describe how vegetation would be salvaged, as needed, in order to comply with the applicable Arizona Native Plant Law and California regulations." (IBID) While we support such a plan in concept, it remains unclear exactly how vegetation treatments would occur. A plan alone does not ensure minimization and mitigation for impacts to vegetation.	Additional mitigation is outlined in Appendix 1C, Section 4.1.2. The FEIS Plan of Development provided by DCRT includes this plan in Appendix L1.

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25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.8	VEG	Noxious Weed Control Plan (Appendix 2A-19) – It is unclear if herbicides would be used and how native species would be protected from the harmful impacts associated with herbicide use, which potentially affect both plants and animals.	The Noxious Weed Control Plan is part of the overall Vegetation Management Plan in Appendix 2B. MM BIO-CEQA-4: suggested role up all into one plan: A vegetation management plan that covers specifications for restoration, revegetation, mitigation, and monitoring and noxious weed control and abatement.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.9	VEG	Habitat Restoration and Monitoring Plan (Appendix 2A-21) – It is unclear what plant palettes would be used which is particularly concerning based on the linear scope of the proposed project, where it will transect numerous vegetation alliances. Clearly a simple plant restoration palette would be insufficient. No success criteria are provided upon which to base such a plan. It is unclear what types of monitoring (remedial, success, etc.) would be required and how the monitoring types would be implemented.	The Vegetation Monitoring Plan identifies a proposed plant palette (Appendix 2B). This plan would require approval from the CPUC and resource agencies. This palette will be comprised of native species known to occur in the area.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.10	WLF	Raven Management Plan (Appendix 2A-30) – While we support the implementation of such a plan, California has a regional plan and funding mechanism to address this issue, but it is unclear if that strategy would be adopted here.	The Raven Management Plan has been added to Appendix 1C as MM WIL-CEQA-2. This new mitigation measure includes payment requirements to the USFWS Regional Raven Management Program. The Raven Management Plan is in Appendix 2B.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.11	WLF	Bird and Bat Conservation Strategy (Appendix 2A-30). As noted above, the proposed project crosses the Colorado River, which is a heavily used thread of the Pacific flyway and an Audubon Important Bird Area - Lower Colorado River Valley. It is unclear what strategies would be included in the Bird and Bat Conservation Strategy, particularly to offset the impacts to migratory and resident birds from transmission towers.	New MM WIL-CEQA-1 includes compliance with the APLIC guidelines. The Avian Protection Plan is in Appendix 2B.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.12	WLF	Burrowing Owl Nesting Management Plan (Appendix 2A-31) – It is unclear if the Nesting Management Plan would propose using passive relocation of owls despite the fact that there is no scientific evidence that passive burrow exclusion (or passive relocation) of burrowing owls is a successful strategy for long-term survival of burrowing owls. “Passively relocated” owls need to be monitored to determine the effectiveness of that action. Therefore, the BLM and agencies need to work with the state and federal wildlife agencies to set up a statistically useful monitoring program to assess the outcome of passively relocated owls.	New MM WIL-CEQA-3 cover relocation of burrowing owls, including continued monitoring efforts. The Burrowing Owl Nesting Management Plan is in Appendix 2B.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.13	WLF	If burrowing owl habitat is permanently converted, appropriate acres of burrowing owl habitat will need to be acquired to off-set impacts from the construction and operation of the solar project and transmission line. Mean burrowing owl foraging territories are 242 hectares in size, although foraging territories for owls in heavily cultivated areas are only 35 hectares. The DEIS fails to identify the actual number of territories that occur on the proposed project site and how they would be affected. Absent the actual plan for the nesting burrowing owls, it is unclear how this declining raptor would be affected.	In California, compensation for damaged or collapsed burrows is included at a 2:1 ratio in MM WIL-CEQA-3. A burrowing owl nesting management plan has been developed as part of the Avian Protection Plan and is available for review in Appendix 2B.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.14	WLF	Fringe-toed Lizard Linear ROW Protection Plan (Appendix 2A-38) – This is a particularly important plan based on the uniqueness of the fringe-toed lizard population on the proposed project ROW and the documented impacts to the species from previous attempts to avoid impacts, which were not successful despite the best of intentions. The sand dune and partially stabilized sand dune habitat is crucial for the Mojave fringe-toed lizard, which is the most southerly population of the Mojave fringe-toed lizard and likely the population most adapted to the increasing temperatures due to climate change. There is no analysis of impacts (either direct or indirect) to the sand migration zones by the project. The adjacent Desert Quartzite	BMP BIO-54 (Appendix 2A, Section 2A.4) requires that the Project be constructed such that the flow of sand is allowed across Project activity sites and to avoid the trapping or diverting of sand from the Aeolian corridor. The FEIS contains this plan in Appendix 2B. Sand transport was analyzed in Sections 4.3.4.2 and 4.4.4.2 of the DEIS, as well as Sections 4.3.4.5, 4.3.10.2, 4.3.11, 4.5.4.5, and 4.20 of the TES.

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					solar project did an analysis that shows impacts will occur from their gen-tie line to the Colorado River Substation which appears in a very similar location to the proposed project.	
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.15	WLF	Other projects proposed to impact Mojave fringe-toed lizard habitat have identified mitigation ratios of 5:1 and 3:1 for direct impacts to all occupied Mojave fringe-toed lizard habitat and lesser ratios for indirect impacts. For example, Desert Sunlight project was required to mitigate any unavoidable impacts to the Mojave fringe-toed lizard habitat up to 5:1 for direct impacts to all occupied Mojave fringe-toed lizard habitat and lesser ratios for indirect impacts (Desert Sunlight FEIS at 4.4-40). As Barrows et al. (2006) found, edge effects are significant for fringe-toed lizards and, in addition, the increase in predators associated with developed edges may also have a significant adverse effect on fringe-toed lizards and other species, therefore additional mitigation is warranted.	The CEQA analysis took into account ratios for similar projects and determined that a 3:1 ratio for permanent impacts would mitigate impacts to less than significant. There is a 3:1 mitigation ratio (acquisition or rehabilitation) in NECO (p. 2-57) and the CEC Palen Project (p. 4.2-92, p. 4.2-129) for disturbance to sand dune habitat. See Sections 2.4.5.2 and 2.4.6 of Appendix 1C. Regulatory permits required for the Project may impose additional mitigation depending on each agency involved. The edge effects from a transmission line are much different than compared to a solar project and are not expected to pose a significant impact.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.16	WLF	One significant concern is the ability of the impact to Mojave fringe-toed lizards to be mitigated. The Desert Quartzite DEIS/R states: “It is uncertain whether sufficient private lands meeting the habitat criteria may be available for purchase.” (at pg. 4.4-7). Furthermore, on that same page, it states: “Therefore, compensation required under Mitigation Measure WIL-10 may be accomplished through acquisition and management of off-site habitat or, if suitable compensation habitat is not available, through offsite habitat enhancement and restoration (e.g., by controlling weeds or off-highway vehicle access). However, it is also uncertain whether off-site enhancement and restoration can feasibly and effectively restore natural sand transport function and aeolian sand habitat values. Therefore, with implementation of Mitigation Measure WIL-10 to the extent it is feasible, the Proposed Action’s direct effects on sand transport may remain only partially mitigated.” Clearly the lack of adequate mitigation land and the infeasibility of restoration of habitat elsewhere is a key reason in California to consider alternatives that will avoid impacts to both the sand movement zones or select the No Project alternative.	Mitigation will be implemented consistent with the CDCA Plan. BMP BIO-49 and MM BIO CEQA-3 are sufficient. Lattice towers, which have small footprints, and dirt access roads built at grade without berms would have a less than significant effect on sand transport. The impacts of transmission lines on sand dunes fits the DRECP definition of a “minor incursion”. The impacts on fringe-toed lizards from direct habitat loss and potential roadkill would be greater than the impacts to the sand transport. Direct habitat loss would be the area of the access road plus the tower pads. This acreage would be fairly small especially when compared to the total amount of available habitat in the Palen-Ford dune system. There is a 3:1 mitigation ratio (acquisition or rehabilitation) in NECO (p. 2-57) for disturbance to sand dune habitat. BLM needs to do an analysis of how much land is available for acquisition and how much BLM land is available for rehabilitation. Restricting vehicle access to closed dunes is a viable option for mitigating impacts to fringe-toed lizards. On-site mitigation would be maximizing the use of existing access roads to reduce habitat disturbance and roadkill. Because the access road would be dirt (low vehicle speeds) and in a location with light usage, we would expect a low level of lizard mortality and negligible population impacts.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.17	WLF	Lastly, during construction of the Colorado River substation, despite escorted construction and a speed limit on the access road, significant Mojave fringe-toed lizard mortality occurred that required additional minimization and mitigation.	Comment noted. Protection for Mojave fringe-toed lizards is included specifically as BMP BIO-25, BMP BIO-49 (CA only), and in many other APM/BMPs that specify wildlife protection (Appendix 2A). There is a fringe-toed lizard plan (Appendix 2B) for the Project which outlines measures to minimize impacts on the lizard including a lizard clearance survey protocol.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.18	M&M	Several of the proposed mitigation measures are vague and unclear. Below, we identify the clarifications needed or improvements to the mitigation measure: BIO-32: Seasonal Restriction Dates - Species-specific seasonal restriction dates would be observed. (Appendix 2A-33) – It is unclear which species and which activities are protected by this mitigation measure. Much greater detail is needed (specific species, actual restriction dates and reasons for restriction dates) and which activities would be restricted.	Seasonal restriction dates due to nesting and blooming are important. Additional information has been included in the document where applicable to identify these dates/periods. Seasonal wildlife restrictions are subject to change and are generally dictated by the AGFD or CDFW. The seasonal restrictions would be dictated by the AGFD, CDFW, and/or applicable RMPs. This was added to BIO-32.

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						Reference to the seasonal wildlife restrictions was also added to the TES Section 4.5.4.1. Seasonal restrictions for listed species will be established though the ongoing Section 7 consultation with the USFWS.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.19	M&M	BIO-33: Construction Lighting. (Appendix 2A-33) – The measure indicates that it pertains to not just construction but to O&M and decommissioning. Based on the O&M, the Mitigation Measure needs to adopt the APLIC standards, not just rely on "avoid the use of constant-burn lighting". Constant burning lights can attract birds and bats and put them in harm's way, resulting in an impact that can be avoided by proper lighting.	Avian Protection measures following APLIC guidelines are included in the Applicant Proposed Measures as APM BIO-21. These include lighting guidelines to deter attracting nocturnal migrants to the infrastructure or lines. Additionally, compliance with the APLIC guidance is included in MM WIL-CEQA-1.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.20	WLF	The DEIS needs at a minimum to adopt all of the APLIC standards for this project as they pertain to transmission lines and substations.	The Avian Protection Plan (Appendix 2B) incorporates APLIC standards, as well as the APMs and BMPs as appropriate.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.21	M&M	BIO-46: Compensation for Loss of Desert Riparian Woodland (Appendix 2A-37). As proposed this mitigation measure would only be applied in California, yet Desert Riparian Woodlands in Arizona hold the same critical value for wildlife as the California woodlands. In striving for consistency in mitigation across the project for sensitive plant communities, this mitigation measure should be adopted for the proposed project in Arizona.	BLM will follow mitigation requirements in the Arizona RMPs for riparian woodlands; riparian woodlands would be avoided to the greatest extent practicable in both California and Arizona through Project design.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.22	M&M	HAZ-02: Fire Avoidance and Suppression (Appendix 2A-50) – applies to all phases from construction through O&M and decommissioning. It requires a Fire Protection Plan, but as stated above, no plan is provided for review. In light of the increasingly destructive fires in California from powerlines as ignition sources, coupled with the fact that natural desert lands are significantly and sometimes permanently impacted by fire, the DEIS must include a much more robust analysis of the impacts from powerline ignitions particularly in the remote areas as well as the areas developed for human habitation that the DEIS is considering.	MM HAZ-CEQA-1 is included in the CEQA Appendix and covers the preparation and implementation of a Fire Prevention Plan for the Project. The Fire Plan is included in the FEIS Appendix 2B. Power line ignition is not anticipated to be a significant impact based on lack of fuel load.
25	1	Ileene Anderson, Senior Scientist/ Public Lands Desert Director, **Center for Biological Diversity**	25.23	GEN	We look forward to BLM responding affirmatively to these comments and incorporating them into a revised DEIS which should then be released for an additional public comment period. We urge the BLM to do so, before making any decision regarding the proposed plan amendments and right-of-way application. In the event BLM chooses not to revise the DEIS and provide adequate analysis, the BLM should reject the right-of-way application and the plan amendments. Please feel free to contact us if you have any questions about these comments or the documents provided.	As noted in the applicable responses to comments, revisions to the EIS will be made, as deemed necessary and will be documented in the FEIS which will be released to the public. A revised DEIS was deemed unnecessary and will not be prepared and released for additional public comment period.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **Yuma Proving Ground (YPG)**	26.1	YPG	The previously agreed to alternatives of issue (Segments cb-07, cb-08, and cb-09) remain removed and are documented on page Appendix 2-73 and 2-74. One segment, p-09, which is part of the BLM preferred alternative clips the northeast corner of Yuma Proving Ground (YPG). Previous memorandums from the Department of Defense and YPG requested this route not cross over YPG land space in North Cibola and that YPG had no objection as long as it did not deviate from the established corridor. Our position on this remains unacceptable to encroach on YPG property.	Comment noted. See comment response 26.2.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.2	YPG	According to the recommended BLM preferred alternative, p-09 would cross the extreme northeastern corner of YPG. We are currently discussing the requirement with DCRT. Our position on this remains unacceptable to encroach on YPG property which is consistent with previous input to BLM. 05 Feb 2016 memorandum from DoD to BLM requested that the	Comment noted. Per approval by YPG (letter dated 1/9/19), the Segment p-09 alignment was shifted as far north as possible while maintaining the 250-ft reliability separation to the existing DPV transmission line. The TWL conductors would cross the very furthest corner of YPG while the structures

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					route not cross over YPG land space in North Cibola, YPG. 14 Oct 2016 memorandum from YPG to BLM stated no objection to segment p-09 as long as it did not deviate from the established corridor. The current deviation is estimated at 175 meters below the current corridor on YPG land space.	themselves would be on BLM lands. Only an aerial easement over YPG would be needed and no construction ground activities would be conducted on YPG property.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.3	PLAN	YPG has updated the Integrated Natural Resources Management Plan. Citation should be updated to state "YPG 2017."	This has been updated throughout the EIS.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.4	OPP ALT 2	There is not an existing BLM utility corridor on DOD land. Table 2-5 indicates that 0.4 miles of transmission line would encroach on YPG which is contrary to the 14 October 2016 memorandum from YPG to BLM prepared which states "We have no objection to the Proposed Action as depicted in the enclosure as long as segment p-09 does not deviate from established corridor." DEIS indicates deviation and intrusion onto DOD lands. Note: Enclosure was the 16 Aug 2016 Draft Preliminary Alternatives Report.	See comment response 26.2.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.5	OPP ALT 3	There is not an existing BLM utility corridor on DOD land. Table 2-6 indicates that 0.4 miles of transmission line would en+E12croach on YPG which is contrary to the 14 October 2016 memorandum from YPG to BLM which states "We have no objection to the Proposed Action as depicted in the enclosure as long as segment p-09 does not deviate from established corridor." DEIS indicates deviation and intrusion onto DOD lands. Note: Enclosure was the 16 Aug 2016 Draft Preliminary Alternatives Report.	See comment response 26.2.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.6	OPP ALT 4	There is not an existing BLM utility corridor on DOD land. Table 2-7 indicates that 0.4 miles of transmission line would encroach on YPG which is contrary to the 14 October 2016 memorandum from YPG to BLM which states "We have no objection to the Proposed Action as depicted in the enclosure as long as segment p-09 does not deviate from established corridor." DEIS indicates deviation and intrusion onto DOD lands. Note: Enclosure was the 16 Aug 2016 Draft Preliminary Alternatives Report.	See comment response 26.2.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.7	WLF	There should be a brief discussion of consultation for the T&E species mentioned in 3.4-8. Reference the consultation procedures in 5.5.1. YPG must also be covered in the BA and BO	Consultation requirements are discussed in the EIS. The BA states: The BLM must also consult and conference as appropriate with the U.S. Fish and Wildlife Service (USFWS). Other federal agencies, including Reclamation, Western Area Power Authority, and Department of Defense also might issue land use authorizations or take other federal actions related to the Project; this BA is intended to meet the ESA requirements of those agencies as well. Per 50 CFR § 402.07, the BLM has been designated as the lead agency for ESA consultation and conference responsibilities for the Project.
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.8	LU	The military land use study area overlaps the U.S. Army Yuma Proving Ground (YPG), which is the only military installation in the military land use study area. YPG is a center for testing military equipment including vehicles, unmanned aerial systems, air delivery, electronic warfare, artillery, rockets and other weapon systems. Testing on YPG consists of both developmental testing for new equipment and operational testing to prepare equipment for fielding by military units. The Army's Free Fall School is also located on YPG. Land use within the YPG is not entirely restricted to military equipment and artillery testing., General Motors operates a test track on YPG under an Enhanced Use Lease. different regions within the YPG are used for different purposes (YPG 2016). Where compatible with the military mission, For example, in coordination with the AGFD, the YPG administers public access for	This description has been added to the baseline data for land use in Chapter 3 of the FEIS.

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					hunting in certain parts of the installation by permit.	
26	1	Ross C. Poppenberger, Colonel, US Army, Commanding, **YPG**	26.9	GEN	The previously agreed to alternatives of issue (Segments cb-07, cb-08, and cb-09) remain removed and are documented on page Appendix 2-73 and 2-74.	Comment noted.
27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.1	SUP PREF	This letter is intended to demonstrate my support for the preferred route in the Draft EIS and to convey my gratitude to the BLM, Ten West Link and stakeholders who were engaged since the beginning on the siting issues, economic development options and ultimate vetting of the proposed preferred route.	Comment noted.
27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.2	PI	Based on the Board of Supervisor's request, I undertook substantial efforts to work closely with the numerous stakeholders to create a transmission project that would gain support from a variety of different entities, many with competing agendas, including US Fish and Wildlife, CRIT, State Lands, AZ Fish and Game, The Wilderness Society, The Peace Trail volunteers, the Cities of Quartzsite, Ehrenberg and Blythe as well as the numerous members of the public who were engaged in the process. During the BLM's formal process, I feel that everyone was heard, and their comments were considered important and relevant with the end result being the preferred route selected in the Draft EIS.	Comment noted.
27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.3	P&N	… The addition of this transmission capacity could represent a boon in development for the region in the form of new opportunities to build renewable energy projects to electrify the line and I recognized that this new, desperately needed transmission capacity for the western region could help the State of Arizona in becoming more sustainable while increasing economic development options in Maricopa and La Paz Counties. I knew that our local stakeholders could support the route if they were engaged early in the process and understood the benefits of grid resiliency, economic development opportunities and local support for a shift to renewable energy. Unlike the Devers Two process, it was clear to everyone that the State of Arizona would benefit economically and environmentally from the addition of this new transmission capacity.	Comment noted.
27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.4	KOFA	…I worked informally on issues of concerns, including with The US Fish and Wildlife's interest in avoiding the KOFA reserve which led to La Paz County's and other stakeholder support for the line's placement parallel to Interstate 10. Both the Ten West Link staff members and BLM worked constantly with La Paz County staff and political representatives to make sure that the stakeholders could find ways to support the preferred route without jeopardizing other important political relationships that are integral to the fabric of a cohesive, and supportive government.	Comment noted.
27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.5	SUP PREF	…I applaud you for your professionalism and tenacity and fully support both the integrity of the process and the resulting Draft EIS and its' preferred route that I support fully.	Comment noted.
27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.6	RENE	… I believe that the State of Arizona will benefit tremendously for this new capacity which will lay the groundwork for building additional new renewable energy projects (and their resulting jobs) due to SRP and APS both intending to add thousands of megawatts of new solar and battery storage projects during the next eight years.	Comment noted.

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27	1	Kelly Sarber, President/CEO, **Strategic Management Group**	27.7	GEN	I believe that the BLM's process has resulted in a route for a transmission line that has the least probably impacts with the best possible result --- grid resiliency, reliability and new opportunities for renewable energy in our great nation.	Comment noted.
28	1	Norman Simpson, Mayor, **Town of Quartzsite**, Arizona	28.1	SOCIO	The Town of Quartzsite, Arizona is reliant on its Winter Visitor Tourist industry for the overwhelming majority of its mostly sales tax based General Fund Revenue. The Winter Visitor Tourist season is focused during a four month time period of December thru March. During these four months local businesses such as restaurants, grocery stores, fuel stations and R.V parks are already operating at their maximum capacity. Any additional demand for services during the four month season would not be positive for these businesses, nor the Town.	As discussed in the TES, Section 4.15.4.1, the population of La Paz County (data for the Town of Quartzsite was not analyzed) would increase by a minimum of 92 people (0.45 percent increase) and a maximum of 190 people (0.93 percent increase) during the Project construction period, which would be a negligible effect on the county population. This change would cause a negligible to minor, short-term effect on the demand for public services (TES Section 4.15.4.1); it could be inferred that the effect on local businesses would be similar (negligible to minor).
28	1	Norman Simpson, Mayor, **Town of Quartzsite**, Arizona	28.2	SOCIO	Proposed Action: Appears to have the least impact on QUARTZSITE considering both construction and business impact. Alternative 1: 1-10 Route: Appears to have great impact to the Northerly portions of the town. It is unclear on what portion(s) would be of new construction. Alternative 2: BLM Utility Corridor: Appears to have the greatest impact to both the Northerly and Easterly portions of the town. It is also unclear on what portion(s) would be of new construction. Alternative 3: Avoidance Route: Appears to have the second least impact to the town. Alternative 4: Public Lands Emphasis Route: Appears to have great impact to the Easterly and Southerly portions of the town. It is unclear on what portion(s) would be of new construction.	Comment noted. Commenter does not provide input on the Preferred Alternative that was developed with input from La Paz County and Quartzite to avoid the Town of Quartzsite.
28	1	Norman Simpson, Mayor, **Town of Quartzsite**, Arizona	28.3	SUP PA	Given the choices available it is my belief that the Proposed Action route would be the obvious choice for Quartzsite, Arizona showing the furthest proximity to the town.	Comment noted.
28	1	Norman Simpson, Mayor, **Town of Quartzsite**, Arizona	28.4	M&M	Regardless of the route chosen, negative impact to the town would be mitigated by scheduling construction in areas close to the town to occur during the April thru November time period. Construction during this time period could in-fact become a boost to the local economy.	Comment noted.
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.1	OPP PRO	Thank you for the opportunity to comment on the Draft Environmental Impact Statement for Ten West Link 500kv Transmission Line Project. We do not support the Proposed Action Route, which is proposed to cross Kofa NWR, as we have discussed with involved parties.	Comment noted
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.2	SUP PREF	We are supportive of the Agency Preferred Alternative as it does not cross Kofa National Wildlife Refuge (NWR) but suggest one adjustment to the route be considered as described in the following paragraph.	Comment noted
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.3	RNA	Section x-05 is extremely close to the refuge boundary at the Northwestern corner of Kofa NWR and as a result may impact Sonoran pronghorn, which are threatened on the Refuge. The route could be improved by moving section x-05 further from the refuge (for instance by cutting west to route x-06 instead using the southern half of x-05, or by moving the trajectory of section x-05 to the west) and thus keeping the transmission line from running extremely close to the refuge boundary. This would reduce potential for interaction between the Agency Preferred Alternative for the proposed transmission line and Sonoran pronghorn on the refuge and disturbance to refuge habitat and other wildlife on the refuge. Interactions/impacts could include for example route proliferation and increased fire danger, dust, noise and visual	The Preferred Alternative was developed in conjunction with multiple stakeholders, to include avoidance of multiple resources on public lands. Per input from USFWS, the BLM Preferred Alternative avoids the Kofa NWR. BLM feels that the Preferred Alternative would not result in measurable impacts in terms of interactions/impacts to Sonoran pronghorn, especially with Applicant Protection Measures that would be implemented. Section 7 consultation on the Project is ongoing between BLM and USFWS Ecological Services.

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					disturbance. Such a change, depending on exact routing, may reduce or eliminate the need to conduct a section 7 consultation for Sonoran pronghorn.	
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.4	WLF	Section 2.5 IDENTIFICATION OF THE BLM'S PREFERRED ALTERNATIVE Page 2-39 Table 2-13 Special Status Animal Species: Comment: Impacts to Sonoran pronghorn are not listed in this table. Due to the vicinity of the preferred route to Kofa NWR where Sonoran Pronghorn are threatened, impacts to Sonoran pronghorn are possible (dust, noise, visual impacts, increased fire danger, etc.) and should appear in this table.	The Preferred Alternative has been added to the overall comparison of alternatives table that is now Table 2-12. Sonoran pronghorn is listed for all alternatives.
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.5	WLF	4.4.4.1 Direct and Indirect Effects Common to All Action Alternatives Page 4-27 Special Status Wildlife Species Sonoran Pronghorn Original Text: Project construction activities could frighten Sonoran pronghorn if they are in the area. Though the population would likely not substantially expand during the Project timeframe for construction, individual animals or small groups could wander to areas where construction would occur. Suggested addition: Construction activities may keep Sonoran pronghorn from water sources, or may cause them to avoid the areas entirely. Sonoran pronghorn need to move widely across the landscape as habitat conditions may vary dramatically between different locations based on sporadic and localized rainfall.	Addition made.
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.6	WLF	4.4.4.2 Direct and Indirect Segment-and Species-Specific Impacts Page 4-30 Segment p-06 Last part of first paragraph Original Text with unclear language in grey: This segment, along with most alternative segments to Segment p-06 are within the designated experimental nonessential population area for the Sonoran pronghorn; except within the Kofa NWR the Sonoran pronghorn is protected under the same standards as for a threatened species. Sonoran pronghorn may avoid the area during construction, thereby disrupting natural movement patterns, and forage habitat would be lost in the short term until construction areas are revegetated. Suggested text: This segment, along with most alternative segments to Segment p-06 are within the designated experimental nonessential population area for the Sonoran pronghorn; except within the Kofa NWR where the Sonoran pronghorn is protected as a threatened species. Sonoran pronghorn may avoid the area during construction, thereby disrupting natural movement patterns, and forage habitat and access to water sources would be lost in the short term until construction areas are revegetated.	Revision made.

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29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.7	WLF	Page 4-31 Segment x-05 Comment: There is no mention of the extreme vicinity to Kofa NWR, potential impacts to refuge wildlife and habitat including threatened Sonoran pronghorn. Please include this information.	Added Kofa NWR.
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.8	WLF	4.4.7.1 Proposed Action Page 4-40 Wildlife, 2nd paragraph Original text: Segment p-06 crosses about 25 miles of good quality habitat for the Sonoran desert tortoise and is within an extended use area of a reintroduced population of the endangered Sonoran pronghorn, which is afforded special management consideration on a NWR. Suggested text: Segment p-06 crosses about 25 miles of good quality habitat for the Sonoran desert tortoise and is within an area used by a reintroduced population of the endangered Sonoran pronghorn. Comment: Original phrasing not appropriate because multiple animals including females have been documented repeatedly in the vicinity of p-06.	Revision made.
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.9	WLF	4.4.7.4 Alternative 3: Avoidance Route Pages 4-45/46 Comment: The extreme vicinity to Kofa NWR of section x-05 and potential impacts are not addressed. Impacts to Sonoran pronghorn are not addressed at all for this alternative. Please include this information.	Text was added regarding impacts to Sonoran pronghorn under Alternative 3 and the following information was excerpted from the Biological Assessment prepared for the Project. Following the May 2011 publication of a Final Rule establishing a nonessential experimental population (76 FR 25593), a pen for captive breeding of Sonoran pronghorn and five permanent water sources were established in King Valley on Kofa NWR. That pen is about 30 miles south of the portion of the TWL transmission line route along I-10, and about 26 miles south-southeast of the southernmost point of the route in La Posa Plain. Pronghorn from that pen and from the Cabeza Prieta population were released into King Valley starting in 2012–2013, and by 2016, 45 individuals had been released. As of January 2017, there were about 70 animals in this nonessential experimental population on and near Kofa NWR (USFWS 2017). In January 2019 pronghorn were released into the east arm of the Yuma Proving Grounds. At its closest point, the transmission line would be less than 0.5 mile west of the northwest corner of Kofa NWR. Some of the released pronghorn were radio-collared, and the movements of those individuals have been 16 monitored periodically by the Arizona Game and Fish Department. Most individuals in that population have remained in and near King Valley on Kofa NWR and the Yuma Proving Grounds, generally 20 to 40 miles south of the southernmost point of the TWL transmission line route in the La Posa Plain, and farther from the route along I-10. In addition, individuals have been documented in the northern portion of Kofa NWR and adjacent BLM land, including along both the eastern and western ends of the pipeline road and 500 kV transmission line that bisect the

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						northern part of the refuge (Erin Fernandez, USFWS, personnel 24 communication, February 11, 2019). Some individuals have moved relatively long distances from King Valley. For example, a male pronghorn spent about seven months west of Highway 95 near Stone Cabin, 26 about 18–20 miles south of the transmission line route in southern La Posa Plain, and others have moved outside of the Refuge and into or through the Palomas Plain, the southern Ranegras Plain, and north of and near the Little Horn and Eagletail mountains (AGFD 2014, 2015, 2016; Daniel Stewart, Yuma Proving 29 Grounds, Personal Communication, October 25, 2018). O'Brien et al. (2005) developed models of potential Sonoran pronghorn habitat within the boundaries of the nonessential experimental population, including along much of the TWL transmission line route in Arizona. Those models identified much of the area along and near I-10 in the Ranegras and Harquahala plains that will be crossed by the transmission line as non-habitat or as having a low probability of use by pronghorn. The models identified the area to be crossed in the La Posa Plain as a large contiguous block of potential habitat. In that area, the transmission line will traverse south-southeast along the western edge of the Plomosa Mountains for 18 miles. The transmission line route then parallels the Devers-Palo Verde 500-kV transmission line to the east-northeast into the Dome Rock Mountains and across Copper Bottom Pass. That La Posa Plain in this region is bisected to the north-south by US93 and by the Devers-Palo Verde line to the east west, and there are numerous roads and trails in that area that are used for recreation, especially during the winter.
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.10	WLF	4.4.7.5 Alternative 4: Public Lands Emphasis Route Pages 4-47/48 Comment: Impacts to Sonoran pronghorn are not addressed at all for this alternative. Please include this information.	Impacts to Sonoran pronghorn would include the general impacts described for all alternatives in Section 4.4.4.1. Sonoran pronghorn were added to the impacts summary for Alternatives 3 and 4 (and subalternatives, as appropriate).
29	1	Christa Weise, Refuge Manager, **Kofa NWR**	29.11	KOFA	4.4.7.6 BLM Preferred Alternative Wildlife 3rd paragraph Original text: In comparison to the Proposed Action, the Preferred Alternative would have no direct impact on the Kofa NWR because the route avoids the refuge and is adjacent to I-10; would have reduced impacts to the Sonoran pronghorn; Comment: The original text seems incomplete. The extreme vicinity to Kofa NWR of section x-05 in the Northwestern corner is not mentioned and it is not clear that there may be effects to the threatened Sonoran pronghorn on Kofa. We hope that our suggested minor change to the BLM Preferred Alternative will be considered in the final EIS, in which case the above text would not need to be edited.	See response to comment 29.3.

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30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.1	NEPA	CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the state. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code,§ 21070; CEQA Guidelines§ 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Id.,§ 1802.) Similarly for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.	Comment noted. The BLM acknowledges that the CDFW may become a CEQA lead agency if and when the Applicant files a discretionary permit. Presently, there is no CEQA document or CEQA Lead Agency, so CDFW is not yet a trustee Agency, as defined by CEQA. The EIS anticipates the Applicant will obtain all required permits and issuance of Notice to Proceed may be withheld until the Applicant secures such permits.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.2	VEG	COMMENT 1: Appendix 1C, Section 2.4 Page 418 Issue: The preconstruction survey requirements for Harwood's eriastrum and other CNPS Rank 1 and 2 plants are unspecific and may allow surveys that do not adequately quantify occurrences of rare plants in impact areas. Why impact would occur: If preconstruction surveys are inadequate and rare plants in the impact areas are not properly quantified, then there is the potential of significant impacts to rare plants species from project activities. Evidence impact would be significant: Many rare plants are annuals and do not occur in the same location from year to year. Due to this nomadic nature, it is recommended that floristic surveys be performed multiple times within the blooming season for rare plants. There are protocols for performing rare plant surveys available on the CDFW website at: https://www. wildlife.ca. gov/Conservation/SurveyProtocols# 377281 280-plants. Recommended Potentially Feasible Mitigation Measure(s) (Regarding Mitigation Measure or Alternative and Related Impact Shortcoming) Mitigation Measure 1: To reduce impacts to less than significant: Outline specific methods to conduct preconstruction surveys for rare plants that include multiple floristic surveys within the blooming season.	Appendix 1C has been updated to include a new/updated Mitigation Measures to address impacts on sensitive plants and/or vegetation communities. This includes floristic surveys consisting of three distinct survey events to capture the blooming periods for all special-status plants known to occur in the Project area. Survey and protection requirements for Harwood's eriastrum are further developed in the Rare Plant Linear ROW Protection Plan for Harwood's Eriastrum.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.3	VEG	COMMENT 2: Appendix 1 C, Section 2.4.5.1, Page 437 Issue: Measures to address unavoidable impacts are inadequate. Why impact would occur: CDFW generally does not support the use of relocation, salvage, and /or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful. Recommended Potentially Feasible Mitigation Measure(s) (Regarding Mitigation Measure or Alternative and Related Impact Shortcoming) Mitigation Measure 1: To reduce impacts to less than significant: Consider including the following measures to further reduce unavoidable impacts: 1 . Seed Collection for Restoration: Seed from individuals to be impacted would be collected prior to ground-disturbing activities. The seed would be collected following the protocols set forth by the Center for Plant Conservation and, if long-term storage is necessary, placed in a secure seed bank facility such as the Agricultural Research Service National Center for	Section has been updated to address comment. Specifications have been incorporated into MM VEG-CEQA-1 (Appendix 1C, Section 2.4.6).

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					Genetic Resources Preservation in Fort Collins, Colorado. Collected seed would be applied to restoration areas within the Project Area. Restoration plans developed for the proposed Project would be revised to include success criteria for restoration of the special-status plant species to ensure successful re-establishment of the impacted species. Success criteria for impacted special-status plants would be developed through coordination with CDFW. 2. Enhancement of Known Populations: Known populations of the species to be impacted would be enhanced by undertaking actions to increase the size of the known population. Such actions may include improving the quality of occupied habitat (e.g., invasive species removal) and/or seeding to facilitate population expansion. Enhancement of known populations may occur at off-site populations that are currently conserved or within the occupied portions of the Project Area that can be conserved. 3. Preservation of Occupied Habitat: Habitat occupied by the species to be impacted would be permanently protected by establishing a conservation easement. DTRC would coordinate with CPUCU, SLM and CDFW to determine the conditions of the conservation easement, including the required acreage of occupied habitat to be conserved and requirement monitoring and management of the conserved population.	
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.4	VEG	COMMENT 3: Appendix 1 C, Section 2.4.5.1 Page 438 Issue: In the final sentence of this section, the document states "compensation for permanent impacts to potential special status plant species habitat will include off-site creation, enhancement, and/or preservation or participation in an established mitigation bank program at a minimum 3:1 replacement ratio". Why impact would occur: Different mitigation strategies offer different values to the environment. As an example, preservation through acquisition of land with an attached conservation easement or credits from an approved mitigation bank would offer the highest value and a compensation ratio of 2:1 would be appropriate. For on-site restoration, a ratio of 3:1 is appropriate. Finally, for enhancement, which offers the lowest ecological value, a higher ratio should be employed, such as 5:1. Recommended Potentially Feasible Mitigation Measure(s) (Regarding Mitigation Measure or Alternative and Related Impact Shortcoming) Mitigation Measure 1: To reduce impacts to less than significant: Specify different compensation ratios depending on the mitigation strategy utilized.	Section has been updated to address comment. Specifications were incorporated into MM VEG-CEQA-1. A 3:1 replacement ratio is contained within this MM as well as a statement that mitigation can be achieved through different strategies, or a combination thereof.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.5	WLF	COMMENT 4: Appendix 1 C, Section 2.4.5.2 Page 439 Issue: As in the comment above, there are many sub-sections that use a blanket 3:1 compensation ratio for varying mitigation strategies. Why impact would occur: Different mitigation strategies offer different values to the environment. As an example, preservation through acquisition of land with an attached conservation easement or credits from an approved mitigation bank would offer the highest value and a compensation ratio of 2:1 would be appropriate. For on-site restoration a ratio of 3:1 is appropriate. Finally, for enhancement, which offers the lowest ecological value, a	The document provides a variety of compensation ratios ranging from 1:1 to 3:1 and 5:1. These are dependent on type of impact. The ratios vary by species and take into account the type of proposed compensation.

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					higher ratio should be employed, such as 5:1. Recommended Potentially Feasible Mitigation Measure(s) (Regarding Mitigation Measure or Alternative and Related Impact Shortcoming) Mitigation Measure 1: To reduce impacts to less than significant: Specify different compensation ratios depending on the mitigation strategy utilized.	
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.6	M&M	COMMENT 5: Appendix 1C, Section 2.4.2 Page 418 BMP 810-30 states that a Burrowing Owl Nesting Management Plan will be drafted. Please include CDFW as a reviewer for the plan.	MM BIO-CEQA-3 has been updated to list CDFW as a reviewer of the Burrowing Owl Nesting Management Plan.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.7	M&M	COMMENT 6: General Issue: Throughout the document it is stated that mitigation for temporary impacts "will include on-site habitat restoration at a 1 : 1 ratio". CDFW considers a 1: 1 ratio to be inadequate for both permanent and temporary impacts to desert ecosystems. Why impact would occur: Mitigation for both temporary and permanent impacts is crucial for desert ecosystems due to the sensitive nature of these systems. It is well documented that the time required for a desert system to reestablish itself after a disturbance is considerably longer than other systems. All temporary impacts should be mitigated to account for temporal losses of ecosystem services. A 1 :1 ratio does not account for the time that the habitat is affected and no longer able to provide vital ecosystem services. Recommended Potentially Feasible Mitigation Measure(s) Mitigation Measure 1: To reduce impacts to less than significant: CDFW recommends utilizing a 1.5:1 ratio for temporary impacts.	A review of compensation ratios for similar projects was used in determining the 1:1 ratio for temporary impacts. Restoration of conditions of the impacted areas within the Project footprint shall be at 1:1; and creation, restoration, or enhancement of similar vegetation communities offsite shall be 0.5:1, as approved by CDFW and CPUC. Alternatively, payments would be made into an appropriate mitigation program or other mitigation funding mechanism. As the Project would be occurring over a large linear distance, prolonged temporary impacts are not expected to occur as areas subject to temporary impacts would constantly be relocated based on Project progress.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.8	VEG/ WLF	COMMENT 7: General Issue: Project activities may result in take of plant or animals listed under the California Endangered Species Act (CESA). If take of species of plants or animals listed under the California Endangered Species Act (CESA) cannot be avoided during Project activities, please be advised that an Incidental Take Permit (ITP) would be warranted. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats.	See response to comment 30.1. The EIS anticipates the Applicant will obtain all required permits and may withhold issuance of Notice to Proceed until the Applicant secures such permits; this includes CESA Permits from CDFW.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.9	WTR/ WOUS	COMMENT 8: General Issue: Project activities describe project activities within CDFW jurisdictional waters. CDFW opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations. In order for the Department to process a LSAA agreement, the CEQA-certified documents must include an analysis of the impacts of the proposed project on the lake or streambed, an	The document notes that jurisdictional features/habitats shall be avoided where possible and requires that a delineation of such features/habitats is conducted prior to Project activities. It is also stated that the Application must obtain all required regulatory permits prior to the start of Project activities.

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					analysis of the biological resources present on the site, copies of biological studies conducted on the site, biological survey methodology, and a discussion of any alternative, avoidance, or mitigation measures which will reduce the impacts of the proposed development to a level of insignificance. In addition, a discussion of potential adverse impacts from any increased runoff, sedimentation, soil erosion, and/or pollutants on streams and watercourses on or near the project site, with mitigation measures proposed to alleviate such impacts must be included in the CEQA certified documents.	
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.10	GEN	ENVIRONMENTAL DATA CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a data base which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: http://www.dfg. ca.gov/biogeodata/cnddb/pdfs/CNDDB FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: http://www.dfg.ca. gov/biogeodata/cnddb/plants and animals.asp.	MM BIO-CEQA-3 has been updated to require the Applicant submit all applicable environmental data to the CNDDB.
30	1	David Vigil, Senior Environmental Scientist, **California Department of Fish and Wildlife**, Inland Deserts Region	30.11	GEN	FILING FEES The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code,§ 21089.)	The Applicant will pay all required filing fees if and when the CPUC, or other CEQA Lead Agency, files a NOD with the State Clearinghouse.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.1	RENE	Transforming the nation's electricity sources from polluting fossil fuels to clean renewable energy is an essential part of reducing greenhouse gas emissions and limiting the threats posed by global climate change. Defenders supports environmentally responsible development of renewable energy projects, including transmission lines, on public and private lands as a means to transforming to clean renewable energy. We recognize that new transmission lines will be needed in some cases to carry renewable energy to population centers and create improved transmission capacity and reliability. We are committed to guiding our nation's transition to clean energy in a way that protects wildlife and habitats by ensuring renewable energy and transmission projects are built "smart from the start" so as to avoid, minimize and effectively mitigate for negative impacts to our environment, wildlife habitat and other sensitive resources.	Comment noted.

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31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.2	P&N	We understand that the proposed Project is meant to increase grid capacity by connecting the Delaney and Colorado River stations and would facilitate interconnection of any new renewable energy resources in Arizona or California. The proposed Project would also afford the transmission system operators, including the California Independent System Operator (CAISO) the operational flexibility to redirect the power flows under normal and emergency conditions, improving system reliability and deferring transmission upgrades and strengthen regional grid reliability. We appreciate the purpose of the Project and provide the following general comments on the Draft EIS for the Project.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.3	KOFA	In our scoping comments dated May 9, 2016, we had noted that routing the Project through the Kofa NWR is contrary to the mission and management standards established in the National Wildlife Refuge System Improvement Act of 1997. Furthermore, we noted that routing the line through Kofa NWR would not only be incompatible with the purpose of the refuge but that such an action would cause harm to hundreds of bird, mammal, reptile, and amphibian species, including the endangered Sonoran Pronghorn and other priority management species such as desert bighorn sheep, desert mule deer, mountain lion, California leaf-nosed bat, southern yellow bat, Sonoran desert tortoise, Tarahumara frog, Costa's hummingbird, LeConte's thrasher, willow flycatcher, ferruginous hawk, peregrine falcon, and gilded flicker.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.4	KOFA	Indeed, the Fish and Wildlife Service determined in 2017 that "the proposed project does not meet the criteria for an appropriate use and would interfere with and detract from fulfilling the NWRS mission and purpose of Kofa NWR." The USFWS further concluded that "the proposed project cannot be authorized and a right of way permit will not be granted for this project on Kofa NWR." This determination underscores the fact that the BLM and the project developer should abandon consideration of any routes that go through the Kofa NWR.	Comment noted. This is presented in Section 4.7 of the EIS.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.5	KOFA	We further note that the Draft EIS identifies significant and unacceptable impacts to the Kofa NWR and its mission associated with the originally proposed alternative as noted below: "[the Kofa route] segment is almost 36 miles long and follows the existing DPV1 line and corridor with approximately 25 miles crossing the Kofa NWR. Construction along this segment has the potential to alter habitats of various special status species including Gila monster, elf owl, gilded flicker, LeConte's thrasher, and Lucy's warbler. The portion of this segment near and through the Kofa NWR has the potential to disrupt desert bighorn sheep movement and habitat use, as well as impact good quality habitat for the Sonoran Desert tortoise, and disturb golden eagles... The route crosses between the Livingston Hills and New Water Mountains, an identified desert bighorn sheep dispersal corridor, temporarily disrupting movement for forage. This segment... [is] within the designated experimental nonessential population area for the Sonoran pronghorn.... Sonoran pronghorn may avoid the area during construction, thereby disrupting natural movement patterns, and forage habitat would be lost in the short term until construction areas are revegetated. Construction activities associated with Segment p-06 would not be in compliance with the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 and could have significant direct and indirect impacts on the continued management of the Kofa NWR for the conservation and development of natural wildlife. These impacts would be major, with both short- and long-	Comment noted.

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					term effects, and cannot be mitigated. The USFWS states (USFWS 2017) that the construction of a new transmission line across the Kofa NWR should not be considered as a viable alternative."	
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.6	SUP PREF	We appreciate that the BLM's preferred alternative- the modified Alternative 2- does not route the proposed project through the Kofa NWR. We support the BLM preferred alternative that avoids the Kofa and therefore any impacts to the Kofa NWR. We encourage the BLM to select the preferred alternative in the Final EIS and Record of Decision (ROD).	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.7	M&M	Compensatory Mitigation We appreciate that the BLM's preferred alternative- the modified Alternative 2- avoids the Kofa NWR thereby avoiding significant impacts to wildlife and habitat in the Kofa. However, construction, operation and maintenance of the Project through the BLM-preferred alternative would still cause significant impacts which must be addressed through the mitigation hierarchy. We understand that a recent guidance from BLM in IM 2019-0935 instructs agency staff not to require compensatory mitigation to offset impacts from development on public lands. However, we believe that BLM not only has statutory authority to recognize and require mitigation under the Federal Land and Policy Management Act (FLPMA) but is in fact required to do so. FLPMA requires BLM to manage for multiple use and sustained yield, and to avoid unnecessary or undue degradation of resources and values. BLM's obligation under FLPMA to "take any action to prevent unnecessary or undue degradation of the lands" is an independent source of authority for requiring mitigation, in addition to BLM's broad authority to manage the public lands under FLPMA's multiple use and sustained yield principles. Furthermore, the National Environmental Policy Act (NEPA) and associated Council on Environmental Quality (CEQ) regulations require BLM to analyze potential impacts and consider ways to avoid, minimize and mitigate impacts – in accordance with the mitigation hierarchy.	IM 2019-018 (dated December 6, 2018) supersedes IM 2018-093 (and all previous policies regarding compensatory mitigation) and states that BLM must not require compensatory mitigation from public land users under FLPMA. This does not preclude compensatory mitigation required under other federal law, state law, or voluntary actions of the proponent. Compensatory mitigation identified in the DRECP will be required for permitting under CEQA.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.8	M&M	Although the Draft EIS contains limited requirements for compensatory mitigation, we believe those requirements are inadequate. For example, when addressing compensatory mitigation for impacts to birds and bats in California, the DEIS states that "Compensation will be consistent with the most up to date DOI mitigation policy." As described above, the current BLM mitigation policy is inconsistent with the agency's requirements under FLPMA and other laws and regulations. BLM must include specific and appropriate requirements for compensatory mitigation in the Final EIS and ROD.	See response to comment 31.7.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.9	M&M	At the same time, the project developer should make voluntary commitments to appropriate compensatory mitigation, in coordination with BLM, agencies and other stakeholders.	Under IM 2019-018, voluntary compensatory mitigation can be considered by BLM.

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31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.10	LWC	Wilderness Values We appreciate that BLM completed a Lands with Wilderness Characteristics (LWC) inventory update for the DEIS as we requested in our May 2016 letter and analyzed impacts to LWC in the Draft EIS, as required by the Federal Land and Policy Management Act (FLPMA) and BLM guidance (Manual 6310). However, we note that the map included in the DEIS in Appendix 7, Part I (Figure 3.2-3) is not the accurate map. We request the BLM to provide an accurate map in the Final EIS. In addition, we request that the BLM make public the final LWC inventory as soon as possible.	The wrong figure was included in the DEIS as Figure 3.2-3. The figure in the DEIS was originally provided as a part of the baseline information, but it apparently has inherent problems (for example, some of the symbology is not identified in the legend), beyond being the wrong referenced figure. The correct Figure 3.2-3 represents the mapping and data used as a part of the DEIS analysis, so no changes to the FEIS are needed aside from replacement of this figure.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.11	KOFA	In addition, we note that more than 80 percent of Kofa NWR is designated wilderness, another important reason to avoid any route that traverses the refuge. We welcome the BLM's effort to avoid the Kofa NWR and hence the wilderness by routing the Project around the Kofa NWR with its preferred alternative.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.12	SUP DUC	Using portion of WWEC 30-52 for the Project The Draft EIS notes that portions of the BLM preferred alternative for the Project would fall within West Wide Energy Corridor (WWEC) 30-52, which is not a WWEC corridor of concern. Choosing a route through WWEC 30-52 avoids many of the negative impacts to wildlife associated with the proposed route through Kofa NWR. The principle purpose of WWECs is to cluster transmission development in areas where it would do minimal environmental harm. Were the BLM not to use the 30-52 corridor it would undercut the large investment by the BLM and other participants in the WWEC process. For these reasons, we support the BLM in routing the Project through WWEC 30-52 instead of Kofa NWR in its preferred alternative.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.13	WLF	Sonoran Pronghorn The Sonoran Pronghorn is an endangered species under the Endangered Species Act as well as a Species of Great Conservation Need (SGCN) in Arizona. This species was reintroduced into the Kofa NWR in 2013 where the herd now numbers more than 100 individuals with plans to increase that to more than 150. The Draft EIS notes that segment p-06 of the proposed line, which is 36 miles long and follows the existing Devers Palo Verde 1 transmission line contains experimental nonessential population area for the Sonoran pronghorn. The proposed action would result in "major long-term impacts to …Sonoran pronghorn on the refuge." However, under the preferred alternative which avoids the Kofa NWR, the Draft EIS notes that there will be reduced impacts to Sonoran pronghorn. The Draft EIS notes that measures under the Biological Opinion for Sonoran Pronghorn would be implemented during pre-construction, construction, operation and maintenance, and decommissioning. Since the Biological Opinion is not available yet, we cannot now comment on the measures to be implemented, but we support the BLM-preferred alternative 2, which has reduced impacts to Sonoran pronghorn.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable	31.14	WLF	Desert Bighorn Sheep As noted by the USFWS in its January 2017 letter, the Kofa NWR was originally established for conservation of natural wildlife resources with an emphasis on conservation of desert	Comment noted. The Preferred Alternative avoids the Kofa NWR.

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		Energy and Wildlife Policy Analyst, **Defenders of Wildlife**			bighorn sheep. The Kofa population has played an important part in recovery of the species in Arizona, as its relatively robust population has been the source for sheep reintroduced in other areas. However, the population crashed from approximately 800 sheep to roughly 400 between 2000 and 2006, for reasons that include human disturbance. Although the number of sheep has since stabilized, the population has not yet regained pre-2006 levels. This large decline indicates the population is vulnerable, and it is important for the refuge to be kept intact in order to continue recovery.	
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.15	WLF	We understand and acknowledge that the preferred alternative route would still have impacts to desert bighorn sheep in the Copper Bottom Pass below Cunningham Peak. However, we believe that the measure to minimize disturbance to bighorn sheep through limiting the construction activities from January 1 to March 31 in active lambing areas and control of construction activities during pre-construction, construction, operation and decommissioning is appropriate and is a much-preferred option.	Comment noted. APM-BIO-18 limits construction related access and APM-BIO-27 restricts the timing of construction in Copper Bottom Pass during lambing season. These APMs are further described in Appendix 2A.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.16	WLF	Mojave Desert Tortoise and Sonoran Desert Tortoise The Draft EIS correctly notes that these species "…are susceptible to being killed during vegetation removal, crushed in burrows, and run over by construction equipment and vehicles" and that "Any loss of a tortoise, especially a female, has serious ramifications to tortoise populations." Other threats related to project construction and maintenance such as invasion of non-native plant species, especially brome grasses, predation of juvenile desert tortoise from ravens perching on transmission structures, and the potential for increased recreational vehicles also pose significant risk to desert tortoise. We support the BLM preferred alternative that avoids desert tortoise habitat near Mule mountains and only has minor impacts to Sonoran Desert Tortoise in Plomosa and Dome Rock Mountains. This is a better route than the applicant proposed route which would have crossed 25 miles of good quality Sonoran Desert tortoise habitat. We believe the avoidance of good quality habitat combined with applicant proposed measures and best management practices will minimize the impacts to Desert Tortoise.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.17	WLF	Burrowing owls Burrowing owls are continuing to decline in California. The Draft EIS states that burrowing owl is present or could occur within the California portion of the Project. The Draft EIS, under Mitigation Measure MM BIO-CEQA-8 requires that the Project applicant conduct pre-construction burrowing owl surveys using a qualified biologist knowledgeable of the species. We support the requirement of the survey and subsequent avoidance measures to avoid any existing burrows. Furthermore, we support the requirement to avoid active burrows, and coordination with California Department of Fish and Wildlife in any efforts to translocate burrowing owls if avoidance is not possible.	Your support for the analysis is noted. Additionally, MM BIO-CEQA-3 has been updated to list CDFW as a reviewer of the Burrowing Owl Nesting Management Plan. This plan is available in Appendix 2B, as a component of the Avian Protection Plan/Bird and Bat Conservation Strategy Plan.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.18	WLF	Mojave Fringe-toed Lizard The Mojave fringe-toed lizard is a BLM sensitive species as well as a California state Species of Special Concern. We note that significant mortality of these species were documented during construction and operation of Colorado Rivers substation despite the implementation of avoidance measures including enforced speed limits, vehicle escorts and other avoidance measures. The Draft EIS notes that BLM's preferred alternative- the Alternative 2 would "potentially disturb 48.2 acres of DRECP modeled Mojave fringe-toed lizard habitat, more	Comment noted.

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					than any other Action Alternative…" However, the number of acres impacted- 48.2 acres- is only 0.037% of all modeled Mojave fringe-toed lizard habitat across the Chuckwalla Valley. We support the BLM required Best Management Practice (BMP) to require Fringe-toed Lizard Linear ROW Protection Plan that identifies specific conservation measures to minimize project-related impacts and maps suitable habitat within construction zones. We also support the requirement for clearance surveys if suitable habitat characteristics are identified during the habitat assessment.	
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.19	WLF	The Draft EIS mentions that "Compensation for temporary impacts to desert tortoise and special status terrestrial herpetofauna (including Couch's spadefoot toad and Mojave fringe-toed lizard) potential/modeled habitat will include on-site habitat restoration at a minimum 1:1 ratio." However, it is not clear what sort of on-site mitigation would be required. We encourage the BLM to specify appropriate on-site habitat mitigation measures in the Final EIS.	See MM WIL-CEQA-9 for compensation to desert tortoise and MM-WIL-CEQA-11 for terrestrial herpetofauna (Appendix 1C). On site habitat restoration would follow guidelines in the DRECP (e.g., LUPA-BIO-7, etc.) and NECO (Appendix E, Desert Restoration) and would be detailed in the Project's required Habitat Restoration Plan.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.20	WLF	Avian Protection A 2014 meta-analysis of studies of bird strikes on power lines concluded that between 12 and 64 million birds are killed each year at U.S. power lines and that "bird mortality at U.S. power lines constitutes a major source of anthropogenic mortality. We are also pleased that the BLM-preferred alternative crosses the Colorado River at an area where the banks of the river have been channelized, because doing so will reduce the risk of bird collisions.	Comment noted.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.21	WLF	Nevertheless, it is well documented that migratory birds fly along the Colorado River during migration periods, some of which may be Endangered or Threatened under Endangered Species Act, such as Yellow-billed Cuckoo and Southwest Willow Flycatcher. While following the Avian Power Line Interaction Committee (APLIC) guidelines and methodologies to minimize the potential for avian collision and electrocution, as stated in the Draft EIS, is important, many birds that migrate at night will not be able to see the lines. The Final EIS and ROD should include guidance on lighting in order not to attract nocturnal migrants to the infrastructure or the lines.	No lighting is proposed for the Colorado River area. As presented in Appendix 2A, BMP BIO-33 pertains to project lighting and APM BIO-21 includes APLIC guidelines. Additionally, MM WIL-CEQA-1 includes compliance with the APLIC guidelines.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy Analyst, **Defenders of Wildlife**	31.22	WLF	Consistent with industry best practices the developer should develop an Avian Protection Plan covering the entire project footprint. BLM should include requirements for the preparation and implementation of an Avian Protection Plan, including measures for nocturnal migrants, in the Final EIS and ROD. The Avian Protection Plan should put emphasis on the Colorado River crossing and the crossing of agricultural fields in the California segment of the Project. We support the requirement that bird diverters such as aerial marker balls or other visibility markers be placed on overhead wires at the Colorado River crossing and the vicinity, including the floodplain. We also support the use of deterrents to reduce nesting and perching by ravens and other predatory birds and the requirement to monitor the effectiveness of anti-electrocution design. These measures will help reduce predation of juvenile desert tortoise by ravens.	An Avian Protection Plan will be required, inclusive of these measures as it will incorporate APLIC (2006, 2012) guidelines. This plan is available in Appendix 2B. Additionally, a Raven Management Plan has been included in Appendix 1C (MM WIL-CEQA-2) which includes minimization of the attraction of ravens to the Project site. The Raven Management Plan is available in Appendix 2B.
31	2	Rob Peters, Ph.D., Senior Southwest Representative; Rupak Thapaliya, Renewable Energy and Wildlife Policy	31.23	SUP ALT2	In conclusion, we support Alternative 2- the BLM Corridor Utility Route- because this alternative: • Avoids the Kofa NWR, thereby eliminating impacts on the Kofa NWR, its wildlife and	Comment noted.

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		Analyst, **Defenders of Wildlife**			the habitat, • Is partially located within a segment of the WWEC 30-52, • Reduces impacts to desert bighorn sheep and limits the impacts to the Copper Bottom Pass area, • Reduces impacts to the Sonoran Pronghorn, • Limits impacts to Sonoran Desert Tortoise to Plomosa and Dome Rock Mountains, and • Avoids Mojave Desert Tortoise habitat in Mule mountains.	
32	1	Micah Horowitz, AICP, Project Manager, Planning and Engineering Section, **Arizona State Land Department**	32.1	SUP PRO	ASLD understands the Ten West Link project vision of planning and constructing a 500-kV transmission line which would enhance the State of Arizona's transmission system efficiency, facilitate new energy development, and promote economic development. The Department has reviewed the proposed alternatives, including the BLM Preferred Alternative and does not object to the proposed route at this time, but will continue to analyze impacts to ASLD interests as well as potential economic development opportunities associated with this project and alignment.	Comment noted.
32	1	Micah Horowitz, AICP, Project Manager, Planning and Engineering Section, **Arizona State Land Department**	32.2	ROW	As mentioned in ASLD's May 9, 2016 Scoping comment, the Department considers a number of factors when evaluating transmission line proposals which may cross State Trust land including minimizing the fragmentation of State Trust land. Figure 4.11-25 in Appendix 7 (reference attachment A) depicts a viewshed rendering structures offset from the 1-10 Right of Way. The Department understands these are preliminary depictions, and requests the Bureau of Land Management directly coordinate any detailed planning adjacent to State Trust land to ensure the 200-foot Right of Way described in the EIS approaches State Trust land at an acceptable location to minimize impacts to the Trust.	Comment noted. We'll continue to coordinate with ASLD directly and as a cooperating agency. The Project proponent is responsible for acquisition of ROW across state lands.
33	1	Faye Streier, NEPA Coordinator, **Bureau of Reclamation**, Lower Colorado Region	33.1	RNA	Move Segment i-01, near its connection with Segment p-01, north by approximately 0.13 miles.	Project proponent is in discussion with Reclamation on spanning this area.
33	1	Faye Streier, NEPA Coordinator, **Bureau of Reclamation**, Lower Colorado Region	33.2	RNA	Move Segment i-03 that crosses the CAP canal west of the Little Harquahala Pumping Plant south by approximately 0.6 miles.	Project proponent is in discussion with Reclamation on spanning this area.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.1	LU	Metropolitan remains concerned about the how the proposed project will affect Metropolitan-owned land in the Palo Verde Valley in Riverside County, California, specifically we are concerned that the installation of the proposed transmission will affect field operations, irrigation, aerial spraying, wind breaks, as well as current and future land uses. These effects could alter the potential for Metropolitan to lease these lands in accordance with its management objectives or realize the anticipated water savings on both the Metropolitan fee property and other private property currently enrolled in the Program.	Project proponent is responsible for identifying tower locations and acquisition of ROW from private landowner. The TES was updated to clarify that a portion of the private agricultural lands in CA are in fee-ownership by a local water district or are in local water district agricultural programs. The concerns of the Metropolitan Water District are addressed in the discussion of noxious weed, land use, or agricultural impacts in TES Sections 4.5.4.1, 4.5.5.1, 4.8.4.1, 4.8.5.3, and 4.8.5.5.
34	1	Jennifer Harriger, Team Manager, Environmental	34.2	LU	Based on our review, the Project's proposed alignment traverses a portion of the property that Metropolitan purchased in 2015, as well as other privately owned lands which are enrolled in	See response to comment 34.1.

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		Planning Section, **Metropolitan Water District of Southern California**			the Fallowing Program, in Riverside County, California. The alignment and its impacts on Metropolitan's fee-owned and Fallowing Program enrolled lands does not appear to have changed since the release of the NOI and as such, our concern with Land Use Issues remain.	
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.3	LU	The Project's proposed route alignment should avoid Metropolitan's fee property and other private lands currently enrolled in the Fallowing Program. We are concerned that the installation of the proposed transmission lines will affect field operations, irrigation, aerial spraying, wind breaks, and have other impacts on current and future land uses. These effects could alter the potential for Metropolitan to lease these lands in accordance with its management objectives and to realize the anticipated water savings on both the Metropolitan fee property and other private property currently enrolled in the Fallowing Program.	See response to comment 34.1. The TES previously summarized potential impacts to agriculture from Project operations, mentioning crop production that involves mechanical irrigation, automated farming methods, or farming equipment. This discussion was expanded in Appendix 1C to address the specific concerns raised by MWD. A new CEQA mitigation measure has been added (MM AG-CEQA-1) to Appendix 1C to address this comment and further discussion added to Impact AG-5 has also been added.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.4	LU	The placement of transmission structures can cause the following agricultural impacts: • Create problems for turning field machinery and maintaining efficient fieldwork patterns, thus impacting the ability to conduct cropping on the land; • Increase soil erosion by requiring the removal of windbreaks that were planted along field edges or between fields; • Create opportunities for weed and other pest encroachment; increasing costs both to manage lands that are fallowed and to manage lands in agricultural use; • Compact soils and damage drain tiles; • Result in safety hazards due to pole and guy wire placement; • Hinder or prevent aerial spraying or seeding activities by planes or helicopters; • Interfere with moving irrigation equipment; • Hinder future consolidation of farm fields or subdividing land; • Restrict the type of crops the tenant-farmer may cultivate; and • Restrict the Palo Verde Irrigation District's operations and maintenance of surrounding canals and drains.	See response to comment 34.1. A new CEQA mitigation measure has been added (MM AG-CEQA-1) Appendix 1C to address this comment and further discussion added to Impact AG-5 has also been added.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.5	AG	Metropolitan requires the lands enrolled in the Fallowing Program to be rotated in and out of production, so that no parcels are permanently fallowed as part of the Fallowing Program. By locating power lines and associated facilities on a Fallowing Program enrolled parcel, there is the potential that all or a portion of the parcel will become permanently non-producing, placing a greater burden on remaining lands and affecting the current land management and goals of the Fallowing Program, which include promoting a thriving agricultural community in the Palo Verde Valley.	See response to comment 34.1. The TES previously summarized potential impacts to agriculture from Project operations, mentioning crop production that involves mechanical irrigation, automated farming methods, or farming equipment. This discussion was expanded in Appendix 1C to address the specific concerns raised by MWD. A new CEQA mitigation measure has been added (MM AG-CEQA-1) to Appendix 1C to address this comment and further discussion added to Impact AG-5 has also been added.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.6	SOCIO	Additionally, new transmission facilities would require easements, which may bifurcate land holdings and adversely affect market rents and impact property values. The specific location of the transmission lines would impair access to the property and impact future placement of utilities and roads to service Metropolitan's assets and infrastructure.	See response to comment 34.1.

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34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.7	WTR	Metropolitan is developing new leases provisions for its fee owned properties, to encourage greater water efficient crop production, and innovative irrigation technology. The operation of irrigation systems such as pivot sprinklers will be severely impacted by the locations of the transmission facilities. The proposed location of the transmission line Project could thus prevent Metropolitan from promoting greater efficiency in the area and, in the process, impact water supplies for the 19 million people that Metropolitan serves.	See response to comment 34.1.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.8	LU	Development associated with the Project must not restrict any of Metropolitan fee property management objectives of revenue generation, augmentation to Metropolitan's Colorado River supply by reducing consumptive water use on the land, and maintaining local agricultural production. Metropolitan has been managing its lands to reduce consumptive water use, and Metropolitan is currently engaged in an effort to negotiate new leases on its properties to generate greater water savings and promote efficient and innovative technologies throughout the Palo Verde Valley. By impacting these objectives, the proposed Project may impact the ability to advance land management throughout the area, and will also impact the water supplies of southern California.	See response to comment 34.1.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.9	PI	In order to avoid potential conflicts with Metropolitan's facilities, Metropolitan requires that any design plans for any activity in the area of Metropolitan fee property be submitted for our review and written approval. Approval of the Project where it could impact Metropolitan fee property should be conditioned on Metropolitan's approval of design plans for that portion of the Project.	See response to comment 34.1.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.10	LU	All submitted Project designs or plans must clearly identify Metropolitan fee property and other private lands currently enrolled in the Fallowing Program. While impacts to these areas should be avoided by modifying the proposed Project, if the Project continues to impact these areas, these impacts must be clearly delineated.	See response to comment 34.1.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.11	AG	Appendix 2C Applicable CMAS and Compliance Summary outlines various strategies for pest control, weed control or dust control measures. The use of any chemical pest, weed, or dust control measures used on or near any area that may wash into or blow onto Metropolitan fee property or agricultural lands participating in the Fallowing Program should be conditioned on the approval of Metropolitan or its designated representative. While Metropolitan appreciates that BLM specifies that only non-toxic substances approved by state and federal regulations will be used, some lands may be used for farming organic products and chemical use would be inconsistent with current land use.	This comment will be referred to DCRT. A new CEQA mitigation measure has been added (MM AG-CEQA-1) to Appendix 1C to address this comment and further discussion added to Impact AG-5 has also been added.
34	1	Jennifer Harriger, Team Manager, Environmental Planning Section, **Metropolitan Water District of Southern California**	34.12	LAW	Executive Summary ES-2 states: "WAPA needs to consider DCRT's application for funding under §301 of the Hoover Power Plant Act of 1984 and the Transmission Infrastructure Program. Additionally, WAPA is considering whether to take an ownership interest in fiber optic communication links over the Project's fiber optic overhead ground wire." Metropolitan requests clarification on the DCRT's application for funding under §301 of the Hoover Power Plant Act of 1984 (HPAA 1984). There does not appear to be a §301 in either version of the HPAA. Copies of both are attached to this letter. Metropolitan suggests referencing the latest amended version of the HPAA dated 2011.	The law cited is incorrect. It should be the American Recovery and Reinvestment Act of 2009, Title III, Section 301 (“Western Area Power Administration Borrowing Authority). This was revised, as was the description of the authorization, which was also incorrect.

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35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.1	SUP ALT 1	Depending on which action goes through (Proposed Action or Alternatives 1 - 4) the number of types of resource that may be affected can change. Once an action has been decided, the Tribe requests to be notified. As stated in our letters sent July 6, 2017, and September 11, 2017, the Tribe preferred the route following Interstate 10 (Alternative 1). The reasoning behind this preference was the avoidance of known resources and areas with increased sensitivity to contain native intact sediments.	The Preferred Alternative considers numerous resources in addition to cultural resources; however, cultural resource sites would be avoided whenever possible.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.2	NA	The Tribe and THPO request any draft and final copies of the Monitoring and Discovery Plan. Any draft documents should be provided to the Tribe, and adequate time to allow for a comprehensive review of the document. Additionally, while a Tribal Participation Plan is being developed as a stand-alone document it is recommended that it is mentioned in the Monitoring and Discovery Plan to ensure that it if followed.	Comment noted. BLM will continue to consult with the Tribe and provide requested documents for your review and input.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.3	M&M	As stated in previous correspondence, the Tribe requests the presence of monitors from the Twenty-Nine Palms Band of Mission Indians during ground disturbance.	As presented in part III section D of the Programmatic Agreement (Appendix 2D), the BLM encourages the Proponent to provide all of the Tribes that were consulted the opportunity to monitor and be on site during ground disturbing activities.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.4	M&M	For all construction projects, the Tribe recommends and prefers avoidance. When avoidance cannot be used, the Tribe recommends Tribal Monitors. The Tribe requests the presence of monitors from the Twenty-Nine Palms Band of Mission Indians during construction, especially in areas with known cultural resources and areas with increased potential to contain intact prehistoric sediments.	Avoidance of cultural resources is preferred and will be implemented during final project design. See response to comment 35.3 regarding tribal monitors.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.5	M&M	The Tribe requests that a list of all personnel who have attended the Worker Cultural Resources Awareness Program is provided to Tribes that request this documentation. Additionally, the THPO requests to be provided the slides/presentation material prior to distribution or training.	As presented in part XII section C of the Programmatic Agreement (Appendix 2D), the consulting parties will have the opportunity to review the cultural resource training materials and the Proponent will maintain records of all personnel that receives the training.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.6	M&M	The THPO has previously commented on Compensatory Mitigation in regards to the Desert Renewable Energy and Conservation Plan (DRECP). During consultation the Tribe recommended that the formula should include input from all consulting tribes and the benefits of the collected fees should be evenly distributed. Additionally, the developer should have an understanding that any inadvertent discoveries would not be included in these compensatory fees, but that it would have to be paid for by the developer as a separate expense. This mitigation fee does not replace consultation on specific resources that may be affected by an individual project. For the distribution of fees, the Tribe recommended that the Lead Agency approach a non-profit tribal organization (e.g., the Mica Group/Tides Foundation) to administer programs that are funded by the mitigation fees. The non-profit would also be responsible for the accounting of all fees for each project and subject to an annual audit. The annual report would be distributed to the BLM and consulting party tribes. The non-profit tribal organization's administration fee would be added to the overall direct fee that is collected from each developer.	Cultural resource mitigation fees will be required per the CDCA Plan and state requirements.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.7	NA	The Tribe requests access to the results of the sensitivity model once it is completed. Additionally, the THPO requests to review the results and to provide additional comment if necessary on the Sensitivity Model.	This was provided as requested.

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35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.8	NA	There are additional mitigation measures in concern to Conservation and Management Actions. As stated in the letters sent May 2, 2017, and April 20, 2018, the project area is within the Chemehuevi Traditional Use Area and contains landscapes and culturally sensitive areas that concern the Tribe.	Comment noted.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.9	M&M	While the compensatory fee should not assign a monetary value to cultural resources, Tribal perspectives and values should be evaluated and considered in the calculations.	The compensatory mitigation fee for cumulative effects applies to lands administered by BLM-California, as prescribed in the Desert Renewable Energy Conservation Plan (DRECP) Programmatic Agreement (PA) that was executed February 5, 2016. The BLM will follow the process described in the DRECP PA for the Ten West Link project for those portions of the project that are on lands administered by BLM-California.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.10	NA	As stated in previous correspondence, the Tribe prefers the route that will provide the least disturbance and avoids cultural resources.	Comment noted.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.11	M&M	The Tribe requests to be notified of the Draft Historic Resources Mitigation and Management Plan and time to input comments on this document. For mitigation of specific resources, the Tribe recommends a varied approach allowing for the proper treatment of each resource. The final disposition of the resource should come about with consultation from the applicant, representatives from the lead agency, and interested tribes. Re-burial, curation, or other dispositions should be analyzed based on the specific resource.	As presented in part VI section I of the Programmatic Agreement (Appendix 2D), consulting parties will have the opportunity to review and comment on the HPTPs.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.12	NA	The Tribe recommends avoidance of cultural resources. Currently the Tribe will defer comments until after the Consulting Parties Meeting.	Comment noted.
35	1	Anthony Madrigal, Jr., Director of the THPO, **Twenty-Nine Palms Band of Mission Indians**	35.13	NA	While this letter addresses the Draft Environmental Impact Report and the finalization of mitigation measures, the Tribe requests government-to-government consultation throughout the life of the project. The Tribe requests to be notified of any updated reports. The Tribe and THPO look forward to continuing working with the Bureau of Land Management on this project.	Comment noted. Consultation with the Twenty-Nine Palms Band of Mission Indians will be ongoing.
36	1	Stewart B. Koyiyumptewa, Interim Manager, **Hopi Cultural Preservation Office**	36.1	CUL	We have now reviewed the enclosed Draft Environmental Impact Statement and Draft Resource Management Plan Amendments and understand in the BLM Preferred Alternative 32.5% of the project area has been surveyed for cultural resources, 38 National Register eligible and unevaluated sties have been identified and 120 sites requiring evaluation are projected. Key resources projected to occur include trails and intaglio. Therefore we have determined that prehistoric sites in Arizona are and will be identified that will be adversely affected by project activities. Therefore, we look forward to continuing consultation on the Programmatic Agreement and Class I and III cultural resource surveys of the area of potential effect and any proposed treatment plans for review and comment.	Comment noted. Consultation with the Hopi will be ongoing.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.1	SUP PREF / CUL	While CRIT supports the Bureau of Land Management's (BLM) decision to select a … Preferred Alternative" that moves the Line away from the Mule Mountains, the Tribes are still troubled by the Project's potential to irreparably damage sensitive resources and cultural landscapes and BLM's failure to thoroughly study these issues in the DEIS. As a result, CRIT	A Class I cultural inventory was completed on all potential routes with a 1-mile analysis buffer. There was sufficient existing information within this 1-mile buffer to understand the nature, density, and distribution of cultural resources within the analysis area. The BLM used this information to develop

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					requests that BLM delay release of any final EIS or Record of Decision until after adequate surveys have been completed and revised analyses have been prepared and made available for public comment.	the range of alternatives analyzed in the DEIS. A Class III inventory was completed where the Proposed Action came closest to the Mule Mountains (P-17 and P-18). The BLM adjusted the Preferred Alternative based on information provided to BLM by the Tribes. In addition, pursuant to the regulations that implement Section 106, the final selected alternative will be fully inventoried, which will inform the ultimate design and construction of transmission line infrastructure.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.2	NA	As a preliminary matter, the Colorado River Indian Tribes are a federally recognized Indian tribe comprised of over 4,440 members belonging to the Mohave, Chemehuevi, Hopi and Navajo Tribes. The almost 300,000-acre Colorado River Indian Reservation sits astride the Colorado River between Blythe, California and Parker, Arizona. The ancestral homelands of the Tribes' members, however, extend far beyond the Reservation boundaries. Significant portions of public and private lands in California, Arizona, and Nevada were occupied by the ancestors of the Tribes' Mohave and Chemehuevi members since time immemorial. These landscapes remain imbued with substantial cultural, spiritual, and religious significance for the Tribes' current members and future generations. For this reason, the Tribes urge BLM to press pause on moving forward with the proposed Project, which has the potential to transform a significant cultural landscape to an industrial one. In the event the Project does move forward, however, BLM must take steps to revise the DEIS to adequately consider and mitigate for impacts to cultural and other resources.	Existing corridors were used to the fullest extent, except where avoidance was needed for a wildlife refuge, towns, recreation areas, Indian and military reservations, historic properties, and known sacred sites. See comment response 37.1.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.3	NEPA	The purpose of NEPA is to inform the public and agency decisionmakers of a project's potential environmental impact before those decisionmakers act. By requiring an EIS to provide a complete picture in advance, the drafters of NEPA expected that decisionmakers would make better decisions. Robertson v. Methow Valley Citizens Council, 490 U.S. 332,349 (1989) (NEPA "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts "). BLM has an obligation pursuant to NEPA to conduct its analysis "objectively and in good faith, not as an exercise in form over substance, [] not as a subterfuge designed to rationalize a decision already made ... [and] not just to file detailed impact studies which will fill governmental archives." Metcalf v. Daley, 214 F.3d 1135, 1142 (9th Cir. 2000); see also Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1300 (9th Cir. 2003) (NEPA requires that federal agencies "consider every significant aspect of the environmental impact of a proposed action ... [and] inform the public that [they have] indeed considered environmental concerns in [their] decision-making process[es].") (citations omitted). Beyond merely disclosing potential environmental impacts, NEPA require agencies to develop tactics to address them. Specifically, the EIS must "[i]nclude appropriate mitigation measures " and discuss the "[m]eans to mitigate adverse environmental impacts." 40 C. F.R. §§ 1502.14(f), 1502.16(h). The statute "require[s] that an EIS discuss mitigation measures, with 'sufficient detail to ensure that environmental consequences have been fairly evaluated.' An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective." South Fork Band Council of W. Shoshone of Nevada v. U.S. Dep't of Interior, 588 F.3d 718, 727 (9th Cir. 2009) (quoting Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989)). Where, as here, the environmental review document fails to fully and accurately inform	The DEIS carefully considered all available information to ascertain impacts to resources. Consequently, numerous alternative routes to the Proposed Action were considered and analyzed, due to the known and possible resources in the study area. Mitigation measures were devised to address impacts. This information was studied and analyzed and made available to the public and decision-makers in the DEIS, with substantive comments being acted upon to develop the FEIS and ROD.

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					decisionmakers and the public of the environmental consequences of proposed actions, or identify ways to mitigate or avoid those impacts, it does not satisfy the basic goals of NEPA. See 40 C.F.R. § 1500.l(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. "). As a result of the DEIS's numerous and serious inadequacies, there can be no meaningful review of the Project by either the public or BLM' s decisionmakers.	
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.4	SUP PREF	The Tribes continue to have grave concerns about the potential of this Project to impact sensitive resources and cultural landscapes and BLM's failure to adequately discuss these issues in an EIR. However, to the extent that BLM decides to move forward with this Project, CRIT supports BLM's selection of a route that is located further from Mule Mountains.	See comment response 37.3. The CPUC and BLM decided to use this EIS, in place of an EIR, to satisfy the needs of CEQA, and consequently worked closely together over the past two years towards this effort. However, the CPUC has yet to formally adopt the EIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.5	NA	As documented in the· DEIS, the Mule Mountains contain "an archaeological district" that is listed in the NRHP and is culturally significant for the Indian tribes along the Colorado River. The district includes a natural water catchment and was and is an important junction of indigenous travel routes and a focal point of human activity. Numerous trails extend away from this district and are related to the intaglios and petroglyphs." DEIS at 3-31. In addition, the area is important for spiritual access for CRIT Tribal Members. DEIS at 3-33. The CRIT THPO Office has shared additional information about the importance of this area with BLM Staff. For these and other reasons, the Tribes support BLM's efforts to move the new Line further away from this sensitive area.	The general significance and some of the specific details are known about the Mule Mountains area (FEIS Section 3.5.2.2, subsections Cultural Resources of Concern to Indian Tribes and Cultural Resources Sensitive to Indirect Effects). As indicated, the BLM and others accompanied the CRIT and Quechan Tribes into the field to examine the resources of this area. Consequently, the Preferred Alternative was moved further north away from this sensitive area.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.6	ROUTE	While CRIT supports the selection of an Alternative that is further from Mule Mountains, the Tribes are troubled by the Preferred Alternative's increased length and correspondingly increased capacity to disturb the landscape. Specifically, CRIT is concerned about the development of the Line along segments x-15 and x-16, which appear to be located on relatively undisturbed desert land. This concerned is heighted by the fact that neither segment has been adequately surveyed. In particular, only 12.3 percent of Segment x-16 has been surveyed.	The relatively minor increase in length of the Preferred Alternative route was developed in order to avoid communities and resources, as discussed in comment responses 37.1, 37.2, and 37.5. As noted in Section 4.5.1 of the FEIS, once a route is selected, a Class III cultural resource inventory will be conducted. As noted in Section 4.5.7.1, potential adverse effects to historic properties would be resolved in accordance with the provisions of the PA and the development of specific HPTPs. Avoidance of cultural resources by final design and construction would be the preferred adverse effect resolution measure.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.7	RNA	To ensure the Project avoids both the sensitive Mule Mountain area and the increased disturbance of segments x-15 and x-16, CRIT requests analysis of an Alternative that follows x-19, ca-09, and ca-07, and then continues straight across on ca-06 before turning south. It appears that this alternative would meet the project's purpose and need and avoid increased impacts associated with disturbing the desert landscape. This alternative should be included in a revised EIS and circulated for additional public comment. See 42 U.S.C. § 4332(E) (directing federal agencies to "study, develop, and describe appropriate alternatives").	These segments (ca-06, ca-07, ca-09, and x-19) have been analyzed as part of full-route Alternatives 1, 3, and 4. All Alternatives were studied and analyzed using available data. See comment response 37.11.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.8	PI	As BLM and DCRT are both aware, CRIT has submitted extensive comment letters on prior versions of this EIS and the Project's Programmatic Agreement. CRIT appreciates that BLM has made some modifications, especially to the Programmatic Agreement, that are responsive to the Tribe's stated concerns. However, many of the Tribes' most pressing comments have not been addressed. CRIT incorporates these prior comments by reference and briefly reiterates some of the most concerning issues here.	Numerous meetings and coordination occurred between the BLM and the CRIT THPO representatives and other tribes over the past two years to understand tribal concerns and issues. The input received from the meetings was used in identification of project alternatives including the Preferred Alternative in the EIS. BLM tribal relations policy considers tribal consultation to be on-going, and the BLM will continue to consult with tribes and make a continued effort to address the tribes' comments to the extent

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						feasible.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.9	CUL	CRIT continues to object to BLM's decision to allow the Applicant to conduct Class III surveys after the route has been selected. This deferral of analysis renders the DEIS wholly inadequate. For instance, the DEIS admits that "[s]pecific impacts to historic properties are unknown until Class III identification studies and indirect effect analyses of the selected route are completed and additional information regarding engineering design is available. As a result, the evidence is currently insufficient to state specific direct or indirect impacts to particular historic properties or to discuss specific measure to resolve potential effects to those properties." DEIS at 4-59. CRIT also objects to BLM's decision to defer analysis of impacts to known historic properties until that time. For instance, BLM offers no explanation for why it cannot do the work now to determine if eligible sites can be avoided by Project design or why it cannot determine if sites such as those listed in the DEIS at 4-65 have the requisite degree of integrity to be impacted by the Project. It also fails to explain why it has not yet determined if certain areas qualify as Traditional Cultural Properties. E.g., DEIS at 3-34. Without a discussion of proposed mitigation measures or treatment plans, CRIT cannot tell if the BLM has adequately considered measures to alleviate harm. Additional information about these known resources is both available and important to BLM's decision making; as a result, it must be provided in the EIS. See 40 C.F.R. § 1502.22(a) ("If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.") (emphasis added).	BLM's identification efforts are being conducted in accordance with 36 CFR 800 regulations and a PA that governs the 106 process for the Project. NEPA requires that all Alternatives be treated equally for comparative analysis. With the numerous alternative routes and sub-alternatives throughout the study area comprising hundreds of miles, it is impractical to conduct a Class III survey on all routes in the study area. A Class I inventory was completed on all Alternatives and sub-Alternatives within the study area, with a 1-mile buffer analysis area. The Class I inventory documented sufficient existing information to understand the nature, density, and distribution of cultural resources to the extent it was possible to develop the range of alternatives analyzed in the DEIS and Project impacts to cultural resources.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.10	NA	CRIT likewise objects to the release of the DEIS prior to completion of the ethnographic assessment. This document is intended to guide BLM's decision making process. It cannot do so if it is completed after the route is already selected.	The ethnographic assessment is currently being prepared as part of the Section 106 process, which per law and guidance from the CEQ and the ACHP, can run concurrently with the NEPA process. This study will be complete prior to the ROD.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.11	CUL	BLM's deferral decision is particularly problematic because so little of the Project area has been subject to prior surveys. While BLM asserts that "[m]any of the segments that comprise the Proposed Action and Action Alternatives have been intensively surveyed for cultural resources by other projects in the past" (DEIS at 3-28), the data presented illustrates a different picture. Of the 64 total segments, only 15 have been surveyed above 50 percent. Moreover, while BLM claims that "minimum survey coverage of 25 percent or more is considered to be adequate to estimate the projected number of cultural resources" (DEIS at 4-60), it provides no justification for this number. And fewer than half of the segments have been surveyed above 25 percent. This scarcity of data calls into question whether BLM can adequately select a route that adequately avoids cultural resources.	Avoidance of cultural resources, as well as minimizing the project footprint, is BLM policy regarding the treatment of cultural resources. BLM believes this can be accomplished through Class III pedestrian survey of the final selected alternative and design and engineering decisions on the placement of transmission line infrastructure. In the event that a select few resources cannot be avoided, the BLM will resolve and mitigate any adverse effects pursuant to Section 106 and its implementing regulations found at 36 CFR 800.6.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.12	LAW	As BLM is aware, CRIT continues to object to BLM's insistence that federal law require curation of cultural resources. E.g., DEIS at 2D-9 to -10. BLM has yet to provide an adequate explanation of its position. Moreover, CRIT is extremely concerned that BLM has attempted to impose its erroneous and harmful position on non-federal land and to non-eligible artifacts. For instance, the Programmatic Agreement requires curation for artifacts found on California state lands (DEIS at Appendix 2D-10), even though California law prioritizes preservation in place (CEQA Guidelines § 15126.S(A); Madera Oversight Coalition v. County of Madera, 199 Cal.App.4th 48 (2011)). It also states that BLM will attempt to force private land owners	Comment noted. Relevant cultural resources law including the Antiquities Act and ARPA all require curation of artifacts or objects removed from federal lands. BLM has continued to work with CRIT and others to address treatment of non-eligible artifacts, and otherwise deal with these concerns to the extent possible under current law and policy.

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					to curate artifacts found on their lands. Id. These statements are wholly unacceptable to CRIT and must be revised.	
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.13	CUL	CRIT likewise objects to the use of testing to further study unevaluated resources. DEIS at 2D-17. Rather than subject prehistoric resources to these invasive tests, CRIT urges BLM to simply assume their eligibility and to devise mechanisms to avoid or protect these sites.	Section 106 of NHPA requires BLM to identify and evaluate cultural resources for significance rather than just assuming eligibility.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.14	LAW	Pursuant to the NHPA, the Programmatic Agreement must be signed by the CRIT Tribal Historic Preservation Officer, if BLM ultimately selects a route that crosses the Colorado River Indian Reservation. The Programmatic Agreement should be revised to reflect that the THPO is the potential signatory. E.g., DEIS at Appendix 2D-2.	BLM has already identified the CRIT as a signatory of the document. The BLM acknowledges the THPO as the CRIT's signatory.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.15	NEPA	CRIT continues to object that BLM has bifurcated the Project's construction, operation, and maintenance from decommissioning. DEIS at Appendix 2D-6.	BLM has determined that decommissioning is a separate undertaking requiring Section 106 compliance. This determination is primarily based on the 50-year life span of the Project. It is not prudent to attempt to take into account the effects of an undertaking that is 50 years out because conditions will have changed that are at present, unpredictable. It is better for the resources to consider decommissioning a separate undertaking and conduct separate Section 106 compliance and analysis at that time. However, decommissioning is included in the NEPA analysis within the FEIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.16	M&M	CRIT continues to object to BLM's position that it cannot "require" tribal monitoring during Class III surveys or ground disturbing construction activities. DEIS at Appendix 2D-7. While CRIT appreciates that DCRT has promised to include tribes in these activities, CRIT is concerned that DCRT will sell the Project approval to a different company, and the approval documents will allow the new company to back out of this promised monitoring.	BLM agrees that BLM can require tribal monitors for archaeological survey and ground disturbing construction activities and plans to do so. This requirement is authorized under BLM tribal relations policy (MS-1780 & H-1780-1) and language requiring monitors is included in the Programmatic Agreement for this Project.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.17	NEPA	CRIT also objects to the preparation of a Tribal Participation Plan and Monitoring and Discovery Plan after Project approval. DEIS at Appendix 2D-7, -17. As these documents are crucial to understanding whether the Project has been adequately analyzed and mitigated, it must be prepared prior to Project approval.	These are required by the PA as part of Section 106 process which can run concurrently with the NEPA process.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.18	PROG	CRIT continues to object that the Programmatic Agreement allows the Applicant to avoid conducting any additional surveys in the Indirect APE. Instead, the Programmatic Agreement states that the Applicant may rely solely on "existing resources to the extent available." DEIS at Appendix 2D-13. CRIT urges BLM to require the Applicant to at least survey the areas in the Indirect APE where increased access routes may result in vandalism or other harms.	BLM will require surveys to the extent required by Section 106 of the NHPA.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.19	PROG	CRIT continues to object to the Programmatic Agreement's inclusion of short response times for Tribes. CRIT is particularly concerned about the five-calendar day review for deviations to the HPTP- this review period must be lengthened to at least five business days. DEIS at Appendix 2D-19.	This change will be made in the PA.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.20	PROG	CRIT continues to object to the Programmatic Agreement's inclusion of the following language: "Execution of this PA by the BLM, the SHPOs/THPO and the ACHP and implementation of its terms evidence that the BLM has satisfied its Section 106 responsibilities ..." DEIS at 2D-32. As described in this letter, CRIT does not believe that the PA has satisfied the NHP A.	According to the ACHP this standard language that appears in all Section 106 agreement documents.

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37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.21	NA	The proposed Project crossed directly south of the Colorado River Indian Reservation. CRIT is traditionally and culturally affiliated with much of the Project area as the ancestors of CRIT's Mohave and Chemehuevi members have lived and traveled in the Project area since time immemorial. The Tribes remain troubled by the Project's potential to remove, damage, or destroy cultural resources and artifacts. These resources are sacred and finite, and together make up the cultural footprint of the Tribes' ancestors. According to the belief system of CRIT's Mohave members, the disturbance of any cultural resources affiliated with their ancestors is taboo, and thus considered a severe cultural harm. Adequate analysis of cultural resource impacts is therefore essential.	Comment noted. BLM acknowledges tribal use of the area. Information presented here is the type that will be captured in the ethnographic study. This study will be complete prior to the ROD.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.22	CUL	The DEIS fails to acknowledge that cultural resources can include cultural landscapes. DEIS at 3-26. See also National Register Bulletin, "Guidelines for Evaluating and Documenting Traditional Cultural Properties" ("A culturally significant natural landscape may be classified as a site" eligible for the National Register). Indeed, evaluation and protection of such landscapes is necessary to ensure adequate protection of both individual resources and their historic context. Recently, the California Office of Historic Preservation recognized the need for cultural resource professionals working on renewable energy projects to shift focus from a site level to the landscape level of assessment. The same reasoning applies to a massive transmission project like this one. As a result of this definitional failure, the analysis omits adequate discussion of both the existence of cultural landscapes and the Project's potential to disturb them. Likewise, while the DEIS initially acknowledges that traditional cultural properties are a type of cultural resource (DEIS at 3-26), the analysis section provides no information identifying any traditional cultural properties or analyzing how the Project may affect them.	Comment noted. Language has been added to the FEIS discussing cultural landscapes and TCPs.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.23	NEPA	The DEIS relies on a different Area of Potential Effect for cultural resources than the Programmatic Agreement. DEIS at 3-26. CRIT does not object to this difference out of hand; however, the DEIS must provide adequate justification based in differences between NEPA and the NHPA. The document currently does not contain such justification.	EIS language has been adjusted to reflect this difference and APE has been changed to “analysis area” in the EIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.24	CUL	The DEIS explains that BLM has conducted a "cultural resources sensitivity analysis" in alleged compliance with the DRECP's requirements. However, the DEIS does an inadequate job of explaining the purpose and methodology of this sensitivity analysis and why the analysis is limited to the p-16, p-17, p-18, x-16, ca-02, x-15, ca-07, ca-09, and x-19 segments. These are not the only segments located in California. Moreover, it appears as though the sensitivity analysis has been limited to the Applicant's Proposed Action (DEIS at 3-28), even though BLM has selected a different Preferred Alternative. BLM offers no explanation for why the sensitivity analysis was not completed for all possible alternatives, given its potential to help guide the route selection process.	The sensitivity analysis was done in compliance with the California Desert Conservation Area plan and the DRECP. The segments selected for inclusion in the sensitivity analysis represent the segments on BLM land in California.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.25	CUL	The DEIS compiles a list of issues of concern to Indian Tribes. DEIS at 4-86 to -87. While this list helpfully includes some of the major impacts that will result from this Project, the DEIS fails to adequately analyze how the Project will impact these areas. For instance, it is clear from the list that area tribes are broadly concerned about impacts to resources that may not be traditionally considered eligible for the National Register of Historic Places. E.g., DEIS at 4-86 to -87 (describing removal of ancestral footprint and importance of Colorado River). However, the "analysis" portion of the DEIS claims that these issues will be resolved	The PA requires a Tribal Participation Plan which will provide an avenue for tribal monitors to give input on resources of concern during archaeological surveys. The Tribal Participation Plan will outline the process for how to document and make management recommendations for cultural resources that do not qualify for the NRHP.

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					in the Programmatic Agreement. DEIS at 4-89. This claim is incorrect. The Programmatic Agreement is intended to implement the requirements of the NHPA, which is concerned only with impacts to NRHP-eligible resources. As a result, it does little to address impacts to non-eligible resources of importance to area tribes. Moreover, as described above, the Programmatic Agreement itself is insufficient to address these issues, in that it continues to require curation. These sections must be revised to focus on the impacts of the Project on the areas of concern raised by area tribes.	
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.26	NA	The DEIS provides a chart purporting to evaluate each segment for its potential to impact areas of concern to tribes. DEIS at 4-91 to -93. However, the DEIS provides no information on how this chart was developed. As a result, it is difficult to assess its accuracy. Moreover, the chart states that issues related to "access restrictions" would be studied in an access analysis required by the PA. DEIS at 4-93. As a result, this information is deferred until after Project approval. Moreover, it does not appear that the proposed study is actually part of the PA; while that document requires further study of the ways in which new access can lead to additional indirect effects, it contains no requirements about the ways in which the project may impede access to culturally important sites and resources. As a result, the DEIS presents a wholly inadequate study about the ways in which different segments may result in different impacts to area tribes.	This table summarizes information that is itemized in the cultural resources assessments of each route segment (DEIS Section 4.5) and from known tribal concerns (DEIS Section 3.6). Added this statement to Section 4.6.4.2 of the FEIS, as well as that additional areas of concern to the tribes may be identified in the future through additional coordination and consultation. Restricted access is analyzed in Sections 4.6.5 and 4.6.8 of the FEIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.27	NA	The DEIS claims that concerns related to "new disturbance," "access considerations" and "intrusion on pristine environments" will be negated or minimized if the Line is located adjacent to existing transmission infrastructure. DEIS at 4-95. This statement is not adequately supported. As the new Line will require additional ground disturbance, new roads, and fencing, it appears obvious that it will lead to new disturbances, indirect affects resulting from new access, and additional restrictions on access. Likewise, it appears that BLM has made a determination for itself about whether a landscape qualifies as "pristine," rather than consulting with affected tribes. This section must be revised to adequately discuss these issues.	Comment noted. The general statement in Section 4.6.7.1 of the FEIS has been revised. The section already describes potential impacts along specific segments of concern.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.28	CE	The DEIS offers scant information about the severe cumulative impacts to cultural resources caused by the influx of renewable energy projects and associated transmission infrastructure in Riverside County. See DIES at 3-73 to -74. Cultural resources represent a direct linkage between present-day tribal members and their ancestors. Removal of these resources from the landscape is removal of the Tribes' footprint. Once such resources are gone, it will be difficult, if not impossible, for the Tribes to prove that these lands are part of their ancestral homeland, and that their ancestors lived and worked on these lands since time immemorial. This is a significant impact that must be adequately addressed.	Comment noted. Information during BLM coordination with tribes indicates the area is a cultural landscape with TCPs present. Additional information was inserted in the EIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.29	CE	The DEIS claims that for cumulative impacts on federal lands, "the impact to historic properties would be resolved through data recovery and other methods." DEIS at 4-83. Therefore, the DEIS claims that there will be no cumulative cultural resource impact from this and other projects. This is patently incorrect. As CRIT has repeatedly described to BLM, the removal of cultural resources from the landscape is a distinct and severe harm. Likewise, BLM claims that within California, cumulative impacts have already been addressed through the development of the DRECP PA. DEIS at 4-83. Again, this document does little to remedy the significant harms. It continues to require removal and curation of cultural resources and purports to address cumulative impacts through payment of a compensatory fee. Neither of	Comment noted. BLM plans to minimize the cumulative effects of this project through avoidance of sites (Section 4.6.4), as well as minimization of the project footprint, before even considering mitigation of sites and data recovery. The PA ensures the priority of avoidance of historic properties during construction phases, and ensures the process of identifying, evaluating, and avoiding or mitigating is followed and will continue even after the NEPA process is complete.

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					these "mitigation measures" are adequate. This section must be revised to acknowledge the significant impact caused by the continued industrialization of the Mojave Desert.	
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.30	CE	Likewise, the cumulative impact analysis offers no discussion of the potential cumulative impacts caused by locating the applicant's Proposed Project, the Desert Quartzite Project, and the Crimson Solar Project at the base of the Mule Mountains. DEIS at 4-106. This is a significant cultural resource concern that must be adequately discussed in revised document.	Comment noted. BLM has expanded the cumulative effects discussion of the EIS (Section 4.6.11).
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.31	PROG	CRIT is unclear why Section VI.A. I of the Programmatic Agreement is limited to "minimizing the visual effects of the Undertaking." DEIS at Appendix 2D-15. This section should be broadly drafted to include efforts to minimize all effects.	Comment noted. BLM will review that language of the PA.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.32	PROG	The Programmatic Agreement should specify that the development of treatment measures for tribal values must be developed in consultation with affected tribes. DEIS at Appendix 2D-18.	Comment noted.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.33	PROG	The Programmatic Agreement must be revised to ensure that tribes are afforded the opportunity to consult on any future determination that there are no cultural resources or potential properties of traditional cultural or religious importance within a variance area. DEIS at Appendix 2D-25.	Comment noted. Any variance area would still be within the 200-foot right of way, and well within the 400-foot buffer area that will be subject to a Class III survey. As required by law, and reiterated in the PA, the BLM will have already consulted with the CRIT on this Class III inventory.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.34	M&M	Pursuant to the DRECP, BLM must comply with LUPA-CUL-4, which requires BLM to "design activities to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Tribes." DEIS at Appendix 2C-36. As described in this letter, CRIT does not believe that BLM has met this standard. Specifically, without tribal monitoring, reburial of cultural resources, and survey work in advance of BLM's decision, such impacts cannot be minimized.	Comment noted. BLM plans to adhere to the requirements of the DRECP for the California portion of the project and further discuss these issues with the CRIT.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.35	CUL	Pursuant to the DRECP, BLM was required to complete cultural resource sensitivity analysis and a sample survey in the pre-application process (pursuant to LUPA-TRANSCUL-4 and -5). These analyses are intended to inform the selection of the Project footprint, pursuant to LUPA-TRANS-6. However, BLM has improperly delayed these activities, as noted in the compliance table. E.g., DEIS at Appendix 2C-49. As a result, BLM cannot be certain that the specific footprint is justified.	BLM completed a sensitivity analysis for the project based on information obtained from the Class I inventory. The Class I inventory documented sufficient existing information to understand the nature, density, and distribution of cultural resources to the extent it was possible to develop the range of alternatives analyzed in the DEIS. In addition, during this process the BLM requested and incorporated tribal input on alternatives and conducted surveys of project alternatives in California to inform the EIS analysis.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.36	EJ	Under NEPA, BLM must consider, to the extent practicable, whether there is or will be an impact on the natural or physical environment that significantly and adversely affects Native American tribes. Specifically, BLM must consider whether significant environmental effects may have an adverse impact on Native American tribes that appreciably exceeds those on the general population. See, e.g., EPA's 1998 Environmental Justice Guidance; Executive Order 12898. These analyses are required for an adequate consideration of environmental justice impacts.	CRIT was identified as an EJ Population in Section 3.10.2.4 of the DEIS. CRIT lands are identified on both Figures 3.10-1 and 3.10-2.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.37	EJ	However, the DEIS takes a familiar path with respect to environmental justice. It first severely limits the geographic consideration of this issue, looking for environmental justice communities only within one mile of the Line. DEIS at 4-136. Likewise, it narrowly defines the potential impacts that are considered "environmental justice" impacts, such as visual and air quality effects. DEIS at 4-138. The analysis fails to recognize that the proposed Project will result in adverse impacts on CRIT that appreciably exceed those of the general	Although the study area was defined as a one-mile corridor, it included the entirety of the block groups that extended beyond the corridor. As noted in Section 3.10.1, the analysis area includes the study area and all census block groups crossed by the Proposed Action and Action Alternative segments. This ensures the inclusion of adjacent and nearby communities that may be

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					population.	affected.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.38	EJ	This gross omission renders the analysis inadequate under federal law. Unlike most members of the public, tribal members maintain long-standing ancestral and traditional practices that connect their identities to specific environments. Tribal members cannot easily shift their use and enjoyment of public lands to other, non-industrialized areas, as may be the case for many members of the public. Once these ancestral ties are severed, either by the removal of cultural resources or the fencing and development of the entire site, they cannot be regained. Consequently, the DEIS must be revised to recognize the significant environmental justice impacts of the proposed Project on CRIT and other affected tribes.	Additional language has been added to the EIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.39	EJ	One of the most substantial environmental costs of the proposed Project is the destruction of tangible cultural resources and the wholesale transformation of the ancestral homelands of Indian tribes, including CRIT. This cost is borne exclusively by tribal members. The power produced at the proposed Project, however, is unlikely to serve residents of the Colorado River Indian Reservation, and the climate change benefits will be spread across the globe. The massive profits, moreover, will benefit a small number of private companies. This imbalanced allocation of costs and benefits, which disproportionately disadvantages a minority population while providing them little or no benefit from the program, satisfies any recognized definition of environmental justice.	Comment noted. The CRIT were identified as an EJ population in Section 3.10.2.4 of the DEIS. Additional discussion has been added to the EIS.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.40	M&M	To begin to right this imbalance, CRIT urges BLM to adopt a mitigation measure to give employment preferences to Indians, as well as access to any necessary job training programs to ensure performance and experience requirements can be met. BLM should also adopt mitigation measures that ensure that the project developer sources construction materials from tribal enterprises. CRIT has serious questions as to whether the proposed Project will bring much needed construction and permanent jobs to an area close to the Reservation. At a minimum, please provide additional information about the nature of the jobs related to the Project to ensure that Tribal members may be available for hire. Tribal members must have access to these jobs to ensure that at least some of the benefits of the proposed Project flow back to the disadvantaged minority community on the Reservation.	See response to comment 37.16. BLM will require tribal monitors for archaeological survey and ground disturbing construction activities.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.41	LAW	Much of the traditional value of cultural resources in the Project area comes from maintaining the connectivity between cultural resource sites stretching from Spirit Mountain in Nevada to the area south of Blythe. As the DEIS recognizes, the Mule Mountains play a key role in maintaining this connectivity within Tribal members' ancestral landscape. DEIS at 3-33. To the extent that the proposed Project prevent access to the Mule Mountains for traditional practitioners or destroy the landscape connectivity necessary to traditional cultural practices, and thereby present a substantial burden on their religious free exercise, BLM violates the Religious Freedom Restoration Act. See Burwell v. Hobby Lobby Stores, Inc., 573 U.S. _ (2014). This issue must be addressed prior to any Project approval.	Comment noted. BLM acknowledges that the tribes have a deep connection to the landscape and its resources, and prefers avoidance of cultural resources, as well as minimizing the project footprint. Restricted access is analyzed in Sections 4.6.4, 4.6.5, and 4.6.8 of the FEIS. Access restrictions in this location would be temporary during construction.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.42	WTR	According to the DEIS, the Project will require over 2.5 million gallons of water for construction. DEIS at Appendix 2-55. An additional 2.2 million gallons of water would be required for dust control. Id at Appendix 2-25. According to the document, the Applicant will obtain water either from "private wells and/or municipal supplies with permitted and allocated water rights." DEIS at 2-25.	Design and engineering of the Project was refined between the DEIS and the FEIS; therefore, water required for construction was adjusted to reflect this in the FEIS. Water sources would be widely distributed along the 114-mile Project alignment, over a 2-year construction period. Such a wide distribution of sources, including private wells and/or municipal supplies, and over a long

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					CRIT is concerned that this use has not be adequately studied in the EIR. Many wells and municipal supplies in the area are hydrologically connected to the Colorado River. The DEIS must be revised to specifically identify the proposed water source and to study any potential impacts of water use on the Colorado River.	period of time, would minimize the potential for overdraft of any individual water supply. The two underlying basins are not in overdraft and the storage capacities of the two basins are 4.9 million-acre feet and 6.8 million acre feet, respectively (Appendix 1C). These large storage capacities put into perspective the Project water demand of 174 acre feet. BLM is satisfied with the applicant's commitment to procure water from existing sources.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.43	NA	The DEIS states that BLM has consulted with CRIT. DEIS at 5-2. However, CRIT continues to object to BLM's failure to acknowledge the Government-to-Government Consultation Policy of the Colorado River Indian Tribes.	BLM acknowledges receiving and reviewing the CRIT government to government consultation policy.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.44	NA	CRIT prepared this Policy to establish a framework by which CRIT and federal agencies could work together to facilitate better consultation processes and outcomes. The Policy is a product of tribal law and is intended to govern the activities of the CRIT Tribal Council. As a result, CRIT has requested that the federal agencies with which it interacts both acknowledge the Policy and attempt to comply with its requirements.	BLM will continue to follow established DOI and BLM policy regarding tribal consultation.
37	1	Dennis Patch, Chairman, Colorado River Indian Tribes	37.45	PROG	In addition, CRIT objects to the statement in the Programmatic Agreement that "BLM's consultation process fulfills part of CPUC' s consultation obligations." DEIS at Appendix 2D-5. Nothing in the California Environmental Quality Act or state law permits the CPUC to pass along its responsibilities to federal agency. Nor does this deferral serve one of the fundamental purposes of consultation, which is to ensure that tribal sovereign nations have the opportunity to present their concerns directly to government decisionmakers. CRIT request that the CPUC engage in consultation activities before beginning consideration of the Project.	CRIT was notified by BLM in 2017 that the BLM's consultation efforts also doubled for CPUC's consultation efforts, including for the purposes of gathering information pertinent to AB52 and the identification of Tribal Cultural Resources. CEQA Guidelines Section 15221 specifically authorizes this process. It is the BLM's and CPUC's understanding that there were no objections by CRIT or other consulting tribes to the BLM's and CPUC's combined consultation efforts. However, CPUC also sent letters to consulting tribes, including CRIT, for the purposes of AB52 consultation, clearly identifying the CPUC's standalone obligations for tribal consultation under AB52. These letters were sent for the sole purpose of identifying TCRs under AB52 in order to support CEQA's analysis of impacts to TCRs. No information was provided by consulting tribes, including CRIT, based on the AB52 outreach letters. If CRIT has additional information to provide regarding possible TCRs that could be impacted by the proposed undertaking, CPUC needs that information to complete the CEQA analysis and work with consulting tribes to determine appropriateness of mitigation, if avoidance is not feasible. Finally, the PA memorializes the consultation process between BLM, CPUC, and consulting tribes, including early outreach efforts between BLM and CRIT. AB52 requires a separate California CEQA process that CPUC is engaged in, which is also specifically identified in the PA as an ongoing CEQA obligation. CPUC has not yet made a decision to accept the EIS as a CEQA-equivalent document.
38		Doug McEntee, Sr. Project Manager, **Southern California Edison**	38.1	ROW	SCE's rights-of-way and fee-owned properties are used by SCE to operate and maintain its present and future facilities. SCE reviews any proposed use within its right-of-way on a case-by case basis. Approvals or denials are provided in writing and based upon review of maps provided by the developer and compatibility with SCE right-of-way constraints, rights, and standards. SCE is concerned that the proposed project may impact SCE's existing transmission line facilities. SCE has requested the developer to submit detailed plans reflecting all crossings	Table 1.5-2 was updated to reflect that DCRT must obtain approval from SCE for crossings of SCE facilities.

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					and impacts on SCE right-of-way to complete its review for this project. The proposed project cannot unreasonably interfere with SCE's ability to access, maintain, and operate its current and future facilities. SCE's approval of any proposed crossings of SCE's transmission line facilities will be in accordance with Part 3, Section 7.2 of SCE's Interconnection Handbook.	
38		Doug McEntee, Sr. Project Manager, **Southern California Edison**	38.2	NEPA	SCE's construction, modification, and relocation of transmission lines, or electrical facilities that are designed to operate at or above 50 kV may be subject to the California Public Utilities Commission's (CPUC) General Order 131-D2. The construction, modification, or relocation of transmission lines to be performed by SCE for this project should be identified and analyzed in the Final EIS. If not, SCE may be required to pursue a separate, mandatory CEQA review through the CPUC, which could delay approval of the SCE transmission line portion of the project for two years or longer.	As outlined in the final POD and EIS, the Project would interconnect to SCE's Colorado River substation. No additional modifications / relocation is proposed. The Applicant will be coordinating with SCE and trustree/responsible agencies in support of Interconnection approval and encroachment/ crossing permits.
39		Craig Weaver, Tonopah Area Coalition and Friends of Saddle Mountain	39.1	P&N	The Tonopah Area Coalition and Friends of Saddle Mountain have serious concerns regarding this 500kV power line being proposed. This transmission line is to sell electricity made in AZ to folks in California which is not necessary.	Comment noted. Please see Section 1.2.2 for the Applicant's project objectives and Section 1.3 for the purpose and need.
39		Craig Weaver, Tonopah Area Coalition and Friends of Saddle Mountain	39.2	PH&S	This addition will not increase safety for power transmission system.	Please see Section 1.2.2 for the Applicant's project objectives, which states the Project would strengthen the regional transmission system in Arizona and California by adding additional capacity and alleviating grid congestion, as well as improving transmission line reliability. These contribute to the safety of the power transmission system. Safety is addressed in Section 4.2.8 of the FEIS.
39		Craig Weaver, Tonopah Area Coalition and Friends of Saddle Mountain	39.3	UC	This substation (incorrectly listed as Tonopah) was made for an APS solar project in Harquahala Valley which was never built. A Canadian firm also proposed a solar project for connection to Phoenix via Delaney but they never built that project either.	Comment noted.
39		Craig Weaver, Tonopah Area Coalition and Friends of Saddle Mountain	39.4	WLF	The wildlife linkage (64) for desert bighorn sheep was discovered decades ago (radio collared DBS in 1990 but Arizona Game and Fish). The desert bighorn sheep linkage will be negatively affected by these additional power lines. Stand below a 500kV and you'll notice the static effect on your skin... the shocking feel of those power lines is likely to be disturbing for [desert bighorn sheep] also. This narrow 'hall way' for [desert bighorn sheep] is limited and another 500kV will result in additional lack of interaction of [desert bighorn sheep] north of Interstate 10 and those below I-10.	Desert bighorn sheep impacts are disclosed in Section 4.4 of the EIS.
39		Craig Weaver, Tonopah Area Coalition and Friends of Saddle Mountain	39.5	WLF	This restriction further reduces sustainability for wildlife.	Impacts to wildlife are disclosed in Section 4.4 of the EIS.

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40		Linda Ogo, Director, Culture Research Department, **Yavapai Tribe**	40.1	NA	We have reviewed the Ten West Link Draft EIS provided along with your correspondence received by certified mail. This letter is to advise you that the Yavapai-Prescott Indian tribe wishes to be a Consulting Party to the Programmatic Agreement regarding the Ten West Link Transmission Project between Tonopah, La Paz County, Arizona and Blythe, Riverside County, California. The proposed project will impact lands in the traditional aboriginal territory of the Yavapai.	The BLM sent a letter to the Yavapai in December 2018 confirming that the Yavapai-Prescott Tribe is a consulting party to the PA. BLM will continue to keep the Tribe informed and involved in the EIS and PA process.
40		Linda Ogo, Director, Culture Research Department, **Yavapai Tribe**	40.2	CUL	The research Design and Work Plan for Cultural Resources Inventory documents that the Class I investigation identified five intaglios (geoglyphs) as well as seven petroglyph sites that might be affected in the Arizona areas. Be advised that these are cultural resources that have traditional cultural significance to the Yavapai-Prescott Indian Tribe. In addition, cairns, rock alignments, cleared circles and trails are important elements of the ceremonial landscape which are identified in Yavapai oral history.	Comment noted. Consultation with the Yavapai Tribe will be ongoing throughout the Project.
40		Linda Ogo, Director, Culture Research Department, **Yavapai Tribe**	40.3	NA	We would like to have more information on the BLM Tribal Participation Plan (pg.7), the data sharing agreement (pg.9), and request hard copy communication in addition to email (pg.18). It is noted in your correspondence that arrangements can be made for a presentation to the Yavapai-Prescott Indian Tribe and we would like to have the opportunity for this to occur.	Those documents have not been drafted yet. When these have been drafted, BLM will provide them to the Tribe.
41		Lowell Rogers, **DCRT** Project Manager, Ten West Link Transmission Project	41.1		The DEIS mischaracterizes DCRT's request as being for a 30-year ROW rather than the 50 years actually requested (DEIS, p. 2-1). We note that the language at DEIS, page ES-1, analyzes a 50-year project life that corresponds to DCRT's requested ROW grant. DCRT's Approved Project Sponsor Agreement states that the Ten West Link project will have a service life of 50 years, which is in line with the project life analyzed in the DEIS. DCRT requests that the FEIS and ROD reflect at 50-year ROW being granted by the BLM.	Comment noted. Action is being taken to address this. The EIS was revised to reflect a 50-year ROW.
42	2	Doug & Dinice Ross, Local Liason, **Arizona Sunriders OHV Club**	42.1	SOCIO	Off-road vehicle activities in the Quartzsite, Arizona area provide an important quality-of-life opportunity for residents. It also contributes significantly to the local economy and tourism industry.	These topics are discussed in Sections 3.8, 3.9, 4.8, and 4.9 of the EIS.
42	2	Doug & Dinice Ross, Local Liason, **Arizona Sunriders OHV Club**	42.2	REC/ SUP PREF	We appreciate BLM's efforts to acknowledge the importance of established off-road trails, such as the Arizona Peace Trail. We support the BLM Preferred Alternative that the BLM identified in the DEIS. It avoids the Johnson Canyon area and interference with the Arizona Peace Trail, which was a priority for our members.	Comment noted.
42	2	Doug & Dinice Ross, Local Liason, **Arizona Sunriders OHV Club**	42.3	VIS	Our members feel that this is a good approach to locate the new transmission line along the same route as the existing transmission line within the Copper Bottom Pass as identified by the BLM Preferred Alternative. With the all the existing construction in this area, we do not feel that the new transmission line, including new access roads, will create a visual impact in the Copper Bottom Pass (KOPs 32 and 35) and feel that mitigation measure MM-VIS-02 is unnecessary.	BLM policy is to reduce and mitigate for visual impacts.

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43	1	Sheryl H. Christenson, Chair, Laguna Natural Resource Conservation District	43.1	SUP PRO	like all of the agencies that are involved in this project, we are acutely aware of the environmental impact that this new project will bring. After attending one of the meetings held this past October, we learned that BLM prefers the most southern route crossing AZ and ending in CA. We agree with this preference. We also agree that the transmission line should stay as far away as possible from the towns of Quartzite and Blythe which, again, the southernmost route proposal accomplishes.	As presented in the DEIS, the BLM's Preferred Alternative does include the southern route in the western portion of the project area, to avoid Quartzsite and Blythe.
43	1	Sheryl H. Christenson, Chair, Laguna Natural Resource Conservation District	43.2	LU	With specific regards to Blythe and crossing the farmland south of town, we understand there are three proposals. In our view, the only one that makes sense is the most southern route. The reasons are: 1. There is already a corridor established at that proposed route and it doesn't make sense to divide farmland any more than necessary. 2. We believe that it is important to stay as far away from the town of Blythe as possible, therefore, the two other proposals should be avoided. 3. We understand that the line entering the Colorado River Substation needs to be entered from the south end. Using either of the two most northern farmland crossing proposals would add both distance and cost to the overall project and would create a larger footprint which is not desirable.	Comment noted.
44	1	Terrance J. Fulp, Ph.D, Regional Director, **Bureau of Reclamation**, Lower Colorado Regional Office	44.1	SUP PREF	Reclamation has reviewed the DEIS and supports the Bureau of Land Management Preferred Alternative (Alternative 2) with several small adjustments to the proposed Project Route Segments (Segments). Details about these requested adjustments are given below.	Comment noted.
44	1	Terrance J. Fulp, Ph.D, Regional Director, **Bureau of Reclamation**, Lower Colorado Regional Office	44.2	LU	Segments i-03, i-01, and p-01, as proposed in Alternative 2, cross what is known as the 'Green Up Area' of the CAP canal. In accordance with the 1993 CAP Right-of-Way Land Use Policy (Policy), the 'Green-Up Area' consists of lands administered by Reclamation on the upslope of the CAP canal that mitigates for the loss of wildlife habitat from construction of the canal. It currently contains dense xeroriparian habitat that Reclamation is committed to protect. As identified in the Policy, any land disturbing activities within the 'Green-Up Area' must be fully replaced or existing habitat values enhanced.	As coordinated with Reclamation, structure locations along these segments have been placed to avoid these sensitive areas.
44	1	Terrance J. Fulp, Ph.D, Regional Director, **Bureau of Reclamation**, Lower Colorado Regional Office	44.3	RNA	To avoid having to mitigate for impacts to habitat within the 'Green-Up Area, Reclamation recommends avoiding these areas by adjusting: Segment i-01, near its connection with Segment p-01, north by approximately 0.13 miles (Attachment A, Figure 1) and, Segment i-03 that crosses the CAP canal and the 'Green-Up Area' west of the Little Harquahala Pumping Plant, south by approximately 0.6 miles (Attachment A, Figure 2)	See response to comment 44.2.
44	1	Terrance J. Fulp, Ph.D, Regional Director, **Bureau of Reclamation**, Lower Colorado Regional Office	44.4	WLF	Reclamation notes there are proposed locations for the transmission line in Alternative 2 that while outside the 'Green-Up Area' and CAP Right-of-Way, support patches of xeroriparian habitat and desert washes that are important wildlife and habitat areas. It is recommended that disturbances to those areas also be avoided to the greatest extent possible to minimize impacts.	These areas would be avoided.
44	1	Terrance J. Fulp, Ph.D, Regional Director, **Bureau of Reclamation**, Lower Colorado Regional Office	44.5	CONST	Reclamation also requests further coordination as some of the proposed locations are on a combination of Reclamation withdrawn land, fee land, and rights-of-way. Use of these lands will require further authorization from Reclamation. Reclamation and the Central Arizona Water Conservation District (CAWCD) have design standards for facilities that encroach on CAP lands. These design standards protect the CAP facilities and the ability to perform	Comment noted. During the Reclamation land use authorization process and the CAP crossing permit process, the Proponent will coordinate with Reclamation. CAWCD is included in Table 1.5-2 that lists state and local permits required by the Project.

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					Operation and Maintenance of project facilities. As the Project reaches the design phase, please coordinate with CAWCD and Reclamation on the applicable design standards.	
44	1	Terrance J. Fulp, Ph.D, Regional Director, **Bureau of Reclamation**, Lower Colorado Regional Office	44.6	INFO	In addition, Reclamation also requests review of the detailed Project design drawings of the Colorado River crossing and the Plan of Development to ensure the transmission line and any new structures placed adjacent to the Colorado River do not impact Reclamation levees/banklines and other flood control facilities.	Comment noted. During the Reclamation land use authorization process and the CAP crossing permit process, the Proponent will coordinate with Reclamation. CAWCD is included in Table 1.5-2 that lists state and local permits required by the Project.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.1	WTR	The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust.	Comment noted. California State Lands Commission is identified in Table 1.5-2 of the EIS as a state agency requiring a permit (e.g., ROW easement, public trust land use lease, right-of-entry, as applicable).
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.2	DATA	Project Description: A thorough and complete Project Description should be included in the EIS in order to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives. With the Colorado River being one of the most sensitive environments in the Project area, Commission staff recommends more description of work activities within the channel and floodplain of the river. Specifically, the river crossing should be a specific segment for environmental impact analysis, rather than as part of a larger segment.	This information is contained in the TES. DCRT would be required to submit a *standard application for lease of state lands for commercial and industrial use applicants* and obtain a ROW from the California State Lands Commission (Appendix 1, Table 1.5-2). As part of the final siting (micrositing) of the Project, DCRT would be required to coordinate design of the Project and micrositing of Project infrastructure with the California State Lands Commission.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.3	WTR	Please update the Project Description to include the following information: Describe and illustrate all proposed work and siting of structures below the OHWM and OLWM of the Colorado River and within the floodplain, inclusive of support structures, transmission lines, construction access and staging areas.	Based on our understanding, all work would be above the OHWM.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.4	WTR	For segment p-15e, provide greater description of whether support structures would be sited within the floodplain of the Colorado River and describe proximity of structures to the OHWM and OLWM. To the extent possible, provide description and illustration of construction techniques for how the support tower foundations will be installed.	Final design would emphasize avoidance of floodplains for structure locations. Whether avoided or not, compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act would ensure that any physical alterations of floodplains would be mitigated to ensure their continuing functioning. Section 404 compliance would likely occur through coverage under NWP 12 - Utility Line Activities, unless the coverage requirements (e.g., acreage loss) of that general permit could not be met, in which case an Individual Permit would be pursued. Information regarding floodplains is located in Section 4.19.4.1 of the TES, The Floodplain Statement of Findings is presented in Section 4.19.10.1 of the TES. The Plan of Development states: Specifically, a preconstruction notification (PCN) may be required for towers sited within the OHWM of the Colorado River in which a Section 10 permit is to be submitted because utility lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329 and include the Colorado River) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i). A PCN is not predicted to be required for foundations within Section 404 jurisdictional washes because

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						foundation footings will be micro-sited outside of 404 jurisdictional washes where possible and the maximum permanent loss of waters of the U.S. at any tower totals much less than 0.5 acre.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.5	WTR	Describe any long-term maintenance needs and potential work that may affect public use and natural resources of the Colorado River.	Impacts to public use of the river during operations would be negligible. This information is contained in the TES.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.6	CLIM	As stated in Safeguarding California Plan: 2018 Update (California Natural Resources Agency 2018), climate change is projected to increase the frequency and severity of natural disasters related to flooding, drought, and storms. In rivers, more frequent and powerful storms can result in increased flooding conditions and damage from storm created debris. Conversely, prolonged droughts could dramatically reduce river flow and water levels, leading to loss of public access and navigability. Climate change will further influence riverine areas by changing erosion and sedimentation rates, and flooding and storm flow. Runoff will likely increase scour, decreasing bank stability at a faster rate. As explained above, it is unclear if the support towers for segment p-15e of the proposed action will be sited in the floodplain of the Colorado River. If these structures are sited within the floodplain of the river, then they could be subject to the types of climate change impacts explained above. For the alternatives with segments ca-04 and ca-10, although the electrical towers are located above and laterally outside of the floodplain, the towers would support electrical lines that extend above and across the river. Although the towers and utility lines will not be subject to climate change related riverine processes, they could be subject to storm events of increased intensity and frequency. Please note that when considering the lease application for the Project, Commission staff may require information concerning the future effects of climate change on the Project, and if applicable, adaptation strategies during the life of the Project.	See response to comment 45.4. Also, one of the objectives of the Project is to allow for additional renewable energy sources to be connected to the CAISO and APS bulk transmission systems. Therefore, the project has an indirect benefit on GHG emissions.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.7	REC	Public Access Restrictions: For all construction phases of the Project affecting the Colorado River, the EIS should provide a detailed description of any temporary restrictions on river access, and for navigation within the Colorado River. Potential mitigation measures could include public notices and posting of signs at the Project area to inform the public of temporary access restrictions. For long-term operations affecting the Colorado River, describe any changes in land use that could affect public access to the river and navigation within the river.	Text has been added to the EIS regarding access restrictions during wire pulling. To protect the public, all boat traffic would be restricted from entering the wire pulling area while stringing operations are occurring. Boat traffic may be restricted using a combination of patrol boats and warning buoys on either side of the wire pulling corridor. These restrictions would be temporary in nature. See Section 2.2.4.4 of FEIS Appendix 2. Impact REC-1 of the CEQA Appendix has been updated to address river access.
45	1	Eric Gillies, Assistant Chief, Division of Environmental Planning and Management, **California State Lands Commission**	45.8	PERM	Thank you for the opportunity to comment on the Draft EIS for the Project. As a trustee and responsible agency, Commission staff will need to rely on the Final EIS, including Appendix 1 C for CEQA compliance, for the issuance of a lease as specified above. Therefore, we request that you consider our comments prior to certification of the EIS.	The BLM acknowledges that the California State Lands Commission may become a CEQA lead agency if and when the Applicant files a discretionary permit. Presently, there is no CEQA document or CEQA Lead Agency, so CSLC is not yet a trustee Agency, as defined by CEQA. The EIS anticipates the Applicant will obtain all required permits and issuance of Notice to Proceed may be withheld until the Applicant secures such permits.
46	1	Marilyn McFate	46.1	OPP	I can’t imagine destroying more of our area.	Comment noted.

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
46	1	Marilyn McFate	46.2	CUL	My husband and I were site stewards for the State until John passed. We worked with Boma Johnson of BLM on surveys and studying the archeological aspect of this area peoples lived here 4000 yrs. ago and theres many areas where they camped also miners at dripping springs with their arastra -	Comment noted.
46	1	Marilyn McFate	46.3	WLF	also that wash [Dripping Springs] is a hummingbird nesting area -	Comment noted. Project avoids the Dripping Springs ACEC.
46	1	Marilyn McFate	46.4	PH&S	I'm most concerned working with the Police dept. sometimes there was interference on radios and had to use Guadalupe Relay or Cunningham Peak this area didn't have TV until 1975 when the Relay was put up on Guadalupe – any electro magnetic – interference from transmission lines are bound to foul up mobil telephones – TV's and the Proving Ground told us our microwaves etc -	Interference and EMF are discussed in Section 4.2.8 of the DEIS. Additional information is provided in the TES.
46	1	Marilyn McFate	46.5	SUP PRO	I feel your best way is the already lines right away -	Comment noted.
46	1	Marilyn McFate	46.6	WLF	Also lines will create a problem with transfer of Desert Sheep and it the line just is not needed here.	Desert bighorn sheep impacts are disclosed in Section 4.4 of the EIS.
46	1	Marilyn McFate	46.7	PH&S	It took 9 yrs to get lines moved around parts of town – it created much havoc with wind shear & storms – lines down -	BLM's Preferred Alternative would avoid both Quartzsite and Blythe.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.1	GEN	Under Title 17 of the Arizona Revised Statutes, the Department, by and through the Arizona Game and Fish Commission (Commission), has jurisdictional authority and public trust responsibilities for management of the state's fish and wildlife resources. It is the Mission of the Department to conserve Arizona's diverse fish and wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.	Comment noted. AGFD is listed as an authorizing agency in Table 1.5-2 (Appendix 1) and is a cooperating agency.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.2	GEN	The Department has provided comments and data on the proposed alternatives in previous comments. We will restrict our comments in this letter to the BLM Preferred Alternative.	Comment noted.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.3	SUP PREF	The Department supports the BLM Preferred Alternative. It will have the least impacts to wildlife since it will parallel 1-10 on the south side. The south side of the interstate through Plomosa Mountains is more developed and has more recreational activity than the north side. Co-locating the line with the existing line through Copper Bottom Pass will have fewer impacts than alternatives through areas without transmission lines or roads. Additionally, the Department notes that proposed Best Management Practices, Applicant Proposed Measures and Monitoring, and Mitigation Proposals will further reduce impacts to wildlife.	Comment noted.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.4	DATA	Page 2 - 37, Table 2-12. It states that the Series Compensation Station has a long term disturbance of less than 0.1 acres. Is this accurate?	No, this is incorrect. It should be 1.7 acres as it is under all other action alternatives. Typo and totals have been corrected.
47	1	Jim de Vos, Assistant Director, Wildlife	47.5	WLF	Page 3 - 22 Special Status Wildlife Species. Sonoran pronghorn have been found along U.S. 95 south of Quartzsite from roughly milepost 77 to 82. This species is highly mobile and can	Identified mileposts are outside the study area and no impacts in this area are anticipated. However, Sonoran pronghorn will be part of the worker

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		Management Division, **Arizona Game and Fish Department**			move long distances searching for areas of green vegetation. During construction workers should be aware of the possibility of pronghorn moving into the area.	environmental education program so that construction workers are aware of this species in the project area.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.6	WLF	Additionally razorback suckers and bonytail chub are found in Colorado River backwater A - 7. Razorback suckers are also found in backwater A - 10. Both backwaters are found in the vicinity of the river crossing.	Comment noted. The river crossings avoid the backwater areas of the Colorado River.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.7	TRANS	Page 4 - 10 Section 4.2.9, Second Paragraph collision hazard for pilots. The Department flies helicopter and fixed wing wildlife surveys in the Plomosa and Dome Rock mountains. Please add these surveys to the discussion of collision hazards for pilots.	The AGFD aerial surveys were added to the EIS. BMP TT-10 was developed to address the issue of helicopter construction in Copper Bottom Pass causing an aerial hazard to AGFD aircraft. The BMP requires DCRT to coordinate helicopter construction with AGFD. A MM was added (MM-TT-02) to mark the lines and structures on segments in the Plomosa and Dome Rock Mountains.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.8	M&M	The Department requests that marker balls be added to the lines in the Dome Rock and Plomosa Mountains and that upon completion of the project, the Department be given maps with the location of the lines.	A MM was added (MM-TT-02 in Section 4.2.9) to mark the lines and structures on segments in the Plomosa and Dome Rock Mountains.
47	1	Jim de Vos, Assistant Director, Wildlife Management Division, **Arizona Game and Fish Department**	47.9	M&M	Page 2B -1 Appendix 2B-1. The Department would appreciate the opportunity to participate in the development of the Avian Protection Plan, Raven Management Plan, and Plant and Wildlife Species Conservation Plan.	Comment noted.
48	1	Bruce Easterday	48.1	OPP PREF	My wife and I attended the Blythe meeting regards to this project. We have Ag land that the northern most possible crossing would be built on. It is approx. 1.5 miles south of Blythe's town. We believe: 1. There is already an established corridor 3 miles south of our property/proposed corridor. It doesn't make sense to disturb more Agricultural land than there is presently.	The Preferred Alternative utilizes designated utility corridors and considers numerous resources in addition to agricultural lands. DCRT will be required to obtain an easement for crossing any private lands.
48	1	Bruce Easterday	48.2	ROUTE	2. The end of the project ends west of the town of Blythe & has to be entered from the south side. It appears that the route would most likely cross the river lining up with the southern most option & established corridor. Why would any project be built from the south heading north toward Blythe then dissecting more Ag land heading west and then turning south again so the lines then head north again to end up on the south site of the "terminal."	The Preferred Alternative considers numerous resources in addition to agricultural lands.
48	1	Bruce Easterday	48.3	OPP UR	3. We feel like the people of Quartzsite, we don't want the lines close to town.	Comment noted.
48	1	Bruce Easterday	48.4	WTR	4. Lastly, there is a severe water shortage on the Colorado. Blythe has one of the highest water priorities on the Colorado River. As other cities are hurt, Blythe stands to prosper from these problems. Having served for many years as a farmer & board member of a water district here in Yuma, I am acutely aware of lower priority water users & our problems associated with lower priorities that we have in Yuma. [last line of letter cut off]	Water resources are discussed in Sections 3.2.10 and 4.2.10 of the FEIS. Water sources would be widely distributed over the Project alignment and over a 2-year construction period. See comment response 37.42.

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49	1	Richard Drury, Laborers International Union of North America, Local Union 1184	49.1	GEN	After reviewing the DEIS, we conclude that the DEIS fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. Commenters request that the Bureau of Land Management ("BLM') address these shortcomings in a revised draft environmental impact statement ("RDEIS") and recirculate the RDEIS prior to considering approvals for the Project. We reserve the right to supplement these comments during review of the Final EIS for the Project and at public hearings concerning the Project. Galante Vineyards v. Monterey Peninsula Water Management Dist., 60 Cal. App. 4th 1109, 1121 (1997).	Comment does not specifically identify or address any specific errors or omissions in the Draft EIS. The BLM prepared the EIS with the assistance of multiple cooperators with permitting jurisdiction and expertise. The BLM believes the EIS complies with NEPA and BLM policies and is fully adequate.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of California Public Utilities Commission (CPUC),	50.1	CEQA	In order to determine CEQA compliance, CPUC/Dudek will need to review the completed Mitigation Measure Compliance and Reporting Plan (MMCRP) document, prior to its approval. The MMCRP should include all APMs, BMPs, and MMs applicable to the California portion of the Project, and present at a minimum: how the measures and BMPs will be implemented, under what conditions, timing, and responsible parties.	A MMCRP has been prepared pursuant to CEQA requirements.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.2	AQ	The chapter claims that major impacts to air quality were disclosed in Section 4.2. However, Section 4.2.1 does not disclose any major impacts and concludes that no ambient air quality standards were exceeded. The Appendix and Section 4.2.1 should be consistent.	The air quality section has been revised to address this comment.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.3	AQ	The document claims that SF6 emissions from gas-insulated circuit breakers in the switchyards could result in significant impacts to conformity *de minimus* thresholds or exceed a National Ambient Air Quality Standard (NAAQS). This statement is not correct. SF6 emissions are a GHG only emissions which is not considered with respect to conformity or NAAQS.	The air quality section has been revised to address this comment.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.4	AQ	In Section 2.3.1, the document does not address that the California portion of the project is within Riverside County. As such, the Riverside County Climate Action Plan and its GHG threshold of 3,000 $MTCO_2e$ per year would apply.	This section has been revised to address this comment and now includes a discussion of Riverside County's CAP and the screening threshold of 3,000 MTCO2e.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.5	GEN	Table reference is incorrect. It should read 2.3-1, not 2.1.	The Table reference has been corrected.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.6	GEN	Table reference is incorrect. It should read 2.3-1, not 2.1-1.	The Table reference has been corrected.

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50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.7	CE	There is no discussion as to what other projects would be occurring in the area at the same time and what impact those projects along with this project would have.	This section has been revised to address this comment.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.8	AQ	Add the following text to Section 2.3.5.1 and add “CO” to the 2.3.5.1 heading title: “The project is not anticipated to create a CO impact or hotspot during construction as emissions of CO would not be concentrated in any one area or intersection. There would be no CO emissions during operation as there is little to no activity generating CO emissions during operation.”	Revisions made as requested.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.9	AQ	Section 2.3.5.2 needs to identify the closest sensitive receptor to the project. This section also needs to address TAC emissions during operation.	Added information about where receptors are disclosed in the TES in Table 4.14-1 and provided the distance to the nearest receptor. Added brief discussion on TAC emissions during operations. The project is not a source of TACs during operation.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.10	AQ	Impact AIR 5 does not address the odor impacts during operation of the project.	Added sentence about not being a land use associated with odors.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.11	AQ	Section 2.3.6 does not address the Riverside County GHG threshold of 3,000 $MTCO_2e$ per year.	Confirmed. Moved to sentence after MDAQMD.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.12	AQ	Section 2.3.6.1 does not address the projects consistency with the goals or measures within the Riverside County Climate Action Plan. Therefore, the conclusion that the project is consistent with the CAP is unfounded.	Added information that a consistency analysis is not required because the project is less than 3,000 MTCO2e, further the measures in the CAP are not applicable to the project.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.13	VEG	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Other Special Status Plant Species – California” refer to Appendix 1C, Chapter 2.4 for analysis of other special status plant species in California.	Comment addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.14	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Other Special Status Wildlife Species – California” refer to Appendix 1C, Chapter 2.4 for analysis of other special status wildlife species in California. Delete last paragraph under this section, which only addresses Mojave fringe-toed lizard.	Comment addressed.

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50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.15	VEG	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Other Special Status Plant Species”, first sentence reference Table 3.4-5 in Appendix 3 (instead of TES Table 3.5-6).	Comment addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.16	GEN	Remove underline from “with a CRPR of 1 or 2.”	Comment addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.17	WLF	Global change in Appendix 1C, change Mohave desert tortoise to Mojave desert tortoise	Change made globally.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.18	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Second paragraph under “Federal and State-Listed Species” reference Table 3.4-8 in Appendix 3 (instead of TES Table 3.5-18).	Cite changed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.19	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Greater sandhill crane”, third sentence, change reference to Table 3.4-15 in Appendix 3 (instead of TES Table 3.5-20).	Cite changed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.20	WLF	Under “Mojave desert tortoise” remove reference to “(TES Table 3.5-20)”; Check all references to TES Table for accuracy.	Comment addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.21	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Razorback sucker”, fourth sentence, change reference to Table 3.4-15 in Appendix 3 (instead of TES Table 3.5-20).	Cite changed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.22	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Yuma Ridgway’s rail”, third sentence, change reference to Table 3.4-15 in Appendix 3 (instead of TES Table 3.5-20).	Cite changed.

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50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.23	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Last sentence, change reference to Table 3.4-14 in Appendix 3 (instead of TES Table 3.5-20).	Cite changed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.24	WLF	Third sentence under Other Special Status Wildlife Species, change “Other special status plant species…” to “Other special status wildlife species…”	Corrected.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.25	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Amphibians and Reptiles”, third sentence, change reference to Table 3.4-15 in Appendix 3 (instead of TES Table 3.5-20).	Cite changed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.26	WLF	Under “Birds”, third sentence, remove reference to TES Table 3.5-20. Check all references to TES Table for accuracy.	Comment has been addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.27	WLF	Need to reference updated analysis from CEQA Appendix in PEIS. Under “Mammals”, first sentence, change reference to Table 3.4-15 in Appendix 3 (instead of TES Table 3.5-20).	Cite changed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.28	WLF	Need to update analysis from CEQA Appendix in PEIS. Understand that this comment has been made several times. Some of the information in the CEQA Appendix conflicts with information provided in the DEIS and TES. Furthermore, these changes are necessary to support the MMs in the DEIS, and needed in order for us to make CEQA Findings relative each of the NEPA Alternatives. Add column for Potential Presence in Project Area and add the following information: Abrams’ spurge – Moderate potential to occur Bitter hymenoxys – Low potential to occur California ditaxis – Low potential to occur Desert unicorn-plant – Present Dwarf germander – Moderate potential to occur Flat-seeded spurge – Moderate potential to occur Glandular ditaxis – Moderate potential to occur Gravel milkvetch – Moderate potential to occur	Added column to Table 3.4-4 in EIS.

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
					Harwood's eriastrum – Present Harwood's milkvetch – Present Las Animas colubrina – Low potential to occur Pink fairy-duster – Low potential to occur Ribbed cryptantha – Present Saguaro – Moderate potential to occur Utah vine milkweed – Moderate potential to occur Winged cryptantha – Present	
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.29	WLF	Need to update analysis from CEQA Appendix in PEIS. Understand that this comment has been made several times. Some of the information in the CEQA Appendix conflicts with information provided in the DEIS and TES. Furthermore, these changes are necessary to support the MMs in the DEIS, and needed in order for us to make CEQA Findings relative each of the NEPA Alternatives. Change last column header to "Potential Presence in Project Area" and add the following information: Sonoran pronghorn – Not expected to occur in California portion. Western yellow-billed cuckoo – Not expected to occur in California portion. Southwestern willow flycatcher – Low potential to occur in California portion. Yuma Ridgway's rail – Moderate potential to occur in California portion. Mojave desert tortoise – High potential to occur in California portion. Razorback sucker – Moderate potential to occur in California portion.	Added to column in Table 3.4-8 in EIS.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.30	WLF	Need to update analysis from CEQA Appendix in PEIS. Understand that this comment has been made several times. Some of the information in the CEQA Appendix conflicts with information provided in the DEIS and TES. Furthermore, these changes are necessary to support the MMs in the DEIS, and needed in order for us to make CEQA Findings relative each of the NEPA Alternatives. Add column for Potential Presence in Project Area and add the following information: Couch's spadefoot – Moderate potential to occur Sonoran desert toad – Not expected to occur Mojave fringe-toed lizard - Present Sonoran mud turtle – Low potential to occur American badger – Present Arizona myotis – Low potential to occur California leaf-nosed bat – Low potential to occur Cave myotis – Low potential to occur Colorado River cotton rat – Low potential to occur Yuma mountain lion – Low potential to occur Desert bighorn sheep – Not expected to occur	Added column to Table 3.4-14 in EIS.

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
					Pallid bat – Low potential to occur Pocketed free-tailed bat – Low potential to occur Townsend's big-eared bat – Moderate potential to occur Western yellow bat – Moderate potential to occur Yuma myotis – Moderate potential to occur Arizona bell's vireo – Not expected to occur Bendire's trasher – Low potential to occur Burrowing owl – Present California black rail – Moderate potential to occur Crissal trasher – Low potential to occur Elf owl – Low potential to occur Gila woodpecker – Low potential to occur Gilded flicker – Low potential to occur Golden eagle – Low potential to occur Greater sandhill crane – Moderate potential to occur Le Conte's trasher – Present Long-eared owl – Not expected to occur Loggerhead shrike – Present Mountain plover – Moderate potential to occur Northern harrier – Present Short-eared owl – Not expected to occur Sonora yellow warbler – Low potential to occur Summer tananger – Low potential to occur Swainson's hawk – Low potential to occur Vermillion flycatcher – Moderate potential to occur Yellow-breasted chat – Low potential to occur Yellow-headed blackbird – Moderate potential to occur Yuma Ridgway's rail – Moderate potential to occur	
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.31	Veg	The biological resources environmental consequences section of the DEIS and the supporting tables in Appendix 4 provide some impact quantification in terms of disturbance acreages or linear miles; however quantification is not provided for all relevant biological resources. In some cases impacts are reported differently between the DEIS Chapter 4.4 and the CPUC supplement for the California segment (Appendix 1C). For example, Table 4.4-4 in Appendix 4 of the DEIS shows a total disturbance to blue palo verde-ironwood on the Palo Verde Mesa as totaling approximately 2.5 acres; however, Table 2.4-1 in Appendix 1C (pg. 1C-76) shows 7.56 acres of impacts to this resource using a worst case assumption. The impact analyses and quantification of impacts should be consistent between the PEIS and the CPUC CEQA Appendix, and for at least the California segment, the quantification provided should be	Comment addressed. Calculations between the EIS and Appendix 1C were reviewed and revised for consistency.

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
					sufficient to evaluate the significance of the impact and adequacy of the mitigation.	
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.32	CEQA	According to this section, "AMPs have been identified and would be implemented by the project applicant. In addition, BLM would require implementation of Best Management Practices (BMPs). A CEQA mitigation measure is needed to ensure that the AMPs and BMPs are implemented in California, on public and non-public lands as applicable, and sufficient for compliance with CEQA. See comments on MM-BIO-CEQA-3.	Comment addressed. Mitigation measures have been developed (incorporating AMPs, CMAs, and BMPs) on public and non-public lands as applicable, to meet CEQA requirements.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.33	CEQA	Many of the BLM BMPs use "would" be implemented or "would" be installed, etc. Many of these measures also specify "on public lands in California". If these need to apply to non-public lands in California, a CEQA measure with "shall" is needed to fill in the gaps; See comments on MM-BIO-CEQA-3.	Comment addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.34	CEQA	Many of the Applicant Proposed Measures use "to the extent practicable", a CEQA mitigation measure or other conditions are needed to clarify when these APMs shall be implemented. See comments on MM-BIO-CEQA-3.	Comment addressed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.35	WLF	Please specify the species and the seasonal restriction dates or an overall period that this measure applies to and describe what "would be observed" means.	Comment addressed in Section 2.4.2 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.36	WLF	Please specify or provide examples of what a bird or bat compatible design standard is.	Comment addressed in Section 2.4.2 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.37	VEG	This BMP does not require avoidance of desert riparian woodlands, which conflicts with the BLM DRECP CMAs for this resource in California. This BMP should reference to BMP BIO-52, which addresses avoidance and setbacks that is more consistent with the CMAs.	Revised and added to MM BIO-CEQA-3 in Section 2.4.2 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.38	RIP	This BMP appears to be a measure BLM is requiring of itself to management riparian areas? What is the intent of this measure and what does "all riparian areas" refer to.	Comment addressed in Section 2.4.2 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge,	50.39	WLF	Based on a review of the surface water mapping along the project alignment, it would appear that all or a majority of the project would be within 1,000 feet of a wash or other surface water feature. Implementation of this measure as written would result in flight diverters along the entire length of the project. Is the intent really to place diverters every 1,000 feet along the	Measure modified in Section 2.4.2 of Appendix 1C to give CPUC/BLM authority to select final type and spacing of diverters.

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		Dudek on behalf of CPUC			entire alignment? Please clarify in the discussion.	
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.40	VEG	BMP says that project facilities would be sited to avoid "dune vegetation". Based on the land cover map for California (Figure 3.5-2 and 3.5-3), land cover types and vegetation alliances do not use the term "dune vegetation". On separate geology figures (Figure 3.3-8) Sand and Dune System mapping is shown as well as areas of active windblown deposits. Does this measure apply to any vegetation on areas mapped as sand dunes or are there vegetation types that would considered "dune vegetation" that would be avoided? Please clarify in the BMP.	MCV definition of "Dune vegetation" added to MM BIO-CEQA-3 in Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.41	DATA	These CMAs refer to DFAs. None of the Figures in Appendix 1 or Appendix 7 depict the DRECP LUPA DFAs; this should be added to applicable Figures.	The DFA boundaries have been added to Figure 3.2-2c of the FEIS and Figure 3.11-1c of the TES.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.42	WLF	Text refers to CMAs related to Bats but does not list the applicable DRECP LUPA CMAs, which would be LUPA-BIO-BAT-1 and LUPA-BIO-BAT-2. Please revise if applicable.	CMAs are listed verbatim, suggest leavings as is. MM WIL-CEQA-4 (Appendix 1C) covers bats.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.43	DATA	See comment above on impact quantification consistency with the DEIS. Is there additional impact detail, like tabular resource-specific impact information, that can be provided for the California segment? If yes, then add it. If no, then please explain further.	Impact quantification will occur after focused surveys are conducted as outlined in various MMs.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.44	CEQA	This section evaluates compliance with the CDCA CMAs. Compliance with the CMAs in many cases relies on implementation of BLM BMPs and the APMs. The BLM BMPs are written with different language (would vs shall), and the APMs are written with flexible/subjective language with no enforcement mechanism to require that they are implemented unless conditioned into the state and federal project approvals or unless required separated through CEQA mitigation measures. See comments on MM-BIO-CEQA-3.	MM BIO-CEQA-3 (Appendix 1C) has been updated to add teeth to these measures and give BLM and CPUC the authority to determine where and when certain measures are applicable. See MM BIO-CEQA-1. In addition, a sentence has been added to all MMs that specify what APMs, BMPs, and CMAs apply to that measure.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.45	WLF	Text refers to Figure D-1 from Appendix D of the BLM DRECP LUPA. That DRECP LUPA figure depicts many potential wildlife movement corridors including corridors through the proposed project area. Revise the narrative to reflect this.	Text revised.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.46	CEQA	The discussion states that APM BIO-13 "requires" that….be avoided. The APMs do not "require" anything unless there are conditions, compliance requirements, and/or mitigation measures in CEQA that require the APMs be implemented. Revise language or referring to MM-BIO-CEQA-3. See comments also on MM-BIO-CEQA-3.	Additional text added to both the impact analysis and MM BIO CEQA-3 (Appendix 1C) to clarify the applicability of APMs, BMPs, and CMAs.

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50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.47	CEQA	The introduction to the mitigation measures NEEDS to specify that the measures apply only to the California segment of the Project. Also, it is unclear in some of the measures whether the mitigation action (e.g., restoration) would be allowable on BLM land or whether it would be required to occur on non-public lands in California. Please clarify.	Text added to the introduction of Appendix 1C to clarify the geographic extent of the CEQA impact analysis and resulting MMs.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.48	M&M	Revise measure name to read “Implement Biological Resources Applicant Proposed Measures and Best Management Practices”. This measures also reads “The APMS, BLM BMPS, and CMAs in Section 2.4.2 and 2.4.3 above provide a suite of BMPs to be implemented for the Project”; however, Section 2.4.3 does not say that the CMAs will be implemented. Section 2.4.3 describes how the CMAs are being complied with using the APMs and BMPs. This MM appears to say that all the CMAs in Section 2.4.3 will be required to be implemented; however, I am not certain that is true. BLM is not requiring the CMAs, as written, to be implemented on their lands. Also this measure should specify that the BLM BMPs would be implemented on both the public and non-public lands in California, if that is indeed the case.	Added to measure name. Additional text added to measure in response to the spirit of your comments.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.49	VEG	Measure states that “Applicant will provide creation and/or restoration of habitat at the following ratios….”, however, it later says “land identified for preservation would….”. Does this measure allow for preservation of habitat to compensate for this permanent impacts If so, text revisions are necessary. Also, must discuss the feasibility of creating/restoring ironwood woodland or mesquite thickets; as written, it is not reasonable to believe that the creation/restoration of these communities is a feasible and achievable measure. Impact acreages listed here are vastly different from the impact numbers listed in DEIS Table 4.4-4 (page App 4-8).	Text updated in MM BIO-CEQA-12 (Appendix 1C) as requested.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.50	DATA	Figure must show the BLM NCLs designation in California, based on the DRECP LUPA. And the document must be revised to address the NCLs designation in California, similar to the way ACECs are addressed.	Added NCLs to the special designations figure (Figure 3.5-10), and text to the EIS and TES to describe NCLs. Note, there are no NCLs within the analysis area for special designations.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.51	DATA	Figure must show the BLM SRMAs in California, based on the DRECP LUPA.	The Mule Mountains SRMA was added to Figure 3.10-1. This SRMA was already described in the text.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.52	DATA	Figure must show the BLM SRMAs in California, based on the DRECP LUPA.	The Mule Mountains SRMA was added to Figure 3.10-6. This SRMA was already described in the text.

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50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.53	DATA	Figure must be revised to show the current ACECs in California, based on the DRECP LUPA. Figure must also show the BLM SRMAs in California, based on the DRECP LUPA. Figure must also show the BLM National Conservation Lands (NCLs) designations and the Development Focus Areas (DFAs) designations in California, based on the DRECP LUPA.	The Mule Mountains ACEC was added to Figure 3.11-1c for the recreation section; however, this ACEC does not fall within the analysis area for special designations. ACECs, SRMAs, NCL, and DFA was added to the recreation and special designation figures, as appropriate, and the text was revised to ensure these designations are described for CA.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.54	GEN	PDF file on BLM website would not open or download after multiple attempts.	Comment noted.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.55	DATA	ACECs shown in California are outdated and do not reflect the current ACECs based on the DRECP. Must be updated with current information. This map and the document also do not address the BLM National Conservation Lands (NCLs) designations. This map must also show the DFAs if you intend to reflect all relevant designations.	The Mule Mountains ACEC was added to Figure 3.2-2c for the recreation section; however, this ACEC does not fall within the analysis area for special designations. ACECs, SRMAs, NCL, and DFA were added to the recreation and special designation figures, as appropriate, and the text was revised to ensure these designations are described for CA.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.56	DATA	Figure must show the BLM NCLs designation in California, based on the DRECP LUPA.	NCLs were added to Figure 3.4-5.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.57	DATA	Figure must show the BLM SRMAs in California, based on the DRECP LUPA.	SRMAs in CA were added to Figure 3.8-1.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.58	DATA	ACECs shown in California are outdated and do not reflect the current ACECs based on the DRECP. Must be updated with current information.	Current ACECs were added to Figure 3.8-6.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.59	SOIL	Although tabular soils data is provided in Appendix 3, there does not appear to be an Appendix 3A containing soils maps. Please include.	Figures including soils maps are contained in Appendix 7.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene,	50.60	GEN	In the first sentence of the section, Section 3.3 should be changed to Section 3.2.	Section numbers were incorrect in Appendix 3; Section 3.3 will be correct for the FEIS.

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		Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC				
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.61	NOISE	There seems to be an inconsistency between the findings of significance (significant and unavoidable) in Section 2.12.4.1, Construction, and the subsequent discussions regarding decommissioning noise ("It is expected that impacts resulting from the decommissioning process would be like the impacts during construction of the Project. As discussed above, with implementation of APMs, compliance with County of Riverside, and City of Blythe (as necessary) local ordinances, noise impacts from construction, operation, and maintenance of the Project would be less than significant."	Noise analysis modified to make LTS/M consistent throughout noise section.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.62	GEN	Apparent spelling error: "were" should be "where".	Corrected in Section 2.12 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.63	NOISE	Impact NOI-3 lacks a discussion of typical groundborne vibration levels from construction equipment, the reduction of vibration with distance, etc.	Please see Impact NOI-2 in Section 2.13.5 of Appendix 1C which discusses ground-borne vibrations.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.64	VIS	Information to adequately address this comment is included in the Project record but should be clearly presented in the CEQA Appendix to meet CEQA requirements. The analysis states that the Project would appear in views from Interstate 10 and "other locations in the vicinity of Blythe" but does not specifically state whether scenic vistas are available from Interstate 10 and what other locations may provide opportunities for scenic vistas. Please clarify what "other locations" were considered. This comment can be addressed by inserting a discussion/overview of the Project study area located west of the Colorado River as described in Section 3.11.2.2, Visual Resources Study Area Overview, of the EIS. In particular, incorporation of the language on Page 3-53 disclosing where the Proposed Action would be visible from and language on 3-56 beginning with "The western end of the study area…" and ending with "the area offers broken views of distant rugged mountains in all directions." In addition, the analysis for scenic vista impacts from Interstate 10 should be bolstered by incorporation of visual contrast rating form observations/"comments" that were prepared for KOPs 55 and 56 and are included in the Project record (see TES Appendix 3C page 289 of 322 and in particular, comments pertaining to operations (for KOP 55) and page 297 of 322 and in particular, comments pertaining to scenic quality). In addition, KOP 52 (and visual contrast rating from observations; TES Appendix 3C or the KOP 52 analysis for the Colorado River and California Zone included in the TES (Chapter 4.18, Section 4.18.4.5) can be a surrogate for Interstate 10 due to proximity.	Revised in Section 2.1 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard,	50.65	VIS	Information to adequately address this comment is included in the Project record but should be clearly presented in the CEQA Appendix to meet CEQA requirements.	Clarified in Section 2.1 of Appendix 1C. The important point to make here is that, where visible, the Project / alternatives would be intermittent or distant.

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		Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC			The analysis should clarify whether the Project is a) visible from segments of Interstate 10 and State Route 95 within the Palo Verde Valley and b) whether project construction would result in substantial damage to existing scenic resources including trees, rock outcroppings, and historic buildings. Incorporate visual contrast rating form observations/"comments" for operations that were prepared for KOP 55 (I-10) and KOP 41 (I-10 at Colorado River crossing) which approximates views from US 95 near Blythe. The bulk of the analysis provides proximities of the interstate and state route to Project components, but potential effects to scenic resources present in their viewshed are not specifically addressed and should be clarified to meet CEQA requirements. Also, as an alternative to referring to the Impact AES-3 analysis, incorporate relevant effects discussions pertaining to views from Interstate 10 and State Route 52 (if the Project would be visible from State Route 52). Utilize before and after observations documented in the visual contrast rating forms (TES Appendix 3C) or the KOP analysis for the Colorado River and California Zone included in the TES (Chapter 4.18, Section 4.18.4.5).	No scenic resources as described would be damaged within the highway corridors, or their viewsheds. Clarification also added indicating that ground disturbance described in the TES and Visual Contrast Rating Forms would constitute scaring impacts.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.66	VIS	Information to adequately address this comment is included in the Project record but should be clearly presented in the CEQA Appendix to meet CEQA requirements. Add support for the existing character analysis by incorporating a discussion of typical effects anticipated at appropriate KOPs located west of the Colorado River in California. The selected KOPs should reflect the viewer groups in California (i.e., motorists, recreationists, urban and ag receptors) and the before and after effects can be sourced from visual character rating forms. KOP 45 (McIntyre County Park – recreationists), 55 (I-10), 51 (22nd Avenue at Lovekin Boulevard – ag receptors), and 47 (Appleby Elementary – urban receptors) are examples of KOPs that encompass the range of receptors previously identified in the study area located west of the Colorado River.	In Section 2.1 of Appendix 1C, added specification of limited effects to views w/in Blythe, west of Colorado River.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.67	M&M	Please ensure that the MMRP includes specificity regarding the implementation of this mitigation measure. For example, the MMRP should identify where construction will expose gravel and rock and should identify whom will determine whether impacts would be considered an "attention-attracting disturbance".	Noted; FEIS addresses this.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.68	M&M	Information to adequately address this comment is included in the Project record but should be clearly presented (and clarified) in the CEQA Appendix to meet CEQA requirements. The analysis discloses that the new transmission line would be "similar in scale, if not completely in structure type to an adjacent, existing transmission line." The analysis also states that towers and conductors would repeat the vertical and undulating horizontal elements in existing views and concludes that impacts would be less than significant. If this is the case (and if no FAA or other lighting will be required for transmission line towers) please clarify why MM VIS-04 and MM VIS-06 are necessary. The measures seem to be redundant to the design characteristics of the Project, as proposed.	These are the programmatic mitigation measures that would apply to the entire Project. Appendix 1C lists all MMs from the DEIS that would apply to segments within CA. Other MMs apply to specific segments outside of CA.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge,	50.69	VIS	Information to adequately address the comments below are included in the Project record but should be clearly presented (and clarified) to specifically address effects thresholds. Please revise the headings to Sections 4.11.5.1, 4.11.5.2, and 4.11.5.3 (or add introductory statements) to clarify which environmental effects indicators are focused on in the sections.	Clarification was added within the text in Section 4.11 of EIS. Additional information is provided in the VCRFs in Appendix 3C of the TES.

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		Dudek on behalf of CPUC			Instead of “Residents and Local Viewers” for Section 4.11.5.3, it may make sense to relabel as “Visual Change and Effects to Views” as the analysis in the section is primarily supported by a before/after KOP analysis. Recommend also expanding the discussion in this section to provide a greater volume of before/after KOP analyses to present a more familiar analysis and provide support for adverse determinations and mitigation measures.	
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.70	GEN	In first paragraph of analysis – insert TES after “Section 3.17.1 of the”. Typo	Corrected in Section 2.16 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.71	GEN	Information to adequately address this comment is included in the Project record but should be clearly presented (and clarified) in the CEQA Appendix to meet CEQA requirements. In second paragraph of analysis, please include a reference to the table in the TES that supports the claim that cumulative additional volume would represent a volume increase of one percent or less on various segments of I-10 and US-95.	The references to the TES will be checked after all comments are resolved and no further edits are needed.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.72	LWC	Clarification is required to adequately address the comment below. Please clarify whether Project effects to LWC Polygon 35_SW (located west of the town of Quartzite) would be adverse. The DEIS discloses that the Project would effectively eliminate LWC Polygon 35_SW, that effects would be long-term and “minor to major” however, a clear determination is not provided.	In the TES Section 4.11.10, Unavoidable Adverse Effects, already states: Unavoidable adverse effects to special designations would occur from reducing LWC Polygon 35_SW to less than 5,000 acres, which would affect its designation as LWC, and moderate to major effects on the WA criteria required of LWC. Whether effects are adverse or beneficial are not qualified in the TES or FEIS.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.73	SOC	No comments. Socioeconomics is not normally an environmental effect under CEQA unless related to population/housing/growth or urban decay. No such impacts are identified.	Comment noted.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.74	EJ	“Income data for the city of Blythe CDP, the CCD area of Blythe, Ripley CDP, and Mesa Verde CDP were presented in Section 3.10.2.3. These local areas along the Proposed Action and Action Alternatives have low-income percentages that are greater than the EJ.” What does “greater than the EJ” mean? Should that read greater than the County average?	The sentence was incomplete (Section 4.10.4.3 of DEIS); it should have read “the EJ comparison area.” The EJ study or comparison area is a 1-mile corridor encompassing the Proposed Action and Action Alternative segments. The analysis area includes the study area and all census block groups crossed by the Proposed Action and Action Alternative segments. This ensures the inclusion of adjacent and nearby communities that may be affected.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.75	CEQA	This section does not clearly identify what category of impact would be considered cumulatively considerable (significant) under CEQA. “Aside from the identification of cumulative effects to Tribal Resources (Section 4.7 of the TES [BLM 2018]), no major or significant cumulative effects were identified in the TES for the portions of the Project area within the Colorado River and California Zone.” From this can we determine that there is a	As noted in Section 4.7.11 of the TES, an increase in visual degradation along segments p-17 and p-18 may result in a moderate to major cumulative impact on the Mule Tank Discontiguous Rock Art District. The BLM Preferred Alternative does not utilize segments p-17 or p-18. Minimization of cumulative effects of this Project would be addressed through avoidance of

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					cumulative impact for Tribal Resources within California? Are negligible, minor, and moderate cumulative impacts considered to be less than significant?	sites and minimization of the Project footprint, before any consideration of mitigation of sites and data recovery. As noted in Section 2.6.5 of Appendix 1C, impacts to tribal resources would be potentially significant – less than significant with mitigation.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.76	GEN	Section states that "[W]here the analysis determines that impacts would be similar to the Project, the Project is selected as environmentally superior for that resource area." It would be more accurate to say that for that resource, an environmentally superior alternative has not been identified. If this statement were taken on its face value, then the selection of Alternative 2 Sub 4D as the environmentally superior alternative (in Section 4.4) is incorrect.	Revised sentence in Section 4.1 of Appendix 1C to read "Where the analysis determines that impacts would be similar to the Project, an environmentally superior alternative for that resource area has not been identified."
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.77	VIS	Aesthetics should be called out separately, as project alternatives would result in a potentially significant impact even though the proposed project would be less than significant. (This is consistent with other resources called out in this section, such as Agriculture).	Revised (Section 4.1, Appendix 1C).
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.78	VIS	For consistency, Aesthetics should be given its own subheading. "Other Resources" that are less than significant for the project and all project alternatives include air quality, GHG, minerals, population/housing, public services, transportation, geology, and hydrology/water quality.	Moved Aesthetics to its own subsection, now Section 4.1.1 in Appendix 1C. Added sentence as to what other resources (Section 4.1.16 in Appendix 1C) includes.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.79	GEN	"…near Alamitos and Huntington Beach combined cycle as plants." Delete "as"?	This was a typo; "as" should have been "gas". Corrected in Section 4.3 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.80	GEN	Make "2" superscript to indicate footnote.	Corrected in Section 4.3 of Appendix 1C.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.81	GEN	See comment on page 190. Alt 2 Sub 4D is only the environmentally superior alternative if the project is not considered automatically superior when alternative impacts are similar.	Revisions made in Section 4.4 of Appendix 1C based upon the comment provided on page 190.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.82	GEN	The impact conclusions text in the various impacts sections should be compared to the impact conclusions in Table 4.1.1. There are some discrepancies that need to be changed or at least clarified.	Discrepancies in Appendix 1C have been fixed. Section 4.1, including table 4.1-1 and the alternatives discussion related to each resource has been revised to accurately reflect conclusions (impact determinations and mitigation measures) in current CEQA Appendix.

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.83	CEQA	The DEIS and Appendix 1C (Supplemental California Public Utilities Commission Information) partially rely on APMs, BMPs, and CMAs to mitigate environmental impacts, most notably potential impacts to biological resources impacts. However, some of these measures are either project design features, are inconsistent with each other, or do not adequately provide enough information to ensure that implementation would occur, be trackable, and/or be enforceable as is required pursuant to CEQA. In addition, phrases such as "where possible", "where practicable", "as required by BLM", "on public lands in California", etc. do not provide solid assurances that these proposed measures would be implemented along the entire project alignment and substation locations in California. Furthermore, because survey data was not available when the DEIS and Appendix 1C were prepared and will not be available before the FEIS, concluding that avoidance of all resources based on APMs, BMPs, and CMAs is not possible. As such, and discussed previously with BLM, a worst-case scenario should be assumed in California and addressed with appropriate mitigation. Relevant to any of the instances described above, and to ensure CEQA compliance, a MM must be proposed in the Appendix 1C and the MMCRP that provides at a minimum, the following information to address each potential impact where it has not yet been included: • What potential impact is being mitigated with implementation of the MM? In other words, why is the MM necessary? How will implementation of the MM be achieved to ensure that the end result is a less than significant impact? • Where will the MM be implemented? On both public and non-public lands? Specific to compensatory mitigation, where will this be implemented? • When will the MM be implemented? Prior to, during, or after construction? If during construction, include the anticipated phases and anticipated duration. Will specific seasonal restrictions apply to various areas of the project based on the presence of resources determined through surveys prior to construction? • Who will be responsible for implementation of each MM? • Who will be responsible for mitigation implementation oversight and enforceability? Note that if the CPUC uses the EIS pursuant to CEQA Guidelines Section 15221 rather than preparing their own EIR, the CPUC will be responsible for enforcement of mitigation implementation in the California portion of the project. • Use terminology in the MM and MMCRP such as "shall" and "must." Specific and appropriate mitigation requirements, including compensatory mitigation must be included in Appendix 1 C (and in the FEIS when Appendix 1C is relying on the NEPA document). Furthermore, for consistency and accuracy, any text in the analysis of impacts that requires mitigation to bring potentially significant impacts to less than significant levels must be revised accordingly. Also, ensure that as all mitigation is being developed and/or refined in the FEIS and Appendix 1C, that both permanent and temporary impacts during construction and operations are being considered and addressed. Please refer to all previous comments for specific examples where this issue with mitigation has been raised, and review all other text in Appendix 1C to ensure that this approach regarding including mitigation pursuant to CEQA has been adequately incorporated for all	MMs revised throughout Appendix 1C.

Response ID No.	Number of Signatures	Name	Comment ID No.	Comment Type	Comment	Response
					resources as needed.	
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.84	GEN	The impact conclusions text in the various impacts sections should be compared to the impact conclusions in Table 4.1.1. There are some discrepancies that need to be changed and/or clarified. Based on all the comments above, and what should result in a detailed check of all current and necessary additional mitigation measures and significance conclusions, this could also result in a few changes (for accuracy and consistency) to the Alternatives discussion.	Section 4.1, including Table 4.1-1 and the alternatives discussion related to each resource has been revised to accurately reflect conclusions (impact determinations and mitigation measures) in current CEQA Appendix.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.85	NOISE	Construction noise was conservatively determined to be significant and unavoidable. Some of the typical construction measures are incorporated as APMs and BMPs, for example: BMP NO-05: County, State, and Federal Noise Regulations. Project would be located far enough from residences, or include engineering and/or operational methods such that county, state, and/or federal regulations for noise are not exceeded. It is not particularly clear how this BMP would lower the exposure to construction noise at any particular location. The BMP also lacks a commitment that construction shall be limited to the timeframes allowable by local noise ordinances. As such, a MM should be proposed to include this commitment. If not already clear in the analysis, the MM should also include additional detail such as defining the hours of construction and assumptions regarding noise generated by various construction equipment/activities. Furthermore, and specific to the conclusion of significant and unavoidable, feasible MMs that could minimize significant adverse impacts should be included. It's also possible that the conclusion could be revised to "less than significant with mitigation." If the conclusion is still significant and unavoidable even after mitigation, this would be acceptable provided there is adequate information included to support that even after all feasible mitigation has been considered and implemented, the significance conclusion would remain the same.	Noise analysis has been revised in Appendix 1C Section 2.13 and new mitigation has been added to make impacts Less Than Significant with Mitigation.
50	9	Wendy Worthey, Adam Poll, Ryan Henry, M. Howard, Perry Russel, M. Greene, Joshua Saunders, B. Grattidge, **Dudek** on behalf of CPUC	50.86	TRAN	Referring to BMP T&T-09: Repairs to Local Roads. Local roads would be restored if road damage occurred as a result of Project construction. Include a MM that provides additional detail, including at a minimum, identifying who will determine the damage and its extent, when these road inspection(s) would occur, and who would repair the damage and when (i.e., within a specified timeframe of the damage would the repairs occur).	New mitigation added to Section 2.17 (Traffic and Transportation) to address this comment. Specifically, who will repair the damage, verified by applicable jurisdiction, and when damage will be repaired added to new mitigation measure.

ALJ/DAP/mph **Date of Issuance 11/5/2021**

Decision 21-11-003 November 4, 2021

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of DCR TRANSMISSION, LLC for a Certificate of Public Convenience and Necessity for the Ten West Link Project.	Application 16-10-012

DECISION GRANTING DCR TRANSMISSION, LLC A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE TEN WEST LINK PROJECT

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DECISION GRANTING DCR TRANSMISSION, LLC A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE TEN WEST LINK PROJECT

Summary

This decision grants DCR Transmission, LLC (DCRT) a certificate of public convenience and necessity (CPCN) for the Ten West Link Transmission Line Project, to construct a 125-mile, series-compensated 500 kilovolt transmission line with a conductor capacity of approximately 3200 megawatts between the Colorado River 500 kilovolt substation, owned by Southern California Edison Company, and Delaney 500 kilovolt substation, owned by Arizona Public Services Company.

This CPCN is conditioned upon DCRT's compliance with (a) the Mitigation Monitoring and Reporting Plan attached to this decision; (b) the Electric and Magnetic Fields Field Management Plan, filed as updated pursuant to the Final Environmental Impact Statement based on environmentally superior alternative route and configuration; (c) the Applicant's Proposed Measures for Safety and the Bureau of Land Management's Required Best Management Practices, attached as Appendix 2A of the FEIS; and (d) all other necessary state and local permitting processes and approvals.

This decision also certifies that the FEIS satisfies the requirements under National Environmental Policy Act and California Environmental Quality Act and concludes the maximum reasonable and prudent cost for the Ten West Link Transmission Line Project is $389,045,968 in 2021 dollars, including contingency, subject to the Commission's authority to review actual costs incurred for reasonableness and prudency and to challenge them as appropriate at the Federal Energy Regulatory Commission.

Lastly, this decision:

(a) authorizes DCRT to file the FERC Forms 1 and 3-Q as proxies to meet the requirements of General Orders (GOs) 65-A and 104-A;

(b) denies DCRT's requested exemption from the reporting requirements under GO 77-M; and

(c) grants DCRT limited exemption from the sections V.C., V.E. and V.G. of the Affiliate Transaction Rules.

This proceeding is closed.

1. Background

1.1. Proposed Project Description

Ten West Link Transmission Line Project is a proposed 125-mile 500 kilovolt (kV) single-circuit, series-compensated, transmission line project (Proposed Project). The California Independent System Operator (CAISO) Board, in the 2013-2014 Transmission Planning Process (TPP), approved the Proposed Project to provide economic benefits for California ratepayers.[1] The Proposed Project will span between the Delaney Substation (located just north of the Palo Verde generating plant in Tonopah, Maricopa County, Arizona) and the Colorado River Substation (located west of the Arizona-California border in Riverside County, California).

The Delaney Substation is owned and operated by Arizona Public Service (APS) and connected to the Palo Verde-Hassayampa Common Bus. The Colorado River Substation is owned and operated by Southern California Edison (SCE) and connected at the 500 kV bus.

[1] *Opening Brief of the California Independent System Operator Corporation*, filed February 12, 2021 (CAISO Opening Brief), at 1. *See also*, *Application of DCR TRANSMISSION, LLC for a Certificate of Public Convenience and Necessity for the Ten West Link Project* (Application), Appendix M.

Spanning approximately 103.5 miles in Arizona and 21.5 miles in California, the proposed route of the Proposed Project largely follows the existing Devers-Palo Verde (DPV) 500 kV transmission line and utilizes the established utility corridor, crossing Federal land, including lands managed by the Bureau of Land Management (BLM), Bureau of Reclamation (Reclamation), and the United States Army, Yuma Proving Ground (YPG).[2]

The Proposed Project will have a conductor capacity to transmit 3,200 megawatt (MW) and provide interconnection capability for new energy projects located in the region.[3] Once the Proposed Project is constructed and energized, DCRT intends to establish a second contiguous 500 kV transmission connection from the Palo Verde trading hub in Arizona to the Devers substation in Southern California.

The Proposed Project construction includes:

1. Installation of a single 500 kV transmission circuit supported by a combination of self-supporting and guyed galvanized steel lattice towers, and
2. Construction of a new series compensation substation (SCS), to be located within the 200-foot-wide right of way (ROW) parallel to the existing SCS associated with the DPV transmission line, approximately 47 miles from the APS Delaney Substation.[4]

The proposed transmission structures will comprise of steel lattices of various configurations[5] and between 72 and 195 feet in height, depending on the span length required and topography, with most being shorter than 142 feet.

[2] Record of Decision (ROD), November 22, 2019, at 2.

[3] Final Environmental Impact Statement (FEIS), Executive Summary, at ES-1.

[4] A detailed description of Project facilities is found in Application under Appendix A.

[5] FEIS, Executive Summary, at ES-5-ES-6.

Span lengths between structures would vary from 400 to 2,300 feet, depending upon terrain conditions, current land use, structure type, and site-specific mitigation objectives. Since the new SCS will be in Arizona, this decision focuses on the proposed transmission lines located within California, in the context of the overall Proposed Project.

The CAISO's 2013-2014 economic evaluation projected the benefit-to-cost ratio (BCR) for the Proposed Project to range from 0.87 to 1.17, with a discount rate ranging between five to seven percent.[6] The CAISO concluded that adding the Proposed Project provides Southern California with more direct access to efficient generation at Palo Verde Trading Hub and APS system.[7] Based on 8,760 hourly production simulations for the study years 2018 and 2023, the CAISO calculated annual ratepayer benefits to be $26 million in 2018 and $17 million in 2023, respectively. In July 2015, the CAISO selected DCRT, as the approved project sponsor for the Proposed Project, to develop, permit, design, finance, build, own, operate and maintain the Proposed Project in accordance with the CAISO tariff. DCRT and CAISO entered into the Approved Project Sponsor Agreement (APSA) on December 1, 2015.[8]

DCRT is a limited liability company organized under the laws of Delaware and a joint venture between Starwood Energy Group Global, Inc. (Starwood Energy) and Atlantica Yield PLC (Atlantica).[9] Starwood Energy, through its

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[66] Application, Appendix M, *2013-2014 Transmission Plan*, dated July 16, 2014 (2013-2014 TPP) at 266.

[7] *Id*., at 255.

[8] Application, Appendix N.

[9] Exhibit DCRT-1, Chapter I, *Prepared Direct Testimony of DCR Transmission, L.L.C. in Support of Its Application for a Certificate of Public Convenience and Necessity for the Ten West Link Project, Prepared Direct Testimony of Ali Amirali in Support of DCRT* (Amirali Opening Testimony), at I-3.

affiliates, is the managing member of DCRT with an 87.5% majority ownership interest. Atlantica holds a 12.5% minority ownership interest.[10]

Starwood Energy, an affiliate of private real estate investment firm Starwood Capital Group, specializes in energy infrastructure investments, with a focus on the transmission, renewable power generation, and natural gas sectors.[11] Through its general opportunity funds and other affiliated investment vehicles, Starwood Energy manages more than $2 billion in total equity commitments with transactions totaling more than $4 billion in enterprise value. Starwood Energy developed, constructed, and owned two major transmission projects: 1) the Neptune Regional Transmission System, a 65-mile, 660 MW undersea transmission power cable connecting Long Island to New Jersey, and 2) Hudson Transmission Partners, an 8-mile, 660 MW undersea transmission power cable connecting New Jersey to New York City.[12] Both lines were completed under budget and ahead of schedule.[13]

Starwood Energy also owns minority interest in certain transmission lines in California, Arizona, and Nevada, and developed wind generation in Texas, gas generation in California, and solar generation in Ontario, Canada.[14] Starwood Energy's total investments include 65 MW biomass, 940 MW of wind generation, and 1.8 gigawatt (GW) of gas generation, including current

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Atlantica acquired the interest of Abengoa Transmission & Infrastructure, LLC during the course of the proceeding.

[10] *Ibid*.

[11] Application, at 17.

[12] *Id.,* at 18.

[13] *Ibid*.

[14] *Ibid.*

ownership of two 50 MW gas projects in California, as well as investments in energy storage platforms.[15]

In 2019, the CAISO updated its economic analysis for the Proposed Project based on the study assumptions, base cases, and Commission-developed renewable generation portfolios prepared for the 2019-2020 TPP studies, due to significant changes in both state policy and electricity market conditions since the CAISO Board approval.[16] The CAISO assessed both the production cost and capacity benefits associated with the Proposed Project[17] with reliability and public policy benefits in meeting overall resource adequacy (RA) and energy needs, including additional transmission capacity to the southwest and improving interregional opportunities for diversity benefits of sharing resources.[18]

The CAISO's updated economic evaluation projected an increase in the BCR for the Proposed Project, since the 2013-2014 TPP, to range from 1.16 to 1.54 in the baseline analysis using the avoided cost of battery storage to quantify capacity benefits.[19] In the higher gas price sensitivity, the range of BCR increased from 1.48 to 1.89 using the same avoided cost of battery storage to quantify capacity benefits.[20] Using the locational renewable cost savings to calculate

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[15] *Ibid*.

[16] Exh. CAISO-03, *Opening Testimony of Neil Millar on Behalf of California Independent Systems Operator* (Millar Opening Testimony), *at* 12.

[17] *Ibid*.

[18] *Id*., at 17.

[19] Exhibit (Exh.) CAISO-01, *Testimony of Yi Zhang on Behalf of the California Independent System Operator Corporation* (Zhang Opening Testimony), at 10, Table 4.

[20] *Id*. at 11, Table 5.

capacity benefits, the CAISO projected the BCR to range from 1.00 to 1.56.[21] Overall, the CAISO concluded in each of the differing scenarios that the Proposed Project would consistently produce positive BCR, even after heavily discounting the potential capacity benefits.

All parties anticipate economic, reliability, and policy benefits to California ratepayers from the Proposed Project, although at differing levels.[22] The CAISO's updated analysis currently projects the BCR to range from 1.05 to 1.66, depending on the sensitivities and accounting for the uncertainties, discussed in detail in Sections 5.1.1 through 5.1.4. DCRT anticipates the BCR to range from 1.78 to 2.66, depending on one of the three production cost model (PCM) scenarios, discussed in detail in Section 5.2.1, below.[23] Cal Advocates anticipates a lower BCR range between 0.55 and 0.73, based on differing assumptions.[24]

1.2. Procedural Background

On October 12, 2016, DCRT filed an application for a certificate of public convenience and necessity (CPCN) to build the Proposed Project pursuant to the Rule 3.1 of Commission Rules of Practice and Procedure (Rules), and General Order (GO) 131-D (Application). Concurrent with the Application, DCRT moved to file the redacted portions of Appendixes D, J and N under seal pursuant to GO 66-D, Public Utilities (Pub. Util.) Code § 583, and Rules 11.1 and 11.4.

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[21] *Id*. at 12-13, Tables 6 and 7.

[22] Application, at 2, *citing to* Memorandum from Keith Casey, Vice President, *Market & Infrastructure Development to ISO Board of Governors* (July 8, 2014).

[23] *Opening Brief of DCR Transmission, LLC*, filed February 12, 2021, (DCRT Opening Brief) at 1, *citing to* ACC 2020 Decision.

[24] Exh. CA PA-3, *Chapter 2: Ten West Link Benefit Analysis (Witness - Pushkar Wagle, Ph.D.)* (Wagle Opening Testimony), at 2-53. *See also*, Wagle Opening Testimony at 2-52 and Cal Advocates Reply Brief, at 6.

The Center for Biological Diversity, Yuma Audubon Society, Maricopa Audubon Society (collectively referred to as Conservation Groups) jointly filed a protest on November 21, 2016. Office of Ratepayer Advocates, now Public Advocates Office (Cal Advocates) filed its protest on November 28, 2016.

A prehearing conference (PHC) was initially set for April 27, 2017. This PHC was reset to May 15, 2017, and, later, to June 2, 2017. In advance of the initial PHC, the Applicant, Cal Advocates, and Conservation Groups each filed PHC statements. On June 2, 2017, the initial PHC in this proceeding was held.

On June 20, 2017, Conservation Groups and Colorado River Indian Tribes (CRIT) moved for party status, which was granted by ruling of the assigned Administrative Law Judge (ALJ) on July 27, 2017.

On June 30, 2017, Conservation Groups and The Utility Reform Network (TURN) filed Notices of Intent to Claim Intervenor Compensation. TURN did not actively participate in this proceeding, thereafter.

The assigned Commissioner and ALJ issued a Scoping Memo and Ruling (First Scoping Memo) on August 4, 2017. The First Scoping Memo identified, amongst other things, the issues within the scope of the proceeding and set the procedural schedule. The assigned Commissioner also determined that evidentiary hearings would be more effective and efficient after the environmental review was completed.

A second PHC was held on November 4, 2019, primarily to revisit the procedural schedule in view of the issuance of the Record of Decision (ROD) to the Final Environmental Impact Statement (FEIS).

On December 16, 2019, DCRT and the CAISO served its Opening Testimony.

On December 17, 2019, the assigned Commissioner issued an Amended Scoping Memorandum and Ruling (Amended Scoping Memo) to add an additional issue to the scope of the proceeding, after the CAISO updated its economic evaluation for the Proposed Project, and to update the procedural schedule for the proceeding.

On March 31, 2020, Arizona Corporation Commission (ACC), the Arizona regulatory body that ensures safe, reliable, and affordable utility services and railroad and pipeline systems, granted a Certificate of Environmental Compatibility and authorized construction of the Arizona portion of the Proposed Project.[25]

On April 20, 2020, the assigned Commissioner issued the Second Amended Scoping Memorandum and Ruling (Second Amended Scoping Memo) to extend the procedural schedule for six weeks to allow completion of the modeling and review of the data derived from the modeling runs, as requested by Cal Advocates.

On May 13, 2020, Cal Advocates, Conservation Group, and CRIT served their Opening Testimony. On June 18, 2020, all parties served the Reply Testimony.

On July 23, 2020, the assigned ALJ held a status conference to notify the parties of the continuance of evidentiary hearings, due to the Commission's

[25] *The Decision of the Arizona Corporation Commission in the Matter of the Application of DCR Transmission, L.L.C. or its Assignees, in Conformance with the Requirements of A.R.S. § 40-360 et seq., for a Certificate of Environmental Compatibility Authorizing the 500 KV Transmission Line, Which Includes the Construction of a New 125 Mile 500 kV Transmission Line Between Arizona Public Service Company's Delaney Substation Until Southern California Edison's Colorado River Substation, to be Referred to as the Ten West Link Project,* filed March 31, 2020 (ACC 2020 Decision).

limited ability to conduct remote hearings and the Shelter-in-Place Order issued by the Governor of the State of California.

On October 27, 2020, the proceeding was reassigned to ALJ Daphne Lee. On November 20, 2020, the assigned ALJ issued a ruling setting a third PHC to be held on December 8, 2020, and ordering the parties to meet, confer, and submit a Joint PHC Statement prior to that PHC. The parties timely filed a Joint PHC Statement.

On December 2, 2020, the CRIT moved to withdraw their party status after reaching a settlement with Applicant, DCRT, outside of this proceeding.

On December 8, 2020, during the third PHC, the ALJ granted CRIT's motion to withdraw, and DCRT, CAISO and Cal Advocates advised that they were engaged in a negotiation to develop a set of stipulated facts and exhibits and anticipated conclusion of said negotiation around December 15, 2020. They advised that they expected to complete their negotiation and thereafter file a stipulation of facts and exhibits to expedite the resolution of the proceeding. The assigned ALJ ordered the parties to provide all parties on the service list a status update on the negotiation soon thereafter.

On December 17, 2020, DCRT advised the ALJ and the service list that additional time was needed to complete negotiation of stipulated facts. DCRT and Conservation Group anticipated completion by January 8, 2021.

On January 6, 2021, all parties jointly served and filed on the service list, the Parties' Stipulation of Facts and Admission of Exhibits.

On January 11, 2021, the parties moved Prepared Testimony and Exhibits into evidence. DCRT further moved to file under seal the stipulated Exhibits DCRT-2, DCRT-3, DCRT-5, DCRT-9, DCRT-11, DCRT-12, DCRT-16, and DCRT-18.

On January 21, 2021, this proceeding was reassigned to President Marybel Batjer as the assigned Commissioner. Upon the parties' request, the assigned ALJ set an interim proceeding schedule on January 25, 2021 (January 25, 2021 Ruling).

On January 29, 2021, Cal Advocates moved for oral argument pursuant to Rule 13.13. On February 2, 2021, this proceeding was reassigned to Commissioner Genevieve Shiroma.

On February 12, 2021, the parties timely filed their opening briefs. DCRT and Cal Advocates moved for oral argument within their respective opening briefs.[26] On the same day, the ALJ granted the parties' Joint Motion for Leave to Admit Exhibits into Evidence, filed on January 11, 2021 (January 11, 2021 Joint Motion) and marked, identified, and received stipulated testimony and exhibits uploaded to the Commission's e-file system, consistent with the parties' January 11, 2021 Joint Motion.

On February 16, 2021, Commissioner Shiroma issued the Third Amended Scoping Memorandum and Ruling (Third Amended Scoping Memo), clarifying the scoped issues, confirming the proceeding schedule set forth in the January 25, 2021 Ruling, and extending the statutory deadline to November 30, 2021. Concurrently, in response to a motion by Cal Advocates, the assigned ALJ marked, identified, and received additional stipulated testimony and exhibits, which were mistakenly excluded in the January 11, 2021 Joint Motion.

On March 12, 2021, the parties filed their reply briefs, and the record was closed.

[26] DCRT Opening Brief, at 53.

On March 24, 2021, the ALJ reopened the record to receive additional evidence necessary to rule on DCRT's October 12, 2016 and January 11, 2021 motions to file documents under seal. DCRT filed its compliance filing on April 5, 2021. After the ALJ issued further ruling directing DCRT to provide additional evidence, DCRT filed its Compliance Filing in Response to the ALJ Ruling on June 4, 2021.

On May 25, 2021, the ALJ granted Conservation Groups' motion, filed May 7, 2021, to withdraw their party status and opening and reply briefs.

On July 1, 2021, Cal Advocates moved to admit two additional exhibits into evidence, 1) Exhibit (Exh.) Cal PA-26, the CAISO Active Generational Interconnection Queue as of June 22, 2021 (Interconnection Queue); and 2) Exh. Cal PA-27, the CAISO Preliminary Cluster 14 Project List as of May 20, 2021 (Project List). This motion was unopposed. The ALJ granted Cal Advocates' motion, directed Cal Advocates to upload the additional evidence to the Commission e-file system and allowed parties to brief the additional evidence.

On July 20, 2021, Cal Advocates filed the additional exhibits.

On July 23, 2021, DCRT, CAISO and Cal Advocates filed additional briefs.

On July 28, 2021, the ALJ issued a ruling granting, in part, the motions of DCRT to file the documents under seal for Appendix J and Portions of Appendix N of the Application and Exhs. DCRT-2, DCRT-3, DCRT-9, DCRT-11, DCRT-12, DCRT-16, and DCRT-18 of the evidentiary record and denying the motions for Appendix D, a portion of Appendix N and DCRT-5. This ruling also directed DCRT to file unredacted Appendix D, a portion of Appendix N and DCRT-5. On August 20, 2021, DCRT, in response to the ALJ ruling, filed the unredacted Appendix D, a portion of Appendix N and DCRT-5.

On August 24, 2021, the ALJ resolved outstanding evidentiary issues by identifying, marking and admitting CAL PA-26 and CAL PA-27 and determined that no further information or evidence was needed to adequately inform and evaluate the issues in this proceeding. Consequently, the ALJ closed the record, and the matter was submitted.

2. Issues Before the Commission

Pursuant to the assigned Commissioner's Third Amended Scoping Memo, the issues to be determined are:

1. Whether the Application meets the requirements of GO 131-D, Section IX(A)(1) and Rule 3.1 to obtain a CPCN;
2. Whether the Proposed Project serves a present or future convenience and need and meets the requirements of Pub. Util. Code §1001 *et seq.*;
3. What are the economic and other benefits of the Proposed Project?
4. Is there substantial evidence that the Proposed Project will have any significant impact on the environment? If there is substantial evidence of significant impact(s):
    a. What are the significant environmental impacts of the Proposed Project within the Commission's jurisdiction?
    b. Are there mitigation measures that will eliminate or lessen such impacts?
    c. Are the mitigation measures and/or alternatives infeasible for economic, social, legal, technological, or other considerations, including community values?
    d. What is the environmentally superior project alternative?
    e. To the extent that the Proposed Project or project alternatives result in significant and unavoidable

impacts, are there overriding considerations that warrant Commission approval?

5. Whether the Proposed Project is necessary for compliance or to facilitate compliance with the Renewables Portfolio Standard (RPS)?
6. What is the maximum prudent and reasonable cost for the Proposed Project and environmentally superior alternative, if approved?
7. Whether the Commission should grant DCRT exemptions from certain affiliate transaction rules and reporting requirements?
8. Whether the FEIS complies with California Environmental Quality Act (CEQA); did the Commission review and consider it; and does it reflect the Commission's independent judgment and analysis?
9. Whether DCRT should provide a guarantee of payments for intervenors' consultants and the costs of intervenor compensation?
10. Whether the application raises any safety concerns or considerations?
11. Is the Proposed Project and/or environmentally superior project alternative designed in compliance with the Commission's policies governing the mitigation of electromagnetic field (EMF) effects using low-cost and no-cost measures?

3. General Order 131-D, Section IX(A)(1) And Rule 3.1.

Applications for the construction of a 500 kV transmission line must meet the filing requirements of Rule 3.1 as well as GO 131-D.

Here, the record reflects that the Applicant filed, as part of the Application, the filings as required under Rule 3.1 and GO 131-D. The Application and subsequent filings comply with the requirements under Rule 3.1 and GO 131-D as summarized below:

CRITERIA	DCRT SUBMISSION
GO 131-D(IX)(1)(a) and Rule 3.1(a)	Appendix A of the Application provides a detailed description of the proposed transmission facilities and equipment for the Proposed Project, and Appendix B to the Application provides a preliminary schedule.
GO 131-D(IX)(1)(b) and Rule 3.1(c)	Appendix C of the Application provides a scaled map of the original Submitted Route, showing parks, recreation areas and scenic areas, and existing transmission lines existing within a mile of the proposed route. Exh. DCRT-65 provides an updated map showing the Proposed Route as adopted from the Preferred Alternative of the FEIS.[27]
GO 131-D(IX)(1)(c) and Rule 3.1(e)	Proposed Project was selected by the CAISO as a primarily economically-efficient project that also provides significant reliability and policy benefit, thereby supporting a finding that public convenience and necessity require the construction and operation of the proposed transmission facilities.[28]
GO 131-D(IX)(1)(d) and Rule 3.1(f)	Appendix D and page 45 of Appendix N of the Application and Exh. DCRT-5 provide the Project Cost Estimate.
GO 131-D(IX)(1)(e)	DCRT initially selected the route described in the Application because it utilized the BLM designated utility corridors and largely followed the existing DPV transmission line to minimize the Proposed Project's environmental and visual impacts. Appendix E of the Application showed alternatives that were under consideration at the time the Application was submitted with a table summarizing the advantages and disadvantages of each alternative. DCRT's current Proposed Route for the Proposed Project is the BLM's Preferred Alternative as identified in the FEIS and BLM's ROD.
GO 131-D(IX)(1)(f)	Appendix B of the Application provides the preliminary construction schedule and the ROW acquisition activities. Exh. DCRT-4 and the Testimony of Lowell Rogers provide updated ROW acquisition activities.

[27] Exh. DCRT-65 at 22.

[28] Application, at 2.

GO 131-D(IX)(1)(g)	Appendix L of the Application provides the list of governmental agencies consulted and the results of those consultations.
GO 131-D(IX)(1)(h)	FEIS with collaboration with the Commission was issued on September 12, 2019.
Rule 3.1(b)	The Proposed Project will be operated as part of the CAISO-controlled transmission system and will not compete with any other utilities, corporations, person, or entities. While a portion of the Proposed Project will be located geographically within SCE's service area, neither SCE nor any other utility, corporation, or person will compete with the Proposed Project. The Proposed Project will not provide service within specific city or county, except as part of the CAISO-controlled transmission system.
Rule 3.1(d)	Appendix H of the Application identifies the permits the Proposed Project may require from federal, state, and local agencies for construction and operation of the Proposed Project.
Rule 3.1 (g)	DCRT relies on the financial resources of its controlling member, Starwood Energy, which manages total equity commitments in excess of $2 billion. Starwood Energy has executed transactions totaling more than $4 billion in enterprise value. Exhs. DCRT-1, DCRT-2 (Financial Ability and Financing Structure), and DCRT-3 (Financial Statement) detail financial information, ability, and structure of DCRT.
Rule 3.1(h)	DCRT did not prepare a rate schedule because cost recovery plus a reasonable rate of return will occur through the CAISO Transmission Access Charge (TAC), subject to Federal Energy Regulatory Commission (FERC) review and approval.

Rule 3.1(i) required DCRT to submit a statement corresponding to the statement required by Section 2 of GO 104-A. As discussed in detail under Sections 8.2 and 8.3 of this decision, the Commission allowed DCRT to file the FERC Forms 1 and 3-Q as proxies in compliance with GO 104-A and Rule 3.1(i). Since the Proposed Project is not currently in operation, DCRT has not filed a

FERC Form 1 or Form 3-Q. Hence, the Commission will excuse the requirement under Rule 3.1(i).[29]

4. General Background on the Commission's Integrated Resource Planning (IRP) Process and the CAISO's Transmission Planning Process

To determine whether the Proposed Project is necessary, we must first understand the assumptions used in the parties' PCM scenarios. For the Proposed Project, the crux of the parties' dispute are the portfolios from the 2017 integrated resource planning (IRP) process and the 2019 IRP process and the sources of the assumptions used in the PCM scenarios.

In 2015, the California Legislature, through Senate Bill (SB) 350, set the goal to reduce greenhouse gas (GHG) emissions by 40% of 1990 levels by 2030 and directed the Commission to develop an IRP process to ensure that California's electric sector meets its GHG reduction goals, while maintaining reliability at the lowest possible costs. In 2018, the California Legislature passed SB 100, which required 60 percent of electric retail sales be served by renewable resources by the year 2030 and zero-carbon resources to supply 100 percent of electric retail sales to end-use customers by 2045.

The Commission's ongoing IRP process provides guidance to Load Serving Entities (LSEs), developers of generating resources and other entities on the optimal path for the state to achieve these state goals, at the least cost to California retail ratepayers, while maintaining reliability. The IRP process provides the analytical foundation for Commission orders for LSEs to procure renewable and other diverse electricity resources. The IRP process also produces

[29] FERC Form 1 and Form 3-Q are required forms for reporting to FERC once the Proposed Project is constructed and operational.

portfolios of future generation which the CAISO analyzes within its annual TPP to determine the implications for the transmission system.

To achieve the goals of SB 350 and SB 100, the Commission, the CAISO, and the California Energy Commission (CEC) established coordinated processes to ensure that there is a common understanding of expectations regarding the development of renewable generation portfolios feeding into the annual TPP cycle. This includes using the assumptions in the load forecast which is included and regularly updated within the CEC's Integrated Energy Policy Report (IEPR).

The recurring modeling analysis conducted throughout each IRP cycle produces a Reference System Plan (RSP) and a Preferred System Plan (PSP) that reflect the optimal set of future resource needs to meet the GHG target for the electricity sector. These plans also provide the foundation for the portfolios that the Commission transmits to the CAISO's annual TPP.

The IRP process is designed to be regularly updated to reflect changes in GHG reduction target, reliability requirements, expected resource costs, expected levels of imported electricity and other key constraints that are incorporated into the modeling.

During the 15-month TPP cycle, the CAISO identifies and assesses the transmission implications from the types and amounts of renewable generation that will be needed to meet state policy goals and future needs of the CAISO-controlled transmission grid.[30] Each TPP also assesses the economic costs and benefits of nominated transmission projects. For each TPP cycle, the CAISO's analysis assumes that transmission projects that have been approved in

[30] Millar Opening Testimony, at 2.

previous TPPs will be developed, thus signaling to generation developers the areas where potential transmission access will be available.

The Commission adopted the PSP for the 2017-2018 IRP process on May 1, 2019.[31] On April 6, 2020, the Commission adopted 2019-2020 RSP to be used by all LSEs required to file individual integrated resource plans in 2020.[32] On February 11, 2021, in Decision (D.) 21-02-008, the Commission approved a set of portfolios for analysis in the 2021-2022 TPP. This aligns with the 2019-2020 RSP and the direction given to the LSEs for planning in D.20-03-028. On August 17, 2021, the Commission, in the IRP proceeding, sought comment on the proposed 2019-2020 PSP.[33]

5. Project Need

The Commission is charged with ensuring that public utilities furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.[34] Pursuant to Pub. Util. Code § 1001, a utility intending to construct or extend transmission line facilities, designed for immediate or eventual operation at 200 kV or more, must first obtain a CPCN from the Commission.[35] The CPCN is issued upon the

[31] D.19-04-040.

[32] D.20-03-028.

[33] ALJ's Ruling Seeking Comments on Proposed Preferred System Plan filed August 17, 2021, in R.20-05-003.

[34] *Utility Consumers' Action Network v. Public Utilities Com.* (2010) 187 Cal.App.4th 688, 689 *citing to* Pub. Util. Code § 451.

[35] Pub. Util. Code, § 1001. *See also* General Order (GO) 131-D at 1.

Commission finding that "the present or future public convenience and necessity require or will require such construction."[36]

At issue in this proceeding is a determination by the CAISO on the cost-effectiveness and need for the Proposed Project, a transmission project. In Decision (D.) 06-11-018, the Commission examined "what deference should be given to determinations by the CAISO regarding the cost-effectiveness and need for a transmission project that is proposed for its economic benefits."[37]

D.06-11-018 sets forth general principles, minimum requirements, and other guidance for economic evaluations of proposed transmission projects subject to CPCN proceedings. Specifically, D.06-11-018 established a rebuttable presumption in favor of a CAISO Board-approved economic evaluation, provided the economic evaluation meets certain safeguards to protect the public interest and meets the Commission's statutory mandates. These safeguards require 1) the CAISO process has met the public participation requirements outlined in D.06-11-018; 2) the evaluation must be submitted to the Commission within sufficient time to be included in the scope of the proceeding; 3) to the extent that material facts relied upon in the CAISO Board-approved economic evaluation become outdated, the applicant shall submit additional information and shall provide an explanation of the additional information's impact on the assumptions and conclusions contained in the evaluation; and 4) the CAISO shall be a party to any proceeding in which a rebuttable presumption is to be granted to a CAISO Board-approved economic evaluation.[38]

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[36] Pub. Util. Code, § 1001.

[37] D.06-11-018, at 2.

[38] *Id.*, at 23-25.

To meet the requirements under the first safeguard, the CAISO must sponsor at least two meetings open to the public with opportunity for public comment both at the meeting and following the meeting, including: (1) an initial meeting, which occurs sufficiently early in the CAISO's assessment process to provide an opportunity to discuss the scope of the proposed economic assessment, including identification of the base case and other relevant assumptions, as well as resource alternatives and (2) a second meeting to take public comment on the draft economic evaluation prior to its submission to the CAISO Board.[39] The CAISO process must provide interested parties with sufficient time and opportunity, including sufficient access to information, to adequately review and comment on the draft economic evaluation, and the final economic evaluation must address all public comments, either through incorporation in full, modification, or rejection, and the reasons therefore.[40]

The CAISO's economic evaluation further must meet the additional safeguards by ensuring that: (1) the CAISO Board has made certain explicit findings regarding the economic value of the Proposed Project; (2) the CAISO Board-approved evaluation is consistent with the principles and minimum requirements set forth in D.06-11-018; and (3) the CAISO Board-approved evaluation is submitted to the Commission within sufficient time to be included within the scope of the proceeding.[41]

To overcome this presumption, the party opposing the Proposed Project bears the burden of demonstrating either (1) that the CAISO Board-approved

[39] *Id.*, at 23.

[40] *Id.*, at 24.

[41] *Id.*, at 3 and 23-25.

economic evaluation does not comply with the principles and minimum requirements of D.06-11-018 or (2) that the project is not cost-effective.[42]

The principles and minimum requirements for the CAISO's economic evaluations shall evaluate the following:

1. The CAISO's standardized benefit-cost methodology, used to measure the economic benefits of proposed transmission projects;[43]
2. The CAISO's framework for the computation of potential energy benefits;[44]
3. Other economic effects of a transmission project, including economic effects that may not be quantifiable;
4. Uncertainty about future system and market conditions, affecting the likelihood that a transmission project's forecasted benefits will be realized;
5. Baseline resource plans and assumptions about the system outside the applicant's service territory that are consistent with resource plans and system assumptions used in procurement or other recent Commission proceedings, updated as appropriate; and
6. Feasible resource alternatives to the proposed transmission project.[45]

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[42] *Ibid*.

[43] The perspective of CAISO ratepayers is of primary importance in a CPCN proceeding, although there is value in reviewing benefit-cost results from other perspectives as well. *See*. D.06-11-018, at 4.

[44] Parties shall assess energy benefits using established, credible, and commercially available production cost modeling tools. The applicant may decide whether to include market power mitigation benefits as part of its demonstration of need for a proposed transmission project. *Ibid.*

[45] *Ibid.*

5.1. Public Participation in the 2013-2014 TPP

The 2013-2014 TPP is a result of an extensive collaboration by the Commission and many other interested stakeholders.[46] During Phase 1 of the TPP, the CAISO posted the unified planning assumptions and study plan in draft form for stakeholder review and comment, during which stakeholders may request specific economic planning studies to assess the potential economic benefits (e.g., congestion relief) in specific areas of the grid.[47] A list of high priority studies among these requests (*i.e.*, those which the engineers expect may provide the greatest benefits) are identified and included in the study plan, when the CAISO published the final unified planning assumptions and study plan at the end of phase 1. The list of high priority studies may be modified later based on new information such as revised generation development assumptions and preliminary production cost simulation results.[48]

The conceptual statewide plan takes a whole-state perspective to identify potential upgrades or additions needed to meet state and federal policy requirements or directives such as renewable energy targets. Whenever possible, the CAISO coordinated with regional planning groups and neighboring balancing authorities.[49] To focus on developing compliance filings addressing FERC Order 1000 requirements, the CAISO updated the previous TPP using

[46] 2013-2014 TPP, at 3.

[47] *Id.,* at 18.

[48] *Ibid.*

[49] *Ibid*.

updated and publicly available information from our neighboring planning entities.[50]

In phase 2 of the TPP, a 12-month process, the CAISO performs all necessary technical studies, conducts a series of stakeholder meetings and develops an annual comprehensive transmission plan for the CAISO controlled grid.[51] The proposed resource portfolios, developed with by Commission with input from the CEC and the CAISO, were also reviewed with stakeholders to seek their comments, which are then considered for incorporation into the final portfolios. Stakeholder meetings and public comment opportunities occurred at key points during Phase 2 of the 2013-2014 TPP.[52]

5.2. The CAISO's Economic Evaluation of the Proposed Project

Separate from the coordinated interaction with the Commission during the TPP cycle, the CAISO assesses economic benefits of proposed transmission projects by simulating production costs.[53] When determining whether a particular solution is needed, the CAISO must consider comparative costs and

[50] The previous TPP involved California planning authorities and load serving transmission providers under the structure of the California Transmission Planning Group. *Ibid*.

[51] *Id*., at 19.

[52] *Id*., at 20. *See also* CAISO Tariff §24.3.3, requiring the CAISO to conduct a stakeholder meeting to discuss its Unified Planning Assumptions and Study Plan; CAISO Tariff §24.4.9(a), requiring the CAISO to hold a stakeholder meeting after posting technical study results; CAISO Tariff §24.4.9(b), requiring the CAISO to schedule at least one (1) other public meeting before the draft comprehensive Transmission Plan is posted to provide information about any policy-driven transmission solution evaluations or economic planning studies; CAISO Tariff §24.4.9(c), requiring the CAISO to conduct a public conference regarding the draft transmission plan.

[53] Spending over 8,760 hours in a study year, the CAISO considers unit commitment, generator dispatch, locational marginal prices, and transmission line flows.

benefits[54] of viable alternatives to the particular transmission solution including: 1) other potential transmission solutions, including those being considered or proposed during the TPP; 2) acceleration or expansion of any transmission solution already approved by the CAISO Governing Board or included in any TPP, and 3) non-transmission solutions, including demand-side management.[55]

The CAISO originally determined the Proposed Project's economic benefits based on (1) capacity benefits from the increased amount of out-of-state resources in the Southwest to count for RA and (2) production cost benefits from the Proposed Project's ability to reduce the CAISO net ratepayer payments.[56] The Proposed Project's economic benefit is intertwined with reliability benefits to achieve state policy needs. When evaluating the Proposed Project, the CAISO concluded that the quantified economic and reliability benefits exceeded

[54] The CAISO assesses the benefits of a proposed transmission project using five categories, production, capacity, public-policy, renewable integration and avoided cost of other projects. Production benefits are benefits to ratepayers resulting from changes in the net ratepayer payment based on production cost simulation from the proposed transmission project. Capacity benefits are benefits to ratepayers resulting from increased importing capability into the CAISO's Balancing Authority Area (BAA) or into a local capacity requirement (LCR) area. Capacity benefits analysis also includes benefits resulting from decreased transmission losses and increased generator deliverability. Public-policy benefit is the benefit to ratepayers through reduction of the cost of reaching renewable energy targets by facilitating the integration of lower cost renewable resources located in remote areas, or by avoiding overbuild. Renewable integration benefit is the interregional transmission upgrades, allowing sharing energy and ancillary services among multiple BAAs, which help mitigate integration challenges, such as over-supply and curtailment. Avoided cost of other projects is the avoidance of a reliability or policy project because of the economic project under study. The avoided cost contributes to the benefit of the economic project. *See* Exhibit Ca PA-2, *Public Advocates Office Opening Testimony of Jerry Melcher, Transmission Planning Process, and the Application of the Transmission Economic Assessment Methodology* (Melcher Opening Testimony), at 2.

[55] Exhibit CAISO-6, Millar Rebuttal Testimony, at 2, *citing to* CAISO tariff, Section 24.4.6.7 Economic Studies and Mitigation Solutions.

[56] Yimer Corrected Rebuttal Testimony, at 4-5.

estimated costs.[57] The 2013-2014 TPP analyzed sensitivities, with varying load, hydrological conditions, and natural gas costs.[58] These results showed economic benefits under various assumptions and uncertainties. The CAISO also found the following additional potential benefits:

1. Mitigation of the impacts of higher contingency flows on neighboring systems;[59]
2. Opportunities for CAISO-connected renewable generation to develop in the Delaney area;
3. Increase in deliverability from the Imperial Valley zone; and
4. Increase competition in the California generation market.[60]

By comparing the 2018 and 2023 the production cost benefit for the Proposed Project, the CAISO found three benefits to CAISO ratepayer: 1) consumer energy cost decreases; 2) increased LSE-owned generation revenues; and 3) increased transmission congestion revenues.[61] Based on these findings, the CAISO Board approved the Proposed Project in its 2013-2014 TPP.

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[57] *Id*. at 9.

[58] 2013-2014 TPP, at 253-265.

[59] Los Angeles Department of Water and Power's Marketplace, Adelanto 500 kV line in particular, caused higher contingency flows on neighboring systems as a result of the development of renewable generation in southeastern California and the retirement of gas generation in southwestern California

[60] *Ibid.*

[61] 2013-2014 TPP, at 253-268.

5.2.1. In 2019, the CAISO found a continuing necessity for the Proposed Project after updating its economic evaluation, based on study assumptions, base cases, and the Commission-developed renewable generation portfolios prepared for the 2019-2020 TPP studies.[62] The CAISO's Framework for the Computation of Potential Energy Benefits

Based on the CAISO's Transmission Economic Analysis Methodology (TEAM), the CAISO ran two different PCM scenarios in 2019: 1) Baseline Scenario and 2) Sensitivity Scenario with updated natural gas and carbon prices.[63] The baseline scenario shows a total of $33.6 million in production cost benefits annually.[64] The sensitivity analysis, using higher natural gas prices in California compared to decreased natural gas prices in other states, increased production cost benefits to $46.6 million annually.[65]

Taking the production cost benefit and capacity benefits from the avoided capacity costs for battery storage and the locational renewable capacity cost savings, the CAISO calculated the BCR to range from 1.16 to 1.54.[66]

The CAISO approached the updated economic assessment in three steps: 1) resource portfolios are developed based on Commission's RESOLVE;[67] 2) the resource portfolios are then used to conduct production cost simulation and

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[62] Millar Opening Testimony, at 4 and 12.

[63] Yimer Opening Testimony, at 3-4.

[64] Yimer Corrected Rebuttal Testimony at 6. *See also*, Exh. CAISO-2, *Opening Testimony of Neibyu Yimer on Behalf of the California Independent Systems Operator* (Yimer Opening Testimony), at 16.

[65] Zhang Opening Testimony, at 4-7.

[66] *Id*., at 8-10.

[67] Yimer Opening Testimony, *supra*, at 3. The RESOLVE model is the final model developed in the Commission's 2017-2018 IRP process, which was used to inform the CAISO's 2019-2020 TPP.

production benefit analysis, while the 2019-2020 Transmission Plan economic planning PCM with the Updated Resource Portfolio is used to conduct the production cost simulation;[68] and 3) using the results of the first two steps, the BCR for the Proposed Project was calculated based on the estimated 2021 in-service date of the Proposed Project.[69]

The CAISO's updated analysis considered the following specific major changes in circumstances that have occurred since the CAISO initially approved the Proposed Project:

1. Continued growth of the grid-connected solar in excess of the level anticipated in the 2013 timeframe;
2. Rapid deployment of distributed energy resources far exceeding industry expectations, *e.g.,* rooftop solar PV;
3. Decreasing battery storage costs;
4. Actual and forecast reductions in the out-of-state thermal fleet, including out-of-state coal resources;
5. LSE requirements under SB 100 to acquire 60% of their energy from renewable resources by 2030 and 100% of energy from non-GHG-emitting generation by 2045;
6. Broader acceptance that natural gas resources will be critical to ensure reliability well into the future—with those resources providing a key source of dispatchable capacity but far less overall energy production; and
7. Advancement of generation and transmission planning and development processes.[70]

[68] The key assumptions of the 2019-2020 economic planning PCM are described in Appendix I to the Zhang Opening Testimony.

[69] Zhang Opening Testimony, at 3.

[70] Over the last five years, there were significant generation development activity in the western Arizona area and generation projects seeking direct connection to the CAISO-controlled grid through points of interconnection located in Arizona. Millar Opening Testimony, at 15-16.

5.2.2. The CAISO's Analysis of Arizona Solar and Battery Capacity Savings

Part of the CAISO's determination of the Proposed Project's capacity benefits is based upon the solar generation from Arizona using assumptions derived from the 2017-2018 PSP.[71] The public-policy benefits of the Proposed Project arose from the increase of the amount of lower cost, out-of-state resources in the Southwest, including the CAISO grid-connected solar and solar-storage hybrid resources in western Arizona (Arizona Solar), that counts towards meeting RA goals.[72]

Using the latest version of RESOLVE, the CAISO determined the amount of solar from Arizona inside the CAISO Balancing Authority Area (BAA), that can be economically selected to achieve emissions and RA targets and removed the transmission cost adder for delivery to the California boarder associated with the Arizona Solar resource.[73] After enabling Arizona Solar as a candidate resource in RESOLVE, the CAISO calculated that 3262 MW of Arizona Solar from the Proposed Project can be economically selected to meet the RA target.[74]

By modeling the resource shift from enabling Arizona Solar as a candidate resource in RESOLVE and using the deliverability power flow model developed

[71] CAISO compared the data from the 2017 IRP portfolio and 2019 IRP portfolio with the data from the 2018 National Renewable Energy Labs (NREL) Annual Technology Baseline (ATB) and the 2020 Energy Information Administration (EIA) reports and concluded that the 2019 IRP reported capital cost and levelized costs of energy for PV between California and Arizona did not align with findings from the NREL ATB or the EIA report. As such, the 2017 IRP portfolio assumption more closely aligned with those reports. Yimer Corrected Rebuttal Testimony, at 7-11.

[72] *Ibid*., at 10-11.

[73] The Commission made the same corrections to the RESOLVE model used in the 2019-2020 IRP. *See,* Yimer Corrected Rebuttal Testimony, at 3.

[74] Yimer Opening Testimony, at 15-16.

for its 2019-2020 TPP to perform a deliverability assessment, the CAISO estimated the incremental amount of economically-selected Arizona Solar capacity that can count for RA.[75] Because the objective of the deliverability assessment is to determine the amount of Arizona Solar capacity that can count for RA, all of the Arizona Solar resources were modeled as seeking full capacity deliverability status (FCDS).[76]

In the deliverability power flow case with the Proposed Project, Arizona Solar was distributed among Delaney (60%), Hassayampa (20%) and Hoodoo Wash (20%) substations approximately in the same proportion as resources in the CAISO Generation Interconnection Queue.

The CAISO compared the generation at the substations when the economically-selected Arizona Solar was allocated to Delaney, Hassayampa, and Hoodoo Wash substations against generation at only Hassayampa and Hoodoo Wash substations, with the Delaney substation's share of Arizona Solar allocated to Hassayampa and Hoodoo Wash substations.[77] The constraint limits the amount of economically-selected Arizona Solar that can count for RA to about 2,149 MW with the Proposed Project. Without the Proposed Project, same constraint limits Arizona Solar deliverability to 1,180 MW.[78]

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[75] *Id.*, at 11.

[76] *Ibid*.

[77] Delaney substation will be outside the CAISO BAA without the Proposed Project. *Ibid.*

[78] Without the Proposed Project, the most limiting contingency is an outage of the Ocotillo–Suncrest 500 kV line, which overloads the Eco-Miguel 500 kV line.

Applying the effective load carrying capability (ELCC) methodology, adopted by the Commission, to determine the RA value for solar resources,[79] the Proposed Project provides an increase of 969 MW in deliverable Arizona Solar capacity, which is equivalent to a net qualifying capacity (NQC) of 136 MW,[80] to count towards RA capacity that would otherwise need to be procured from other resources.[81] Based on the same assumptions, the equivalent of 969 MW in deliverable solar capacity, or 29.7 percent of the economically-selected Arizona Solar capacity, will have to come from renewables located in less economic locations subject to deliverability constraints, if the Proposed Project is not built. This resource shift will result in resource cost saving of $977 million in present value of revenue requirements or $58 million in terms of annual levelized cost, both in 2016 dollars.[82]

In evaluating the battery capacity savings, the CAISO interpolated cost projections for a lithium-ion battery energy storage system (BESS) for year 2022 and calculated the levelized cost of 136 MW of BESS $36.3 million per year for the capacity benefit based on the avoided cost of energy storage.[83] The CAISO

[79] Yimer Opening Testimony at 13. This means that for every MW of installed and deliverable solar capacity, the Commission applies a discount to determine the solar resource's actual contribution to meeting load requirements.

[80] The CAISO calculated the NQC based on the ELCC values for solar adopted in 2019. *Id.* at 13-14, *citing to* D.19-06-026.

[81] *Id.*, at 11-13.

[82] For the purposes of modeling in RESOLVE, resources located in Southern Nevada are assumed to interconnect directly to the existing CAISO transmission system. This assumption has been updated from the Commission's solar resources in southern California and southern Nevada in the same year and wind resources in the Southwest in 2030. Yimer Opening Testimony, at 6-9.

[83] *Id.,* at 14.

calculated the capacity benefit to be $290.3 million in terms of present value or $17.3 million in terms of levelized annual benefits.[84]

5.2.3. The CAISO's Natural Gas Price Analysis

The CAISO used the 2018 IEPR natural gas price forecast for its baseline PCM scenario and the 2019 preliminary IEPR natural gas price forecast for its a sensitivity PCM scenario. The CAISO's baseline PCM monthly natural gas price differential between Arizona South and Southern California is between $0.581 to 0.597, similar to the lower end of the price differential referenced by Cal Advocates.[85] The sensitivity PCM scenario applied a relatively large natural gas price differential between Arizona and Southern California, consistent with the 2019 IEPR natural gas forecast, to represent the upper bound for natural gas price differentials between Southern California and Arizona. Together, the CAISO's baseline and sensitivity PCM scenarios covered a wide and reasonable range of natural gas price differentials between Arizona and Southern California.

5.2.4. The CAISO's Consideration of Uncertainties

The CAISO considered multiple uncertainties in its economic evaluation. Recognizing that the capacity value of solar resources will likely continue to decline in the future as more solar resources are added and post-sunset energy needs become more predominant, the CAISO calculated reduction of capacity for Arizona Solar and natural gas benefits based on one-third, one-half, and two-thirds of the capacity benefit values to account for this uncertainty.[86]

The CAISO also considered the uncertainty in the costs of utility-scale battery cost and found the estimated cost of a 4-hour lithium-ion utility-scale

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[84] *Id.,* at 14-15.

[85] Arizona South Hub represents the Arizona Phoenix natural gas hub.

[86] Yimer Opening Testimony, at 15.

battery system cost varies significantly from about a low of $1,100/kW to a high of $2,250/kW in 2018 dollars, based on the review of a study by the Western Electric Coordinating Council (WECC).[87]

The CAISO used $1661/kW in its analysis to represent approximately the midpoint of the range.[88] Similarly, the CAISO considered the significant uncertainty regarding the future rate of decline in battery storage costs with one report finding that year-over-year cost declines were less pronounced, particularly for wholesale systems.[89]

Due to the uncertainties associated with the actual cost of battery storage, the CAISO assessed the Proposed Project's BCR with the battery storage costs based upon the 2019 IRP portfolios as an additional data point by establishing a baseline calculation on the avoided cost of battery storage with the storage cost assumption from the 2019 IRP portfolios. The evaluation resulted in a BCR between 1.05 to 1.31, with capacity benefits discounted by two-thirds, one-half, and one-third to adjust for the solar resource uncertainty. When the 2019 IEPR Preliminary Forecast is included in the baseline model, the BCR increased and was between 1.38 to 1.66.[90]

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[87] WECC promotes Bulk Electric System (BES) reliability for the entire Western Interconnection system from Canada to Mexico and includes the provinces of Alberta and British Columbia, the northern portion of Baja California, Mexico, and all or portions of the 14 Western states.

[88] Yimer Corrected Rebuttal Testimony, at 19.

[89] *Id., at* 18-21.

[90] Exh. CAISO-4, Zhang Rebuttal Testimony, at 7-9. The CEC prepares the IEPR, which provides a cohesive approach to identifying and solving the state's pressing energy needs and issues.

5.2.5. Rebuttable Presumption Exists in Favor of CAISO Board-Approved Economic Evaluation

The Commission reviews each application for a CPCN on a case-by-case basis due to the unique character of each proceeding. Here, we find that the CAISO Board-approved economic evaluation meets the safeguards set forth in D.06-11-018 to protect the public interest and meets the Commission's statutory mandates.

First, to meet the public participation requirement, the CAISO engaged the public and other stakeholders throughout the TPP process. In Phase 1, the CAISO posted the unified planning assumptions and study plan in draft form for stakeholder review and comment and an opportunity for stakeholders to request specific economic planning studies to assess the potential economic benefits in specific areas of the grid. In Phase 2, the CAISO held a series of meetings to engage the stakeholders and public in comments on the TPP and the solutions, including the Proposed Project. The stakeholders and public also participated in the development of the proposed resource portfolios along with the Commission, CEC and the CAISO. The final TPP addressed the public comments and concerns.

Upon careful examination of the record, including the parties' comments, the Commission finds the safeguards under D.06-11-018 were met here. First, sufficient opportunities for public participation were afforded such that the economic evaluation of the Proposed Project met the requirements of the first safeguard. Second, the economic evaluation was submitted as part of the Application, in Appendix M and within sufficient time to be included in the scope of this proceeding. Third, DCRT and the CAISO submitted additional economic and public policy analysis and provided an explanation of the

additional information's impact on the assumptions and conclusions contained in the economic evaluation in the 2013-2014 TPP. Finally, the CAISO is a party to this proceeding.

Further, we find that consistent with D.06-11-018: (1) the CAISO Board has made explicit findings regarding the economic value of the Proposed Project; (2) the CAISO Board-approved evaluation is consistent with the principles and minimum requirements set forth in D.06-11-018; and (3) the CAISO Board-approved evaluation has been submitted to the Commission within sufficient time for its inclusion within the scope of the proceeding.

First, the CAISO Board found explicit findings of quantifiable capacity and production cost benefits with reliability benefits from the Proposed Project in the baseline and sensitivity scenarios to conclude that the Proposed Project provides economic and public policy benefits. In the CAISO's updated economic evaluation, the CAISO further found benefits derived from Arizona Solar and potential battery capacity in expanding the CAISO BAA in this Proposed Project and calculated the production cost savings of $33.6 million.

Second, the CAISO Board-approved evaluation is consistent with the principles and minimum requirements set forth in D.06-11-018. The CAISO's economic evaluation for the Proposed Project applied CAISO's standardized benefit-cost methodology, TEAM, to measure the economic benefits of the Proposed Project. The framework of this economic evaluation computed the potential energy benefits and other economic effects of Proposed Project. Using the PSP derived from the Commission's 2017 IRP process, the CAISO applied this baseline resource plans and assumptions about the system outside the DCRT's service territory that are consistent with resource plans and system assumptions used in procurement and the TPP cycles for 2019-2020 and the

2020-2021.[91] Moreover, the CAISO considered the uncertainties of future systems in solar generation, in natural gas pricing and the utility-size battery costs, along with market conditions affecting the likelihood that a transmission project's forecasted benefits to be realized. Finally, the CAISO considered alternative interconnection projects and the Palo Verde intertie when determining the economic benefits of the Proposed Project.

Third, the CAISO Board-approved evaluation presented to the Commission as part of the evidence for this proceeding.

Upon review of the foregoing, the Commission finds that the CAISO's original and updated economic evaluation comply with the principles and minimum requirements under D.06-11-018 and should be presumed reliable in determining the necessity of the Proposed Project. Thus, a rebuttable presumption in favor of the CAISO Board-approved economic evaluation exists here.

5.3. DCRT's Economic Evaluation

In addition to the rebuttable presumption in favor of the CAISO Board-approved economic evaluation which supports the need for the Proposed Project, DCRT additionally argues that the Proposed Project is needed to reduce overall costs to the CAISO ratepayers and increase system reliability while providing some renewable source of energy to meet the State's policy goals.[92] DCRT concluded that the economic benefits includes: 1) reduced production costs and CAISO customer net payments; 2) reduced energy losses; 3) increased competition at the Palo Verde trading hub; 4) increased transmission transfer

[91] *See* D.20-03-028 and D.21-02-008.

[92] Millar Opening Testimony, at 2.

capability between CAISO and APS in the Western Energy Imbalance Market (EIM); and 5) reduced RA costs.[93]

DCRT estimates the Proposed Project will reduce ratepayer costs by $1-1.6 billion over a 50-year economic life with the present value of the revenue requirement of $607 million with an after-tax weighted average cost of capital of 6.8%; Federal income tax of 21%; California income tax 8.84%; a tax depreciated based on a 15 year Modified Accelerated Cost Recovery System (MACRS) schedule; and a straight-line book depreciation over 40 years.[94]

DCRT and the ACC concluded that the Proposed Project presented no negative impact to the reliability or safety to the Arizona transmission infrastructure or to the delivery of power to Arizona ratepayers.[95] In granting authorization to construct the Proposed Project, ACC reviewed DCRT's economic evaluation and found that the Proposed Project would result in stronger transmission infrastructure while reducing congestion in Arizona.[96]

5.3.1. DCRT's Analysis of the Economic Benefit of the Proposed Project

If the CAISO did not complete an economic evaluation, D.06-11-018 required the applicant in a CPCN proceeding to use baseline resource plan and assumptions about the system outside its service territory that are consistent with its resource plan and system assumptions used in procurement or other recent Commission proceedings.[97] In its showing, the applicant should identify

[93] Exh. DCRT-1, Chapter IV, Chang Opening Testimony, at IV-2-IV-3.

[94] *Id.*, at IV-37. The assumptions do not include economic, policy, and reliability benefits to CAISO customers.

[95] ACC Decision, at 4.

[96] Exh. Cal PA-24, Little Testimony, at 13-14.

[97] D.06-11-018, at 69.

clearly and explain any changes to its baseline resource plan or to prior assumptions about transmission and generation resources in other parts of the study area.[98] The applicant should also specify the criteria it used to determine the inclusion, exclusion, and retirements of generation, transmission, and other resources, and also the sources and justification for its assumptions about the system outside its service area.[99]

Based on a combination of information from the Brattle Ten West Link Technical Report (Brattle Report)[100] and three different PCM scenarios, DCRT projected 1) annual savings between $7 million to $36 million; 2) reduction in curtailment of renewable generation by increasing operational flexibility of the CAISO system; 3) more options to integrate and access to renewable energy resources to achieve the goals to reduce GHG;[101] and 4) increased reliability of the California and Arizona transmission network by increasing reliable power transfers in the region.[102]

DCRT's PCM scenarios did not analyze the impact on renewable generation interconnection but accounted for transmission congestion due to

[98] *Id.,* at 70.

[99] *Ibid*.

[100] *See* Exh. DCRT-13, *Appendix L- Brattle Ten West Link Technical Report*.

[101] 4150 MW of solar and storage capacity projects are in the CAISO interconnection queue to connect the Proposed Project and 900 MW of solar and storage capacity projects are in the APS interconnection queue to connect to Delaney Substation. Chang Opening Testimony at IV-31. As of June 2021, the CAISO Interconnection Queue Report reflects 9400 MW of renewable resources seeking to interconnect to the Proposed Project. *Amended Brief of DCR Transmission L.L.C. Addressing Exhibits Cal PA-26 and Cal PA-27*, filed July 30, 2021 (DCRT Additional Brief), at 2.

[102] Chang Opening Testimony, at IV-3-IV-4.

intertie scheduling limits on the CAISO's neighboring markets and additional congestion due to the Palo Verde intertie during peak and overnight hours.[103]

DCRT modeled three scenarios, Scenarios A, B and C, with varying assumptions. In Scenario A, DCRT applied the resource portfolios used in the 2018-2019 TPP and progressively added layers of assumptions in Scenarios B and C to model potential costs and savings associated with the Proposed Project. In Scenario B, DCRT added updated generation resource mix and calculated an increase in all base categories, with notable increases for battery capacity (143%), geothermal capacity (56%), solar (12%), wind (7%) and less than 1 percent of other generation.[104] In Scenario C, DCRT added to Scenario B the natural gas price forecasts, summarized by the CEC as a 12.8% decrease by 2028.[105]

DCRT's assumptions were taken from the most up-to-date information available from the Commission, CEC and the CARB at the time of calculation. DCRT found savings for California ratepayers were $7 million per year under Scenario A, $19 million per year under Scenario B, and $36 million per year under Scenario C.

Based on the Brattle Report and the three PCM scenarios, DCRT concluded that the Proposed Project will provide an estimated range of savings of $62-93 million per year and broken down into 1) CAISO production cost savings of $41-70 million per year; 2) reduction in transmission energy losses of $3-4 million per year; 3) reduction in renewable curtailments of $0.3-0.9 million

[103] *Id.*, at IV-14.

[104] Arguments can be made that the increases in certain sectors are too large or small, but costs continue to decrease. No party has made claims that increases in certain sectors are not projected.

[105] Scenario A began with the 2018-2019 TPP, Scenario B then added 2028 generation resource mix information, and Scenario C then added 2028 projected gas prices based on the 2018 IEPR.

per year; and 4) increase in renewable procurement of $18 million per year.[106] DCRT calculated the BCR range from 1.78 to 2.66.[107]

5.3.2. DCRT's Analysis on the Public Policy Benefits

DCRT anticipates several public policy benefits from the construction and operation of the Proposed Project. The Proposed Project will 1) increase the transfer capability across the congested portion of the CAISO system between Palo Verde and Southern California, also known as the Palo Verde intertie, and, thereby, reducing congestion and customer costs in California;[108] 2) unload energy across highly utilized transmission lines to reduce energy loss, while encouraging further development of RA to connect to the Palo Verde hub to increase competition and meet RA goals for California;[109] and 3) expand the BAA for CAISO and APS so that both can benefit from the EIM, in addition the estimated production cost benefits.[110]

DCRT calculated that the Proposed Project will 1) increase transfer capability by 690 MW between California and Arizona when all lines are operational; 2) allow an additional 781 MW generation to the Delaney Substation and output to southern California; and 3) transfer an additional 219 to 257 MW between Arizona and California under transmission outage conditions.[111]

DCRT expects the Proposed Project will provide additional public policy benefits, including the increase ability to achieve California's de-carbonization

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[106] Exh. DCRT-1, Chapter III, Mackin Opening Testimony, at III-4.

[107] Chang Opening Testimony, at IV-37.

[108] *Id.,* at IV-2.

[109] *Id.*, at IV-3.

[110] *Ibid*.

[111] Mackin Opening Testimony, at III-4.

goals at a lower cost and reliability on the CAISO system in Southern California, while reducing renewable procurement costs and curtailment of renewable generation.[112]

Based on Scenarios A, B, and C, DCRT found that the reduction in renewable curtailment and cost savings from building solar resources in Arizona to be between $18.2 to $18.7 million in 2028 dollars.[113]

5.4. Cal Advocates' Rebuttal to the Presumption in Favor of the CAISO-Board Approved Economic Evaluation

To overcome the presumption in favor of a CAISO Board-approved economic evaluation, Cal Advocates presented the following arguments: 1) the CAISO's updated economic evaluation did not meet the requirements of the rebuttable presumption because it was not approved by the CAISO Board; 2) the BCR from the CAISO and DCRT models are inflated and based on outdated assumptions; and 3) the Proposed Project is unnecessary to achieve California's RPS goals set forth in SB 350 and SB 100.[114] As discussed below, we are not persuaded by these arguments.

Cal Advocates erroneously cited to D.08-12-058 as the basis for the Commission to deny the finding of a rebuttal presumption in favor of the economic evaluation.[115] We find D.08-12-058 inapposite here and distinguishable, as discussed below.

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[112] Chang Opening Testimony, at IV-3-IV-4.

[113] *Id.*, at IV-32.

[114] Wagle Opening Testimony, at 2-6.

[115] *Opening Comments of the Public Advocates Office to the Proposed Decision Granting DCR Transmission, LLC a Certificate of Public Convenience and Necessity for the Ten West Link Project,* filed October 21, 2021 (Cal Advocates' Opening Comments) at 3.

The Commission, in D.08-12-058, did not apply a presumption to the CAISO's economic evaluation for these three reasons particular to that proceeding:

1. The CAISO's economic evaluation, developed during the course of that proceeding, did not reflect a significant amount of public review and input presented at the beginning of that proceeding and rendered the economic evaluation used for CAISO-Board approval irrelevant;

2. The CAISO's economic evaluation neither complied with CAISO's TEAM analysis for economic evaluations, nor the principles and minimum requirements; and

3. Applying a rebuttable presumption would be fundamentally unfair to the other parties, because the parties already developed their showing with the understanding that the rebuttable presumption did not apply.[116]

Here, unlike D.08-12-058, the CAISO in this proceeding completed an economic evaluation in the 2013-2014 TPP and further updated the assumptions and calculations for the baseline and sensitivity evaluation using the TEAM analysis, as required under the safeguards and minimum requirements.

Moreover, pursuant to D.06-11-018, the Commission correctly declined to grant the rebuttable presumption in D.08-12-058, because the underlying CPCN application had commenced before the effective date of D.06-11-018. As stated in D.06-11-018:

> [T]o prevent delays and/or confusion with regard to pending CPCN proceedings, the rebuttable presumption granted in this decision will not apply to CPCN applications filed with the Commission prior to the effective date of this decision unless the economic

[116] D.08-12-058, at 20-23.

> analysis complies with the safeguards and requirements of this decision and the assigned commissioner of a pending transmission proceeding issues a ruling that explicitly elects to apply it to that application.[117]

Here, the instant application was filed and this proceeding commenced after the effective date of D.06-11-012. Therefore, a ruling that explicitly elect to apply the rebuttal presumption is unnecessary.[118] Based on the foregoing, the Commission finds Cal Advocates' argument to be unconvincing.

5.4.1. CAISO's Updated Economic Evaluation Do Not Need Further CAISO Board Approval

The Proposed Project had already received CAISO Board approval in 2014, citing to economic, reliability and public policy benefits.[119] The CAISO explains that the CAISO Board, since 2014, did not have any reason to revisit project need, since its updated economic analysis showed continuing net economic benefits to CAISO ratepayers. The CAISO tariff also did not require the CAISO Board to revisit a project once the Proposed Project was approved.[120]

As the CAISO Board approved the Proposed Project after evaluating economic benefits in 2014 and the updated economic evaluation found continuing economic benefits, the Commission finds that further CAISO Board approval of the updated economic evaluation for the Proposed Project is unnecessary to meet the minimum requirements under D.06-11-018 in this proceeding.

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[117] D.06-11-018, at 26.

[118] Cal Advocates Opening Brief extensively argued against a rebuttable presumption under D.06-11-018. *See*, Cal Advocates Opening Brief, at 5-6.

[119] Millar Rebuttal Testimony, at 2.

[120] *Rebuttal Brief of the California Independent System Operator* filed March 12, 2021 (CAISO Rebuttal Brief), at 4.

5.4.2. CAISO's Application of the IRP Portfolios are Reasonable and Proper

Cal Advocates argues that the economic benefits are based on outdated assumptions and inflated benefits. Specifically, Cal Advocates believes that the CAISO erroneously applied 16% differential for the capital cost of solar between Arizona and California, based on the portfolios from the 2017 IRP process, rather than the 3.6% differential, based on the portfolios from the 2019 IRP process.[121] Cal Advocates further believes the CAISO allocated solar resources improperly and did not conduct sufficient range of uncertainty analysis.[122]

Cal Advocates also argues that the 2019 IEPR forecast for earlier years has a larger differential in natural gas prices between Arizona and Southern California Gas hubs than the forecast for later years. Cal Advocates compared the projected natural gas prices of Arizona Phoenix hub and Southern California hub. The projected natural gas price differential between Arizona Phoenix hub and Southern California in 2028 is $1.13/MMBtu, which would drop to $0.58/MMBtu in 2055.[123] Because of that, Cal Advocates claims that using the 2019 IEPR natural gas price forecast from earlier years overstated the value of the Proposed Project.

In addition, Cal Advocates asserts that anticipated growth in battery storage will lead to change in future need of transmission projects and criticizes the limitation of the CAISO's estimate for storage growth.

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[121] Wagle Opening Testimony, at 2-25 and Chang Opening Testimony, at IV-29.

[122] When Cal Advocates referred to the 2017 IRP and 2019 IRP, the Commission inferred that Cal Advocates intended to reference the portfolios from the 2017 IRP process and 2019 IRP process. Cal Advocates Opening Brief at 15-16. *See also, Reply Brief of Public Advocates Office*, filed March 12, 2021 (Cal Advocates Reply Brief), at 10.

[123] *Ibid*., at 2-29.

At the time the CAISO completed the updated economic evaluation, the 2017-2018 PSP and the 2019-2020 RSP were the most updated IRP portfolios adopted by the Commission. The CAISO reviewed other industry reports on the capital costs of solar generation in Arizona, which aligned more with the portfolios from the 2017 IRP process, rather than 2019 IRP process, as argued by Cal Advocates.[124]

As consistent with the 2019-2020 and the 2020-2021 TPP cycles, the CAISO properly applied the PSP adopted by the 2017 IRP cycle as the base case and the RSP adopted by the 2019 IRP cycle as the policy-driven sensitivity in the economic evaluation of the Proposed Project to align with the transmission planning coordinated between the Commission, CAISO and CEC.[125]

Moreover, Cal Advocates offers no new modeling approaches and merely asserts flaws in the modeling and cost assumptions relied upon by the CAISO in its updated economic analysis of the Proposed Project. Cal Advocates substituted different cost assumptions from the Commission's *Inputs and Assumptions: 2019-2020 Integrated Resource Planning* (2019-2020 IRP assumptions), which was not available to the CAISO when the updated economic analysis for solar resources was completed. With the 2019-2020 IRP assumptions, Cal Advocates calculated a BCR between 0.55 to 0.73 and showed that the Proposed Project will result in benefits to the California ratepayers, even if it is less than anticipated by CAISO and DCRT.[126]

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[124] Yimer Corrected Rebuttal Testimony, at 8.

[125] D.20-03-028 at 4. *See also*, D.21-02-008.

[126] *Opening Brief of Public Advocates Office*, filed February 12, 2021 (Cal Advocates Opening Brief), at 16. *See also*, Wagle Opening Testimony at 2-52 and Cal Advocates Reply Brief, at 6.

It is also important to note that the IRP process continually updates information resulting in refreshed assumptions which would suggest different economic benefits for meeting the state's future resource needs. The holistic and ongoing IRP process, in coordination with the comprehensive TPP cycle, develops conclusions that are relied upon by developers and should be assumed to be consistent with the state's overall needs and direction.

Cal Advocates finally contend that the reliability benefits should be disregarded because the Proposed Project was not formulated to solve a reliability concern but provided no evidence to support its argument. We find this argument unpersuasive.

Upon review of the evidence and the Commission's IRP process, the Commission finds that the CAISO's use of the Commission-recommended portfolios from the IRP process is reasonable and appropriate.

5.4.3. CAISO Interconnection Queue and Project List Do Not Rebut the Presumption Afforded to CAISO's Economic Evaluation

Citing to the Interconnection Queue and the Project List, Cal Advocates believes the Proposed Project is unnecessary because the Interconnection Queue and the Project List reflect an approximately 68,000 MW of solar photovoltaic (PV) and approximately 131,000 MW of battery storage generation seeking connection to the CAISO grid which are not dependent on the Proposed Project.[127]

[127] *Brief of the Public Advocates Office on Additional Exhibits*, filed July 23, 2021 (Cal Advocates Additional Brief), at 2-3. The CAISO's Resource Interconnection Management System tracks and manages data from Interconnection Requests in the CAISO generator interconnection queue. The current version of the Interconnection Queue includes all the requests through Cluster 13. Due to the interconnection queue's large size in terms of both the number of requests and capacity, the CAISO has chosen to separately report the Cluster 14 projects. Together, the

The Interconnection Queue consists of interconnection requests from developers, which are regularly updated as developers complete, withdraw, or downsize their projects. The Project List identifies all the current generator requests seeking interconnection to the CAISO system. Cal Advocates essentially believes that the Proposed Project is unnecessary to meet the Commission's RPS goals.

DCRT responds that meeting the Commission's RPS goals was not the primary benefit of the Proposed Project. Rather, the Proposed Project's economic benefits alone should be the basis to grant the CPCN.

The Interconnection Queue and Project List present dynamic information about pending projects and uncertainty as to which projects will come to fruition. Given the uncertainty and the dynamic nature of the information, the Commission finds little value in the Interconnection Queue and the Project List towards the Commission's assessment of the need for the Proposed Project.

5.4.4. Cost-Effectiveness of the Proposed Project

To rebut the presumption afforded to the CAISO's economic evaluation, Cal Advocates may also show that the Proposed Project is not cost-effective. D.06-11-018 does not define the term "cost-effective." Here, Cal Advocates argued that the Proposed Project would produce less benefit than calculated by the CAISO and DCRT. We find, however, that Cal Advocates failed to adequately demonstrate that the Proposed Project is not cost effective.

Cost-benefit analysis is not synonymous with cost-effective analysis. The cost-effective analysis expands the cost-benefit analysis and focuses on whether the cost of the Proposed Project will meet the needs of the California ratepayer,

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Interconnection Queue and the Project List identify all the current generator requests seeking interconnection to the CAISO system that are and are not dependent on the Proposed Project.

beyond the quantifiable benefits discussed above. Hence, the Proposed Project can be cost-effective with reduced economic benefit by effectuating the increase in production efficiency and reduction of ratepayer costs.[128] Moreover, as discussed below, we find that in the grand scheme this Proposed Project is cost-effective.

Pub. Util. Code § 1002.3 provides:

> In considering an application for a certificate for an electric transmission facility pursuant to Section 1001, the commission shall consider cost-effective alternatives to transmission facilities that meet the need for an efficient, reliable, and affordable supply of electricity, including, but not limited to, demand-side alternatives such as targeted energy efficiency, ultraclean distributed generation, as defined in Section 353.2, and other demand reduction resources.

As the Commission seeks to avoid developing transmission in areas where electric resources are unlikely to develop, causing stranding of expensive transmission investments and to ensure that reality follows planning, the Commission must weigh these broad economic and public policy benefits against the monetary costs to construct the Proposed Project. Despite the disputed BCRs and assumptions in this proceeding, the Commission must consider the larger picture to meet the future needs of California ratepayers.

Furthermore, all parties agree that increasing resources of renewable energy and battery capacity are necessary to meet the increasing electric demands of California ratepayers but merely dispute how that goal would be attained. The increase of the renewable energy and battery storage projects will have little benefit to California ratepayers without sufficient capacity and deliverability.

[128] 2013-2014 TPP, at 209.

Here, aside from the calculated costs and benefits, the Proposed Project will expand the CAISO BAA and would improve opportunities for interstate commerce.[129] In consideration of the foregoing broader considerations and impacts of the Proposed Project, the Commission concludes that the Proposed Project is cost-effective.

5.4.5. Cal Advocates Failed to Overcome the Rebuttable Presumption in Favor of CAISO Board-Approved Economic Evaluation

In addition to the prior arguments, Cal Advocates quoted Member Haenichen from the proceeding before the Arizona Power Plant and Transmission Line Siting Committee to dispute the cost-effectiveness of the Proposed Project.[130] That quote was taken out of context. Member Haenichen expressed concern regarding the cost-effectiveness of battery storage interconnection projects which may result in an increase in "fossil-fired equipment" in Arizona if the anticipated interconnection battery storage projects did not come to fruition.[131] Member Haenichen concluded the Proposed Project was another "east-to-west flowing transmission line" that will be "overwhelmingly beneficial to California, with a relatively small benefit accruing to Arizona ratepayers and other entities in the state of Arizona" and voted against the Proposed Project.[132]

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[129] Exh. Cal PA-5, *Chapter 4: Arizona Transmission Policy and Planning Implications for Ten West Link (Witness: Danielle Dooley) citing to the Biennial Transmission Assessment Report* (Dooley Opening Testimony), at 4-2.

[130] Cal Advocates' Opening Comments, at 6-7.

[131] Exh. Cal PA-25, *Reporter's Partial Transcript of Proceedings Before the Arizona Power Plant and Transmission Line Siting Committee, Pages 1104 to 1109 and 1226 to 1231*, filed July 31, 2020 (APPTL Partial Transcript), at 1226-1231.

[132] *Id.*, at 1228-1229.

As discussed above, we are not persuaded by any of the Cal Advocates' rebuttal arguments and find that Cal Advocates therefore failed to overcome the rebuttable presumption in favor of the CAISO Board-approved economic evaluation.

5.5. Conclusion

In sum, the Commission finds that the CAISO's original and updated economic evaluations are reliable in determining the necessity and cost-effectiveness of the Proposed Project, since Cal Advocates failed to overcome the rebuttable presumption here. The Commission further finds that the Proposed Project is needed and meets the requirements under Pub. Util. §1001 *et seq.*

6. Environmental Considerations

The Commission is the lead agency under CEQA, and the BLM is the lead agency under National Environmental Policy Act (NEPA) for the purposes of identifying environmental impacts of the Proposed Project. We address all environmental considerations associated with this Application and the Proposed Project in the following section of this decision.

6.1. Compliance with NEPA

BLM filed Notice of Intent (NOI) to prepare an Environmental Impact Study (EIS) for the Proposed Project under NEPA, on March 23, 2016. On April 11, 2016, the Commission entered into a Memorandum of Understanding (MOU) with the lead agency under NEPA, Federal Department of the Interior, BLM, to act as a cooperating state agency responsible for ensuring the EIS complied with the CEQA.[133]

The Commission, with the assistance of its consultant, worked very closely with BLM to provide relevant CEQA guidance, detailed review of, and

[133] Exh. DCRT-66, *Final Environmental Impact Statement,* Appendix 1B, (FEIS Appendix 1B).

recommended revisions to, the Draft Environmental Impact Statement (DEIS) and Final EIS (FEIS), as well as detailed review and recommended revisions for all supporting technical studies and appendices, including the Appendix 1C Supplemental California Public Utilities Commission Information attached to the FEIS (CEQA Appendix).[134]

On August 31, 2018, BLM published the DEIS. The FEIS was provided to the Commission on September 12, 2019, and, thereafter, made available to the public for additional comment on October 15, 2019. The ROD was issued on November 22, 2019.[135]

6.2. Compliance with CEQA

Under CEQA, the lead agency is either the public agency that carries out the project or has the greatest responsibility for supervising or approving the project. For the Proposed Project, the Commission is the lead agency under CEQA. As the lead agency, the Commission must review and consider the environmental impacts identified in the FEIS as it relates to the Proposed Project and the CEQA requirements. [136]

The Commission further has the authority to mitigate or avoid only the direct and indirect environmental effects of the Proposed Project and must approve any mitigation measures within the Commission's jurisdiction that

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[134] *See* FEIS, Appendix 1C, *Supplement California Public Utilities Commission Information*.

[135] The ROD summarizes the environmental review process FRA conducted in accordance with NEPA, and BLM's Procedures for Considering Environmental Impacts. The ROD identifies the alternatives considered by BLM, addresses comments received during the NEPA process, and identifies the Selected Alternative. The ROD also includes a list of all measures to avoid and minimize environmental harm, including a monitoring and enforcement program to ensure adherence to these measures. Finally, the ROD presents the BLM decision, determinations, and findings regarding the Project, and identifies the factors that BLM considered in making its decision. 40 CFR §1505; 64 Fed. Reg. 28545, May 26, 1999.

[136] 14 Cal. Code Regs. §15090(a).

avoid or mitigate the environmental effects due to the parts of the Proposed Project the Commission approves, unless the changes or alterations are infeasible for specific economic, legal, social, technical and other considerations.[137] The Commission must balance any unavoidable impacts against specific economic, legal, social, technical or other benefits.

Under CEQA, unlike NEPA, we must consider "significant" environmental impacts of the proposed project when we perform the environmental review. The CEQA Guidelines provides that a "significant effect on the environment' means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project."[138] The significance criteria used for this analysis of environmental impacts are based on Appendix G of the CEQA Guidelines, as well and input from Cooperating Agencies, such as the Commission.[139] These criteria serve as a benchmark for determining if the Proposed Project would result in significant impacts when evaluated against the baseline conditions established in the EIS and Technical Environmental Study (TES).

The function of Mitigation Measures (MMs) under CEQA differs from the function of MMs in the EIS under NEPA. For instance, in the EIS, mitigation can be applied to any potentially adverse effect, where feasible, regardless of the severity or duration of the effect. Under CEQA, MMs are applied to reduce potential environmental impacts to less than significant levels.[140] Under CEQA,

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[137] 14 Cal. Code Regs. §§ 15091(a)(2) and 15096(g).

[138] Public Resources (Pub. Res.) Code §15382.

[139] FEIS, Appendix 1C, *Supplemental California Public Utilities Commission Information* (Appendix IC), at Appendix 1C-2.

[140] Pub. Res. Code §15126.4(a)(1).

a MM must be a specific, enforceable, feasible action that can be shown to reduce significant impacts.[141] The effectiveness of the measure should be demonstrable and capable of being monitored with specific performance standards. Unlike NEPA, MMs under CEQA are only applied to avoid or reduce impacts that would otherwise be significant.[142]

The FEIS for the Proposed Project considered the potential environmental impacts and found that the majority of the significant environmental impacts associated with the construction and operation of the Proposed Project could be mitigated and minimized to less than significant level to comply with CEQA. A copy of the MMs is included with this decision as Appendix A. No significant and unavoidable impacts were found.

On September 20, 2021, pursuant to CEQA Guidelines 15225(a), the Commission's Energy Division noticed the ALJ and the service list of this proceeding that the Commission intends to use the FEIS, including the CEQA Appendix, in lieu of preparing a separate CEQA document, environmental impact report (EIR) (September 20, 2021 Notice).

Energy Division informed the ALJ that, after reviewing the protests submitted to the BLM and in this proceeding, it continues to believe that the FEIS, including its CEQA Appendix, meets the requirements of CEQA. Accordingly, the September 20, 2021 Notice, attached to Appendix B of this decision, is hereby marked as Exh. A and is received into the evidentiary record.

[141] Pub. Res. Code §15126.4(a)(2).

[142] Pub. Res. Code §15126.4(a)(3).

6.2.1. Environmentally Superior Alternative

CEQA Guidelines requires the identification of an "environmentally superior alternative."[143] Selection of the no project alternative would avoid all of the adverse impacts and would be the environmentally superior alternative, but none of the Proposed Project's benefits will be realized. To balance the Proposed Project's benefits with its potential adverse effects, the environmentally superior alternative among the other alternatives is Alternative 2, the BLM Utility Corridor Route, utilizing Subalternative 4D (Alternative 2-4D), which is the BLM's Preferred Alternative identified in the FEIS.[144]

Alternative 2-4D reduces adverse impacts on visual and recreational resources. Under this Alternative, the BLM would approve a total of 21.8 miles of 200-foot-wide ROW within existing designated utility corridors in California and comprised of segments selected to:

1) emphasize the use of BLM utility corridors;
2) consolidate development and disturbance with existing disturbance, such as along portions of the already impacted DPV transmission line route;
3) avoid residential and other development east and south of Blythe;
4) consolidate development along the existing DPV1 transmission line route across private lands in California; and
5) avoid the culturally sensitive area in the vicinity of the Mule Mountains southwest of Blythe.

Alternative 2-4D also avoids impacts to sensitive cultural resources and reduce impact to visual resources in Arizona, by avoiding the King of Arizona

[143] Pub. Res. Code §15126.6(e)(2).

[144] Appendix IC at Appendix 1C-292.

(KofA) National Wildlife Refuge (NWR), while also avoid biological, recreation, and land use impacts associated with crossing the KofA NWR in Arizona.[145] Therefore, Alternative 2-4D would be the environmentally superior alternative under CEQA.

6.2.2. Certification of EIS

Where, as here, the project requires compliance with both CEQA and NEPA, CEQA encourages the state agency to use the NEPA document, EIS, if 1) the EIS is prepared before the state agency would otherwise prepare its own EIR, 2) the EIS complies with the provisions of the CEQA Guidelines, and 3) the EIS is supplemented to include certain CEQA requirements that are not required pursuant to NEPA.[146] Here, the FEIS was prepared before the Commission would otherwise prepare its own EIR and supplemented by the CEQA Appendix to comply with the CEQA Guidelines.

The FEIS and the CEQA Appendix was completed after notice and opportunity for public comment on the scope of the environmental review and the DEIS, as required by CEQA. The FEIS documents all written and oral comments made on the DEIS, and responds to them, as required by CEQA. The FEIS identifies MMs in the CEQA Appendix that 1) avoid or substantially lessen the environment impacts and 2) identify no significant and unavoidable environmental impacts.

As required by CEQA, the CEQA Appendix of the FEIS identifies Alternative 2-4D as the environmentally superior alternative pursuant to CEQA and details of the Energy Division's consideration and comparison of the

[145] *Ibid.*

[146] CEQA Guidelines § 15221; Pub. Resources Code § 21083.7.

combinations of Four Action Alternatives, including the environmentally superior alternative, described above, along with associated subalternatives, considered in full detail in the body of the FEIS. Action alternatives consist of individual segments that have been compiled into full Alternative Routes and Subalternatives.[147] Additionally, the CEQA Appendix of the FEIS considered the No-Project and No-Wire Alternatives. As required by CEQA (but not NEPA), the FEIS discusses growth-inducing effects in Section 5.1 of the CEQA Appendix.[148]

The Commission reviewed and considered the information contained in the FEIS and believes it meets the requirements of CEQA. The Commission certifies that the FEIS has been completed in compliance with CEQA after the Commission received, reviewed, and considered the information contained in the FEIS with the CEQA Appendix. The Commission further finds that the FEIS with the CEQA Appendix reflects our independent judgment and analysis. Accordingly, the Commission concludes that the FEIS with the CEQA Appendix sufficiently meets the CEQA requirements and is adequate for our decision-making purposes in this proceeding.

6.3. Pub. Util. Code §1002(a)

In granting a CPCN, Pub. Util. Code §1002(a) requires that the Commission must also consider the following factors: 1) community values; 2) recreational and park areas; 3) historical and aesthetic values; and 4) influence on environment.[149]

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[147] FEIS, Chapter 2, at 2-3.

[148] 14 California Code of Regulations (CCR) §15221.

[149] Pub. Util. Code §1002(a) requires the Commission to consider, as a basis for granting a certificate of public convenience and necessity, community values, recreational and park areas, historical and aesthetic values, and influence on the environment. (See CEQA Guideline, Public Resources (Pub. Res.) Code § 15091(a), "No public agency shall approve or carry out a project

Pursuant to Pub. Util. Code § 1002(a)(1), we have considered the community values factor. There is no opposition from any party in this regard. FEIS demonstrates that the Proposed Project uses the existing transmission line corridor, and therefore results in only minimal impact upon any nearby communities.

Specifically, the FEIS showed that the local communities rely upon the cumulative effect area (CEA) to draw visitors to support the local economy. The FEIS also showed that, in the long run, the main unavoidable adverse effect would be the increased development in natural areas heavily used for recreation;[150] however, in the reasonably foreseeable future, actions on the undeveloped natural areas would likely have only minor cumulative effect on the recreation experience, the availability of primitive or unconfined recreational settings, and the solitude in the CEAs.[151]

Moreover, the Proposed Project also will neither displace existing housing or persons from housing nor necessitate the construction of replacement housing elsewhere.[152] Specifically, the FEIS anticipates 1) no impact from construction workers requiring housing that exceeds the supply of local housing or temporary

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for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects […]. The possible findings are: […] (c) Specific legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.")

[150] FEIS, Chapter 4, *Environmental Consequences* (FEIS Chapter 4), at 4-126.

[151] FEIS, Chapter 3, *Past, Present, And Reasonably Foreseeable Future Projects* (CEA Projects), at 3-67.

[152] FEIS Chapter 4, at 4-135.

housing facilities and 2) minimal potential changes in the demand for labor or in local employment.[153]

Finally, as growth has been accounted for in various local and regional plans and projections, cumulative impacts from construction workers on the local housing market are negligible to moderate during project construction.[154] The Proposed Project, in conjunction with reasonably foreseeable energy, utility, and other infrastructure projects, could support population increases in the area in the foreseeable future.[155]

Pursuant to Pub. Util. Code § 1002(a)(2), we have also considered the issue of preservation of recreational and park areas. There is no opposition from any party in this regard. FEIS provides a detailed analysis of potential impacts to these recreational and park areas.

Specifically, FEIS also showed that the impacts to recreation and recreation areas, related to noise, dust, visual disturbance and restricted access during construction, would likely be localized and short-term.[156] FEIS projected that the reduction in recreation users coming to the area will be minor, as most users will likely move to other nearby locations not impacted by construction activities.[157] Ongoing operations and maintenance will have little or no long-term effect on the tourism- and recreation-related economy.[158]

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[153] *Ibid*.

[154] *Ibid.*

[155] *Ibid.*

[156] *Ibid.*

[157] *Ibid*.

[158] FEIS Chapter 4, at 4-133.

Pursuant to Pub. Util. Code § 1002(a)(3), we have also considered the historic and aesthetic values. There is no opposition from any party in this regard. The Proposed Project's impacts on historical and aesthetic values and the environment were further discussed in Sections 6.2 and 6.2.1, above.

Pursuant to Pub. Util. Code § 1002(a)(4), we have considered the Proposed Project's influence on its environment in our independent review of the FEIS.

6.4. Alignment with the Commission's Environmental and Social Justice Action Plan

In February 2019, the Commission adopted the Environmental and Social Justice (ESJ) Action Plan to serve as a roadmap for implementing the Commission's vision to advance equity in its programs and policies for ESJ or disadvantaged communities.

Here, the FEIS reviewed the Proposed Project's environmental and economic impacts to ESJ communities. ESJ communities is defined in the FEIS as minority or low-income populations.[159] In California, the ESJ communities impacted are located within Riverside County, with a minority population of 61.7 percent, which is 1.5 percent greater than the state percentage.[160] The city of Blythe and surrounding area have a minority population of 70 percent with about 24 percent being low-income. Ripley, which is south of Blythe, has a 95 percent minority population with highest low-income population at 33.7 percent.[161] In Riverside County, the land within half mile of the Proposed Project is used for commerce, recreation, residence, and agriculture.

[159] FEIS Chapter 4, at 4-136

[160] FEIS, Chapter 3, *Cultural Resources* (Cultural Resources), at 3-50.

[161] *Id.,* at 3-50-3-51.

The Proposed Project will impact a disproportionate number of the ESJ communities on a localized basis from construction, operation, and maintenance of the Proposed Project, due to the high percentage of minority population in Riverside County. These impacts would include construction noise and other disruptions and impacts to visual resources and property values during operations.[162] However, FEIS found that any impact would likely be negligible to minor due to the predominantly low population density in this rural setting and the presence of existing transmission and utility lines nearby.[163]

The Proposed Project route is adjacent or nearly adjacent to existing transmission lines, interstate highways, or other utility corridors as a means of minimizing new disturbance to either the natural or human environment.[164] Overall, the FEIS found that no short- or long-term displacement of low-income or minority businesses or residents will occur under the Proposed Project to contribute to potential cumulative effects on minority populations.[165]

Yet, ESJ communities may benefit from the short-term economic stimulus from construction activities and expenditures, short-term and longer-term increases in tax revenues, and added capacity and reduced congestion for electricity transmission.[166]

The Proposed Project further meets the Commission's ESJ Action Plan goals to 1) to increase climate resiliency; and 2) promote economic and workforce development opportunities in the affected ESJ communities. We note the

[162] FEIS, *Executive Summary* (Executive Summary), at ES-12.

[163] *Ibid.*

[164] *Id.,* at ES-12-ES-13.

[165] *Ibid.*

[166] *Ibid*.

identified negative impacts are not directly attributable to the construction of the Proposed Project in California but related to the overall project.

Upon review of the FEIS, we find that although there may be some potential and gradual negative economic and environmental impacts from the Proposed Project, the MMs, will reduce the impact to the ESJ communities to less than significant levels. The Proposed Project is also consistent with the goals set forth in the Commission's ESJ Action Plan. The Proposed Project will not result in a long-term disproportionate environmental impact upon the affected ESJ communities. Based on the foregoing, we find that the construction of the Proposed Project aligns with the Commission's ESJ Action Plan

6.5. The Commission's Third Amended Scoping Memo Did Not Materially Change the Issues Surrounding Environmental Review

Cal Advocates believes the Commission's Third Amended Scoping Memo changed the issues in scope to warrant a need to further "develop a record to assess whether the Commission reviewed and considered the FEIS and whether the FEIS reflects the Commission's independent judgment and analysis" and did not address the sufficiency of the FEIS.[167] Specifically, Cal Advocates incorrectly asserts, in its Opening and Reply Brief, an inability to address Issue 8 in the First Scoping Memo (Issue 8) and Issue H in the Third Amended Scoping Memo (Issue H) because it lacked information about the Commission review and consideration of the FEIS or whether the FEIS reflects the Commission's independent judgment and analysis. Cal Advocates' Reply Brief was filed on March 12, 2021, over three weeks after the Third Amended Scoping Memo was issued, and claimed "the Parties cannot take a position in the reply briefs without

[167] Cal Advocates Reply Brief, at 38

the Commission providing some indication as to whether it has reviewed and considered the FEIS and intends to adopt it in lieu of preparing an EIR under CEQA."[168]

Issue H did not materially change the scoped Issue 8. Both Issues 8 and H addressed the sufficiency of the EIS to meet CEQA requirements. Issue H clarifies the Commission's scope in evaluating the sufficiency of the FEIS.

The Commission's role in the EIS process is clearly stated in the Appendix 1B of the FEIS, made available to the public on October 15, 2019, which states,

> CPUC Will: (1) As the cooperating State agency, be responsible to ensure that the EIS is in compliance with all requirements of CEQA and will be responsible for the scope and content of the EIS that relates to all necessary aspects of CEQA. . .[169]

The Introduction of the 509-page CEQA Appendix to the FEIS, entitled "Supplemental California Public Utilities Commission Information" states, in relevant part:

> This appendix incorporates the environmental analysis conducted in the EIS by reference, *while providing supplemental analysis needed to address issues that may be unique to CEQA* [emphasis added]. This includes describing those environmental effects resulting from Project implementation identified in Chapter 4, Environmental Impact Analysis that may be considered significant and that cannot be mitigated to a less than significant level under CEQA. The analysis also identifies cumulative impacts, the potential to foster economic or population growth either directly or indirectly in the Project study area and surrounding environment, and an environmentally superior alternative.

[168] *Id.,* at 39.

[169] FEIS, Appendix 1B, at 5.

> Should the CPUC decide to issue a CPCN based on environmental analysis presented in the EIS, pursuant to Section 15221 of the CEQA Guidelines, the MOU provides for the CPUC's continued involvement during the Project's construction and operation phases. This involvement includes, but is not limited to, enforcement of Mitigation Measures (MMs) presented in the Mitigation Monitoring and Reporting Program (MMRP; Section 6.0).

The Introduction of the CEQA Appendix and the Appendix 1B provided the factual information necessary to analyze whether the FEIS complies with CEQA; the Commission properly reviewed and considered it; and it reflects the Commission's independent judgment and analysis as identified in Issues 8 and H.

Therefore, the Commission finds that Issue H did not materially change the scope of Issue 8 and Cal Advocates was not prejudiced by the scoped issues in the Third Amended Scoping Memo.

7. Maximum Reasonable and Prudent Cost

Pub. Util. Code §1005.5 requires the Commission, in granting a CPCN, to specify a maximum reasonable and prudent cost for the facility. The reasonable and prudent maximum cost (cost cap) for the Proposed Project was determined using the estimated anticipated construction cost, taking into consideration the design of the Proposed Project, the expected duration of construction, an estimate of the effects of economic inflation, and any known engineering difficulties associated with the Proposed Project.

CAISO originally awarded the project to DCRT subject to a cost cap of $241,805,391.[170] Since then, due to route change and a delay in in-service date,

[170] Unless otherwise noted, all cost figures are expressed in 2028 dollars ($).

DCRT estimates the maximum reasonable cost for the Proposed Project to be $389,045,968[171] in 2021 dollars which breaks down as follows:

- Development $39,061,346
- Financing $45,024,237
- SPV – Management $26,866,199
- EPC Construction $225,664,267
- Interconnection Costs $ 52,429,919[172]

DCRT estimates an additional annual Operation and Maintenance cost of $9,700,000, including estimated property taxes.

Cal Advocates challenges the reasonableness of the cost based on its assertion that Arizona ratepayers will benefit by $2-7 million in cost savings per year from the Proposed Project and the costs of the Proposed Project should be borne by both states. Cal Advocates urged the Commission therefore to condition the approval of the CPCN for the Proposed Project upon DCRT submitting the Proposed Project for review of cost allocation under FERC Order 1000. The Commission rejects this argument because the issue of allocation of the Proposed Project costs is outside the scope of this proceeding and outside the Commission's jurisdiction pursuant to Pub. Util. Code § 9600(a)(2)(A).

We note, Cal Advocates proposes, for the first time in its opening comments to the proposed decision, that the cost cap should be reduced by 6.5 to 23 percent to reflect the benefits that Arizona ratepayers may receive from the Proposed Project and proposes that a 5 percent contingency to be included in the cost cap. Both of these untimely propositions are unsupported by the evidence in the record.

[171] DCRT Opening Brief, at 6.

[172] Exh. DCRT-1, at. 16 and Exh. DCRT-5.

Furthermore, Cal Advocates failed to account for the impacts to the Arizona environment and ESJ communities from the approximately 103.5 miles of transmission line in Arizona and associated risks of the uncertainties of the proposed interconnection projects. Member Haenichen spoke at length during the proceeding before the Arizona Power Plant and Transmission Line Siting Committee and voted against Arizona's approval of the Proposed Project arguing, inter alia, that "east-to-west flowing transmission line" would be "overwhelmingly beneficial to California, with a relatively small benefit accruing to Arizona ratepayers and other entities in the state of Arizona" and that "[Arizona ratepayers] might wind up with just a bunch of combustion turbines . . . fired by natural gas."[173]

Based on the evidence, we believe DCRT's updated estimates are reasonable and find that the reasonable and prudent maximum cost for the Proposed Project, including contingency, is $389,045,968 in 2021 dollars. This cost cap shall not be exceeded absent significant changes to the Proposed Project which cannot be anticipated at this time. The Commission finds the figures are reasonable and within expectations as the Proposed Project was initially submitted in 2016 with an expected in-service date in 2021. However, as further detailed in Section 8.1 below, to safeguard the California retail ratepayers, the Commission is committed and intends to exercise its authority to review actual costs incurred to ensure reasonableness and prudency and to challenge them as appropriate at the FERC proceedings.

[173] APPTL Partial Transcript, at 1230.

8. DCRT's Request for Exemption from GOs 65-A, 77-M, 104-A is Granted in Part and Denied in Part.

DCRT requests exemptions from all annual reporting requirements under GOs 65-A, 77-M, and 104-A, due to the lack of retail customers in California as DCRT will operate as part of the CAISO system and subject to FERC review and approval. GOs 65-A, 77-M, and 104-A each concern some element of financial disclosure that utilities must regularly report to the Commission.

8.1. GO 65-A

GO 65-A, in pertinent part, requires each utility with more than $200,000 in annual gross operating revenue to file with the Commission a copy of each financial statement it prepares in the normal course of business that presents its operating results and financial condition, as well as a copy of its annual report and all other financial statements issued to its stockholders.[174]

DCRT argues that the objectives served by GO 65-A are inapplicable to DCRT "[a]s the Commission is not performing a ratemaking function with regard to DCRT" in this proceeding and should be waived.[175]

However, Cal Advocates correctly pointed out that the Commission is involved in the FERC Transmission Owner (TO) rate cases and granting exemptions from the reporting requirements may impede its ability to obtain relevant and accurate information to ensure that customer interests are protected, since roughly 90% of the costs of CAISO transmission is paid indirectly through the energy rates of California retail customers.[176] Cal

[174] GO 65-A.

[175] Application, at 32.

[176] *Protest of the Office of Rate Payers Advocates*, at 8.

Advocates further argued that the exemption will prevent access to "critical information" to both Commission staff and Cal Advocates without litigation.

Although the Commission is not engaging in ratemaking in this proceeding, the Commission is a party to the ratemaking of DCRT in the FERC TO rate cases, once DCRT is fully operational. Accordingly, DCRT's request for exemption from annual reporting requirements under GO 65-A is not in the public interest to California ratepayers and is denied.

8.2. GO 104-A

GO 104-A, in pertinent part, requires each utility with more than $50,000 in annual gross operating revenue to annually file with the Commission a report identifying all persons holding a financial interest in the utility, either based upon contracts they hold with the utility or for services provided to the utility or based upon their control of ten percent or more of the voting power in the utility.[177]

DCRT believes that adhering to these reporting requirements is unnecessary, duplicative and burdensome for a transmission-only utility that is subject to (i) rate regulation by FERC, and (ii) restrictions on the costs that may be recovered in its TAC and should be waived.[178] DCRT further asserts that the form supplied by the Commission's Energy Division for GO 104-A annual report requires "information that complements the regulation of cost-based rates by the Commission, such as information on income statements, sales to residential

[177] GO 104-A.

[178] Application at 32. DCRT will financial information and reports to FERC, which will be publicly available through FERC's processes.

customers, and related issues" which is inapplicable to DCRT, since DCRT has no retail customers and will be subject to FERC rate authority.[179]

Considering DCRT will be a transmission-only utility under the operational control of CAISO with its rates and terms and conditions of service set by FERC, DCRT is still subject to the Commission's oversight. The Commission is unconvinced that the information required under GO 104-A should be exempted. Accordingly, DCRT's request for exemption from annual reporting requirements under GO 104-A is denied.

8.3. FERC Forms 1 and 3-Q as Proxy for GOs 65-A, 104-A.

FERC Form 1, in pertinent part, requires FERC-regulated utilities to file with FERC an annual financial statement including any statement to stockholders, a balance sheet, and statements of income, retained earnings, cash flows, and related information. Among the Form 1 individual components is the duty to identify the name, title, and salary of every executive officer, but not of all other such employees making $50,000 or more annually.[180] FERC Form 3-Q, filed quarterly, is very similar to FERC Form 1 but is intended to supplement information to be provided in Form 1.[181]

DCRT, once constructed and in operation, must file FERC Forms 1 and 3-Q with FERC. FERC Forms 1 and 3-Q are, to a meaningful degree, duplicative of the information that is captured by GOs 65-A and 104-A. The Commission also does not foresee any change in the availability of information that would alter the Commission's ability to gauge and exercise its safety oversight authority of

[179] Application, at 32.

[180] FERC Form 1 can be found at the FERC website.

[181] FERC Form 3-Q can be found at the FERC website.

DCRT; raise new, additional, or different safety implications; or result in any change to the reliability of DCRT's electrical service.

The filing of FERC Forms 1 and 3-Q is also an efficient use of resources for the Commission and DCRT. First, less Commission resources may be required to track, review, and synthesize the information in the FERC forms for the Commission's purposes as a party to the FERC TO rates proceedings and as watchdog over DCRT's requested rate recovery. Second, DCRT would require less work to prepare only those forms (as opposed to also preparing GO 65-A and 104-A filings) and, therefore, avoid potentially duplicative effort.

Considering (1) DCRT is a wholesale-only utility that does not have its rates set by the Commission and is operationally controlled by CAISO, (2) the Commission's oversight of DCRT regarding safety issues will be unaffected, and (3) there will be reduction of the Commission's regulatory work burden and additional work by DCRT to prepare and file GO 65-A and 104-A information, the Commission authorizes DCRT to file its FERC Forms 1 and 3-Q filings to suffice as proxies for the financial information that would otherwise be received pursuant to GOs 65-A and 104-A filings.

8.4. FERC Form 1 and GO 77-M Requirements

GO 77-M, in pertinent part, requires each utility with more than $500,000 in annual gross operating revenue to annually file with the Commission a statement identifying the titles and duties and compensation of its executive officers and of all employees earning more than $85,000 annually.[182] GO 77-M

[182] GO 77-M.

requires submission of data on the compensation of officers and employees, dues and donations, and legal fees.[183]

While the Commission agrees with DCRT that the "primary" purpose of GO 77-M is to assist the Commission in setting utilities' rates, the Commission has never said this is the sole purpose of GO 77-M and that, indeed, its purposes go beyond that of cost-of-service or rate-of-return ratemaking at the Commission.[184] The Commission may use all information it gleans from GO 77-M, as well as GOs 65-A and GO 104-A, in carrying out its responsible role as a party in the applicable FERC proceedings.[185]

DCRT argues that GO 77-M's disclosure requirements was unnecessary and unduly burdensome because the Commission lack jurisdiction over a DCRT's rates.[186] However, the Commission has required utilities to submit the annual reports required by General Order 77-M when FERC Form 1 is not a proxy that suffices to convey the information that would have been found in a properly completed and filed GO 77-M.[187] As explained previously, the Commission has a continuing duty to ensure that rates remain reasonable and affordable, and GO 77-M remains one tool to assist the Commission in fulfilling this duty in its responsible role before FERC.

Additionally, FERC Form 1 contains a duty to identify the name, title, and salary of every executive officer making $50,000 or more annually. Given the operational size of DCRT and its parent companies, Starwood Energy and

[183] Application, at 32.

[184] D.19-07-002, at 7-9.

[185] *Ibid*.

[186] Application, at 32.

[187] D.19-07-002, at 9.

Atlantica, it is presumed that employees, who may otherwise not be disclosed in the FERC Form 1, would only have been identified and their titles, duties and their compensation described, if DCRT met the GO 77-M requirements. Based upon this observation, FERC Form 1 is clearly not a proxy that suffices to convey the information that would have been found in a properly completed and filed GO 77-M.

Although the Commission's oversight regarding DCRT is not the same as it would be for a typical utility under the Commission's full regulatory scheme, an exemption from complete compliance with GO 77-M filing requirements would pose a meaningful harm to the Commission's continued responsible roles concerning DCRT. This is because DCRT's presentation of FERC Form 1 as a proxy for compliance with GO 77-M would be inadequate, given the differences in their respective sets of information. Because the information found in FERC Form 1 does not suffice as a proxy for the information found in GO 77-M for the Commission's needs, DCRT's request for exemption from annual reporting requirements under GO 77-M is denied. DCRT must file complete information in full conformance with GO 77-M requirements.

8.5. Authorities Cited by DCRT in Support of Its Requested Reporting Exemptions are Inapposite

DCRT cites to D.00-12-030 and D.18-09-030 to support its request for full waiver of annual reporting requirements under GOs 65-A, 77-M, and 104-A. Neither decision fully exempts the reporting requirements for those applicants.

In D.00-12-013, the applicant requested exemption only from those requirements that are not applicable to a utility offering market-based rates.[188] The Commission relieved the applicant of certain reporting requirements

[188] D.00-12-030 (Wild Goose Decision), at 3.

deemed inapplicable to the applicant's operations but did not waive all annual reporting requirements.[189]

In D.18-09-030, the Commission granted a limited exemption from the annual reporting requirements under GOs 65-A, 77-M and 104-A by requiring the applicant to provide a copy of the applicant's FERC Form 1 to "facilitate providing the Commission with the vast majority of the relevant reporting information," when requested.[190]

Here, the Commission finds that D.19-07-002 is more applicable in this proceeding. In D.19-07-002, the applicant, Trans Bay Cable LLC (TBC), requested to be relieved of reporting requirements under GOs 65-A, 77-M, and 104-A.[191] TBC is a transmission-only utility with solely wholesale customers and without retail customers.

Like DCRT, TBC is under the operational control of CAISO and regulated solely by FERC for purposes of its rates and terms and conditions of service.[192] TBC owns and operates a single high voltage direct current transmission line service of approximately 400 MWs, spanning 53 miles from the town of Pittsburgh to the city of San Francisco.[193] In D.19-07-002, the Commission ordered TBC to file FERC Forms 1 and 3-Q as proxies for filings under GOs 65-A and 104-A and denied request for waiver of filing under GO 77-M.[194]

Likewise, in the instant proceeding, the Commission:

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[189] *Id.,* at 8.

[190] D.18-09-030, at 49.

[191] D.19-07-002, at 1.

[192] *Id.,* at 2.

[193] *Ibid.*

[194] *Id.,* at 14.

1) denies the requested exemption from the reporting requirements under GOs 65-A, 104-A and 77-M; and

2) authorizes DCRT to file the FERC Form 1 and Form 3-Q in lieu of the reporting requirements under GOs 65-A and 104-A.

9. DCRT's Request for Limited Exemption to the Affiliate Transactions Rules

The Affiliate Transaction Rules (ATRs), as initially adopted in D.94-12-088 and as set forth in D.06-12-029, were intended to establish standards of conduct for relationships between Commission-regulated gas and electric utilities and their corporate affiliates. The adopted rules create standards for non-discrimination, disclosure and information, and separation aimed at fostering competition and protecting consumers' interests.

On October 12, 2016, DCRT, in its Application, requested certain exemptions from the ATRs in order to utilize the resources available from its parent company, Starwood Energy, Atlantica and its affiliates. DCRT intends to utilize resources, personnel, and facilities of its affiliates Starwood Energy to facilitate the cost-effective financing, development, construction, ownership, operation, and maintenance of the Proposed Project.[195]

Specifically, DCRT intends to utilize resources and support of Starwood Energy and Atlantica for financing, development, and planning, environmental, engineering, and construction services. DCRT also intends to rely on Starwood Energy affiliate to support necessary corporate support services, such as "payroll, taxes, shareholder services, insurance, financial reporting, financial planning and analysis, corporate accounting, corporate security, human

[195] Application, at 28.

resources (compensation, benefits, employment policies), employee records, regulatory affairs, lobbying, legal, [and] pension management."[196]

In addition, DCRT also intends to rely on its affiliates for information technology, compliance, business management and planning, treasury, integrated supply chain procurement, project management, and corporate oversight and management.

9.1. Sharing of Officers and Directors

DCRT requests limited exemptions from Sections V.C., V.E. and V.G. of the ATRs, asserting that DCRT will need "from time to time to utilize certain engineering, transmission operations, employee recruiting, and marketing services from its Starwood Energy affiliates..."[197]

Section V.C. of the ATRs provides, in pertinent part:

> A utility shall not share office space, office equipment, services, and systems with its affiliates, nor shall a utility access the computer or information systems of its affiliates or allow its affiliates to access its computer or information systems, except to the extent appropriate to perform shared corporate support functions permitted under Section V E of these Rules. Physical separation required by this rule shall be accomplished preferably by having office space in a separate building, or, in the alternative, through the use of separate elevator banks and/or security-controlled access. This provision does not preclude a utility from offering a joint service provided this service is authorized by the Commission and is available to all non-affiliated service providers on the

[196] An energy utility and its affiliates may share these corporate support services in accordance with the affiliate transaction rules. *Affiliate Transactions Rules*, Appendix A, Rule V.E., D. 98-08-035.

[197] Application, at 29.

same terms and conditions (*e.g.*, joint billing services pursuant to D.97-05-039).[198]

Section V.E. of the ATRs provides, in pertinent part:

As a general principle, a utility, its parent holding company, or a separate affiliate created solely to perform corporate services may share with its affiliates joint corporate oversight, governance, support systems and personnel. […] As a general principle, such joint utilization shall not allow or provide a means for the transfer of confidential information from the utility to the affiliate, create the opportunity for preferential treatment or unfair competitive advantage, lead to customer confusion, or create significant opportunities for cross-subsidization of affiliates.[199]

[…]

Examples of services that may not be shared include: employee recruiting, engineering, hedging and financial derivatives and arbitrage services, gas, and electrical purchasing for resale, purchasing of gas transportation and storage capacity, purchasing of electric transmission, system operations, and marketing.[200]

Section V.G. of the ATRs provides, in pertinent part:

Except as permitted in Section V.E. (corporate support), a utility and its affiliates shall not jointly employ the same employees. This Rule prohibiting joint employees also applies to Board Directors and corporate officers, except for the following circumstances: In instances when this Rule is applicable to holding companies, any board member or corporate officer may serve on the holding company and with either the utility or the affiliate (but not both).[201]

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[198] D.98-08-035, Appendix B (Appendix B), Section V.C.

[199] *Ibid*., at Section V.E.

[200] *Ibid*.

[201] *Id*., at Section V.G.

DCRT believes that the limited exemptions from Sections V.C. and V.E. are necessary to "utilize the expertise and resources of DCRT's affiliates, including: (i) development support from Starwood Energy and Atlantica; (ii) development, planning, engineering, and construction support from Starwood Energy, Atlantica, and its affiliates; (iii) certain corporate support services from various Starwood Energy and Atlantica affiliates, whose services might not otherwise be expressly permitted under Section V.E. of the affiliate transaction rules, such as information technology, compliance, business management and planning, treasury, integrated supply chain procurement, and corporate real estate; and (iv) oversight by shared corporate officers."[202]

In D.97-12-088, the Commission cited certain objectives for adopting the ATRs, including preventing cross-subsidization between a utility's customers and the affiliate's operations, protecting the use of customer-specific information, preventing consumer confusion between the affiliate and the regulated utility, and mitigating the use of market power.[203]

DCRT has the burden to demonstrate that circumstances warrant an exemption from the ATRs. DCRT asserts that granting the limited exemptions will not lead to the risks that the ATRs were designed to protect against.

First, the costs of the Proposed Project will be recovered solely through transmission rates as part of the CAISO TAC, following approval by the FERC, which has jurisdiction over rates for interstate transmission service and will not create a cross-subsidization risk that could impair competition. Since DCRT's ability to recover costs is subject to FERC approval through the ratemaking

[202] Application, at 29.

[203] D.97-12-088, at 11-13.

process, DCRT must implement its TO Tariff in a non-discriminatory manner and thus cannot exercise market power.[204]

Second, DCRT argues that its lack of retail customers or retail service prevents access to customer information or accounts and eliminates any "meaningful risk of consumer confusion" between DCRT and its affiliates. Since DCRT does not have any retail customers in California, there is no apparent risk of customer confusion or privacy violations.

In considering the Application and supplemental response, the Commission finds that DCRT has met its burden of showing that circumstances warrant a limited exemption from Sections V.C., V.E. and V.G. With oversight by FERC for approval of DCRT's transmission rates, there is no apparent risk of cross-subsidization that could impair competition. Because DCRT is subject to open access terms in the CAISO Tariff, we do not find evidence of the potential to exercise market power. Accordingly, the Commission grants DCRT limited exemptions from Sections V.C., V.E. and V.G. of the ATRs.

10. Electric and Magnetic Field

The Commission has examined EMF impacts in several previous proceedings, concluding that the scientific evidence presented in those proceedings was uncertain as to the possible health effects of EMFs.[205] Therefore, the Commission has not found it appropriate to adopt any related numerical standards. Because there is no agreement among scientists that exposure to EMF creates any potential health risk, and because CEQA does not define or adopt any standards to address the potential health risk impacts of possible exposure to

[204] DCRT Opening Brief, at 47.

[205] *See* D.06-01-042 and D.93-11-013.

EMFs, the Commission does not consider magnetic fields in the context of CEQA and the determination of environmental impacts.

However, recognizing that public concern remains, we do require, pursuant to GO 131-D, Section X.A, that all requests for a CPCN include a description of the measures taken or proposed by the utility to reduce the potential for exposure to EMFs generated by the proposed project.

We developed an interim policy that requires utilities, among other things, to identify the no-cost measures undertaken, and the low-cost measures implemented, to reduce the potential EMF impacts.

Here, DCRT filed a Field Management Plan as Appendix F to this Application, which details the EMF measures for the Proposed Project, including the (1) utilization of a typical horizontal 500 kV tower height of 165 feet;[206] (2) installation of 500 kV transposition towers near the locations of existing transposition towers for the SCE Colorado River-Palo Verde (CRPV), formally the Devers-Palo Verde No 1 (DPV1) 500 kV transmission line;[207] and (3) use of existing utility corridors. DCRT updated the Field Management Plan in accordance with Alternative 2-4D route and configuration, identified in the FEIS and incorporated the same as part of the MMs in the CEQA Appendix. On August 6, 2020, DCRT updated the Field Management Plan and identified the no cost EMF reduction measures to include (1) the utilization of typical conductor to ground clearance heights that exceed GO 95, Section III, Rule 37; and (2)

[206] Magnetic field models are based on both a 155-foot tower height and a 165-foot tower height. The 165-foot structures help to lower the magnetic field strength. *See* Application, *Field Management Plan for Ten West Link Transmission Project* (EMF Plan), Appendix F, at 118-120.

[207] Transposition towers are used to re-arrange the phase conductors on a transmission line; transposition structures enable magnetic field reduction as well as phase impedance equalization across the line route. EMF Plan, at 13.

optimization of phasing and transposing the Proposed Project with respect to the DPV transmission line, which will parallel the Proposed Project for most of its length.[208]

The record contains no other evidence or argument regarding EMF concerns. We adopt DCRT's proposed EMF reduction measures as stated in its Field Management Plan and require DCRT to comply with it.

11. Miscellaneous Issues

Intervenor compensation and safety considerations were two issues scoped in the First Scoping Memo. During the course of the proceeding, Conservation Group and CRIT have withdrawn from this proceeding, and TURN did not actively participate in this proceeding. Only Conservation Group and TURN filed Notices of Intent to Claim Intervenor Compensation. Therefore, the issue of guarantee of payments for intervenors' consultants and the costs of intervenor compensation is now moot.

No specific safety concern or consideration were raised. DCRT intends to operate in compliance with applicable rules, regulations, and standards governing safety, reliability, and competition.[209] The FEIS addressed public health and safety considerations, including fire, EMF, radio interference with military operations, and dust-related illness.[210] Appendix 2A of the FEIS sets

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[208] The Field Management Plan included as Appendix F to the Application filed in 2016 was superseded by the Detailed Field Management Plan, Revision B, dated August 6, 2020, which was based on the Preferred Alternative route and project configuration identified in the FEIS. The CEQA Appendix identifies development of the Field Management Plan as mitigation measure "MM EMF-CEQA-1" and requires that a Field Management Plan be submitted "at least 30 days prior to the start of construction." *Comments of DCR Transmission on the Proposed Decision Granting DCR Transmission, LLC a Certificate of Public Convenience and Necessity for the Ten West Link Project*, filed October 21, 2021 (DCRT Opening Comments) at 2.

[209] DCRT Opening Brief at 53.

[210] FEIS at 3-6, 4-9,

forth in the APM and BMP for construction and maintenance of the Proposed Project to address safety concerns and considerations.

In granting the CPCN, the Commission adopts the APM and BMP requirements and compels DCRT to implement the APM and BMP requirements set forth in Appendix 2A of the FEIS for construction and maintenance of the Proposed Project.

12. Comments on Proposed Decision

The proposed decision of ALJ Daphne Lee in this matter was mailed to the parties in accordance with Pub. Util. Code §311 and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed by DCRT, the CAISO and Cal Advocates on October 21, 2021, and reply comments were filed on October 26, 2021, by the same parties. Those comments were carefully evaluated. We were not persuaded by the comments to alter the outcome recommended in the proposed decision. Where appropriate, clarifying revisions responsive to the comments to the proposed decision have been made throughout the decision.

13. Assignment of Proceeding

Genevieve Shiroma is the assigned Commissioner and Daphne Lee is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. The Proposed Project is a 125-mile 500 kV single-circuit, series-compensated, transmission line spanning between the Delaney Substation (located just north of the Palo Verde generating plant in Tonopah, Maricopa County, Arizona) and the Colorado River Substation (located west of the Arizona-California border in Riverside County, California).

2. Spanning approximately 103.5 miles in Arizona and 21.5 miles in California, the proposed route of the Proposed Project largely follows the existing DPV 500 kV transmission line and utilizes the established utility corridor, crossing Federal land, including lands managed by the BLM, Reclamation, and the YPG.

3. The Proposed Project will have a conductor capacity to transmit 3,200 MW and provide interconnection capability for new energy projects located in the region.

4. The CAISO Board, in the 2013-2014 TPP, approved the Proposed Project to provide economic benefits for California ratepayers.

5. In its updated analysis prepared for this proceeding, based on the TEAM approach, the CAISO ran two different PCM scenarios: 1) Baseline Scenario and 2) Sensitivity Scenario with updated natural gas and carbon prices.

6. CAISO's TEAM approach provided an estimated range of annual savings of $62-93 million and broken down into 1) CAISO production cost annual savings of $41-70 million; 2) Reduction in annual transmission energy losses of $3-4 million; 3) Reduction in annual renewable curtailments of $0.3-0.9 million; and 4) Increase in annual renewable procurement of $18 million per year.

7. The production cost benefit for the Proposed Project includes three benefits to CAISO ratepayer: consumer energy cost decreases; increased LSE-owned generation revenues; and increased transmission congestion revenues. Based on these findings, the CAISO Board approved the Proposed Project in its 2013-2014 TPP, and the CAISO presented additional evidence of continuing economic benefits from the Proposed Project.

8. The CAISO's updated economic evaluation projected the BCR for the Proposed Project to range from 1.16 to 1.54 in the baseline analysis using the

avoided cost of battery storage to quantify capacity benefits. In the higher gas price sensitivity, the range of BCR increased from 1.48 to 1.89 using the same avoided cost of battery storage to quantify capacity benefits. Using the locational renewable cost savings to calculate capacity benefits, the CAISO projected the BCR to range from 1.00 to 1.56.

9. In July 2015, the CAISO selected DCRT, as the approved project sponsor for the Proposed Project, to develop, permit, design, finance, build, own, operate and maintain the Proposed Project in accordance with the CAISO tariff.

10. The Commission recommends portfolios from the ongoing IRP process for the CAISO's annual TPP cycle.

11. In evaluating the economic benefits of the Proposed Project, the CAISO applied portfolios adopted and recommended by the Commission for the TPP of the current year.

12. When evaluating the Proposed Project, the CAISO concluded that the quantified economic and reliability benefits exceeded estimated costs. The CAISO also found additional potential benefits to include: (1) Mitigating the impacts of higher contingency flows on neighboring systems; (2) Providing opportunities for CAISO-connected renewable generation to develop in the Delaney area; (3) Providing an increase in deliverability from the Imperial Valley zone; and (4) Increasing competition in the California generation market.

13. In 2019, the CAISO updated the economic assessment in three steps: (1) resource portfolios are developed based on the portfolios from the Commission's RESOLVE models; (2) the resource portfolios are then used to conduct production cost simulation and production benefit analysis, while using the 2019-2020 TPP with the resource portfolio is used to conduct the production cost simulation; and (3) using the results of the first two steps, the BCR for the

Proposed Project was calculated based on the estimated 2021 in-service date of the Proposed Project.

14. The CAISO's updated economic evaluation considered the following specific major changes in circumstances that have occurred since the CAISO initially approved the Proposed Project: (1) Continued growth of grid-connected solar generation, in excess of the level anticipated in the 2013 timeframe; (2) Rapid deployment of distributed energy resources, *e.g.*, rooftop solar PV, far exceeding industry expectations; (3) Decreasing battery storage costs; (4) Reducing out-of-state thermal fleet, including out-of-state coal resources; (5) Meeting LSE requirements under SB 100; (5) Accepting natural gas resources as a key resource with dispatchable capacity and critical to ensure reliability into the future, despite far less overall energy production; and (6) Advancing generation and transmission planning and development processes.

15. The CAISO believes 3262 MW of Arizona Solar can be economically selected to meet the renewable policy target and provide ratepayer production cost benefits.

16. The CAISO calculated $290.3 million in terms of present value or $17.3 million in terms of levelized annual benefits in the battery capacity benefit.

17. If the Proposed Project is not built, the CAISO calculated that the equivalent of 969 MW, or 29.7 percent of the economically-selected Arizona Solar capacity, will have to come from renewables located in less economic locations.

18. The CAISO, through the updated economic evaluation, projected the total production cost benefits to be $33.6 million annually.

19. The CAISO expects the Proposed Project will increase the amount of cost-effective, out-of-state resources in the Southwest, towards RA, from the

CAISO grid-connected solar and solar-storage hybrid resources in western Arizona.

20. The CAISO's baseline scenario applied monthly natural gas price differential between Arizona South and Southern California between $0.581 to 0.597, similar to the lower end of the price differential referenced by Cal Advocates.

21. The CAISO considered the uncertainty of future systems in solar generation, in natural gas pricing and the utility-size battery costs, along with market conditions affecting the likelihood that the Proposed Project's benefits will be realized.

22. The CAISO considered alternative interconnection projects and the Palo Verde intertie when determining the economic benefits of the Proposed Project.

23. The CAISO Board made explicit findings regarding the economic value of the Proposed Project; specifically, the CAISO found quantifiable capacity and production cost benefits with reliability benefits from the Proposed Project in the baseline and sensitivity scenarios to concluded that the Proposed Project provided economic and public policy benefits.

24. The CAISO Board-approved evaluation was presented to the Commission as part of the evidence for this proceeding.

25. Based on a combination of information from the Brattle Report and three different PCM scenarios, DCRT anticipates: 1) Projected annual savings between $7 million to $36 million; 2) Reduction in curtailment of renewable generation by increasing operational flexibility of the CAISO system; 3) Increased options to integrate and access renewable energy resources to achieve the goals to reduce GHG; and 4) Increased reliability of the California and Arizona transmission network by increasing reliable power transfers in the region.

26. Although DCRT's scenarios did not analyze the impact on renewable generation interconnection, DCRT accounted for transmission congestion due to intertie scheduling limits on the CAISO's neighboring markets and additional congestion on the Palo Verde intertie during peak and overnight hours.

27. DCRT concluded that the Proposed Project will 1) increase transfer capability by 690 MW between California and Arizona, when all lines are operational; 2) allow an additional 781 MW generation to the Delaney Substation and output to southern California; and 3), transfer an additional 219 to 257 MW between Arizona and California under transmission outage conditions.

28. DCRT concluded the following economic benefits from the Proposed Project: 1) Reduced production costs and CAISO customer net payments; 2) Reduced energy losses; 3) Increased competition at the Palo Verde trading hub; 4) Increased transmission transfer capability between CAISO and APS in the EIM; and 5) Reduced RA costs.

29. DCRT anticipates the following public-policy benefits: 1) Increase the transfer capability across the Palo Verde intertie and reduce congestion and customer costs in California; 2) Unload energy across highly utilized transmission lines to reduce energy loss, while encouraging further development of RA to connect to the Palo Verde hub to increase competition and meet RA goals for California; and 3) Expand the BAA for CAISO and APS so that both can benefit from the EIM, in addition the estimated production cost benefits.

30. Cal Advocates provided no new modeling and adjusted assumptions on solar PV development, natural gas pricing and battery capacity costs based on the Commission's portfolio from the 2019 IRP process and, thus, was not provided to the CAISO when updated economic evaluation was performed.

31. With the 2019-2020 IRP assumptions, Cal Advocates calculated a BCR between 0.55 to 0.73 and concluded that the Proposed Project, even under Cal Advocates' calculation, will result in benefits to California ratepayers, even if it is less than anticipated by CAISO and DCRT.

32. The CAISO posted the unified planning assumptions and study plan in draft form for stakeholder review and comment and provided an opportunity to stakeholders to request specific economic planning studies to assess the potential economic benefits (e.g., congestion relief) in specific areas of the grid.

33. The economic evaluation by the CAISO was submitted as part of the Application, in Appendix M and within sufficient time to be included in the scope of this proceeding.

34. DCRT submitted additional economic and public policy analysis and provided an explanation of the additional information's impact on the assumptions and conclusions contained in the economic evaluation from both DCRT and the CAISO.

35. The CAISO Board-approved evaluation is consistent with the safeguards, principles and minimum requirements set forth in D.06-11-018.

36. The CAISO Board approval of the updated economic evaluation is unnecessary to meet the minimum requirements under D.06-11-018.

37. The CAISO's use of the portfolios from the 2017 IRP process for the economic evaluation aligns with the transmission planning coordinated between the Commission, CAISO, and CEC.

38. The Interconnection Queue consists of interconnection requests from developers, which are regularly updated as developers complete, withdraw, or downsize their projects. The Project List identifies all the current generator requests seeking interconnection to the CAISO system.

39. Given the uncertainties and the dynamic nature of the information, the Commission finds little value in the Interconnection Queue and the Project List towards the Commission's assessment of the need for the Proposed Project.

40. The Commission weighed the economic and public policy benefits against the cost of the Proposed Project to determine the cost effectiveness of the Proposed Project.

41. BLM, as the lead agency under NEPA, prepared the FEIS in September 2019, and issued a ROD for the Proposed Project on November 22, 2019.

42. The Commission, through its consultant, prepared the CEQA Appendix, attached to the FEIS, to supplement the environmental review required under CEQA.

43. The FEIS, including its CEQA Appendix, concluded that Alternative 2-4D was the environmentally superior alternative and minimized impacts on the environment and ESJ communities.

44. The Commission received, reviewed, and considered the information contained in the FEIS with the CEQA Appendix.

45. The Proposed Project will not have any significant or unavoidable impacts that cannot be mitigated to a less-than-significant level with the MMs identified in the CEQA Appendix of the FEIS.

46. In California, the ESJ communities impacted are located within Riverside County, with a minority population of 61.7 percent, which is 1.5 percent greater than the state percentage. The city of Blythe and surrounding area have a minority population of 70 percent with about 24 percent being low-income. Ripley, which is south of Blythe, has a 95 percent minority population with the highest low-income population at 33.7 percent.

47. In Riverside County, the land within half a mile of the Proposed Project is used for commerce, recreation, residence, and agriculture.

48. The Proposed Project will impact a disproportionate number of the ESJ communities on a localized basis from construction, operation, and maintenance of the Proposed Project, due to the high percentage of minority population in Riverside County. These impacts would include construction noise and other disruptions and impacts to visual resources and property values during operations. However, any impact would likely be negligible to minor due to the predominantly low-density rural setting and the presence of existing transmission and utility lines nearby.

49. The MMs for the Proposed Project will reduce the impacts to the ESJ communities to less than significant level.

50. The construction of the Proposed Project is expected to have some positive economic impacts to the affected ESJ communities.

51. Pursuant to CEQA Guidelines 15225(a), the Commission's Energy Division noticed the ALJ and the official service list of this proceeding, that the Commission will use the FEIS, including the CEQA Appendix, in the place of an EIR.

52. The FEIS discusses community values and recreation and park areas along with the CEA. Local communities rely upon the CEA to draw visitors to support the local economy. In the long term, the main unavoidable adverse effect is increased development in natural areas heavily used for recreation. The reasonably foreseeable future actions on the undeveloped areas will have a minor cumulative effect on the recreation experience, the availability of primitive or unconfined recreational settings, and the solitude in the CEAs.

53. The impacts to recreation and recreation areas, related to noise, dust, visual disturbance and restricted access during construction, will be localized and short-term.

54. The reduction in recreation users coming to the area should be minor, as most users will likely move to other nearby locations not impacted by construction activities.

55. Ongoing operations and maintenance will have little or no long-term effect on the tourism- and recreation-related economy.

56. The Proposed Project will neither cause existing housing or persons to be displaced nor necessitate the construction of replacement housing elsewhere.

57. As growth has been accounted for in various local and regional plans and projections, cumulative impacts from construction workers on the local housing market are negligible to moderate during Project construction. The Proposed Project, in conjunction with reasonably foreseeable energy, utility, and other infrastructure projects, could support population increases in the area in the foreseeable future.

58. The Commissioner's Third Amended Scoping Memo did not materially change Issue 8 of the First Scoping Memo; and Issue H of the Third Amended Scoping Memo clarified Issue 8 of the First Scoping Memo.

59. DCRT will be a transmission-only utility with no retail customers, owning and operating a single high voltage direct current transmission line service.

60. DCRT will be under the operational control of CAISO with rates and terms and conditions of service set by the FERC.

61. GO 65-A requires utilities with more than $200,000 in annual gross operating revenue to file with the Commission a copy of each financial statement prepared in the normal course of business which shows its operating results and

financial condition, and also a copy of its annual report and other financial statements issued to its stockholders.

62. GO 77-M requires utilities with more than $500,000 in annual gross operating revenue to annually file with the Commission a statement identifying titles and duties and all compensation of executive officers and all employees who earn more than $85,000 annually.

63. GO 104-A requires utilities with more than $50,000 in annual gross operating revenue to annually file with the Commission a report identifying persons with financial interest in the utility based upon contracting with the utility or services provided to the utility or ten percent or more of voting power in the utility.

64. FERC Form 1 requires FERC-regulated utilities to file with FERC an annual financial statement including any statement to stockholders, a balance sheet, and statements of income, retained earnings, cash flows, and related information. Among its individual components is the duty to identify the name, title, and salary of every executive officer making $50,000 or more annually.

65. FERC Form 3-Q is very similar to FERC Form 1 but is intended to supplement information to be provided in Form 1 and is filed quarterly.

66. FERC Forms 1 and 3-Q provide financial and other information similar to the information necessarily provided through GOs 65-A and 104-A.

67. GO 77-M would provide the Commission with information not contained in FERC Forms 1 and 3-Q, and, therefore, FERC Forms 1 and 3-Q would not suffice as proxies to convey the information that would have been found in a properly completed GO 77-M filing.

68. DCRT's filing with the Commission of completed and accurate FERC Forms 1 and 3-Q instead of the filing required under GOs 65-A and 104-A would

not interfere with, alter, or negatively impact the Commission's regulatory authority over DCRT, and may enhance the Commission's interests.

69. DCRT's filing with the Commission of completed and accurate FERC Forms 1 and Form 3-Q in lieu of reports required under GOs 65-A and 104-A would not reduce DCRT's safety or electrical service reliability.

70. DCRT intends to utilize resources and support of Starwood Energy and Atlantica 1) for financing, development and planning, environmental, engineering, and construction services; 2) to support necessary corporate support services, such as payroll, taxes, shareholder services, insurance, financial reporting, financial planning and analysis, corporate accounting, corporate security, human resources (compensation, benefits, employment policies), employee records, regulatory affairs, lobbying, legal, and pension management; and 3) for information technology, compliance, business management and planning, treasury, integrated supply chain procurement, project management, and corporate oversight and management.

71. Since DCRT's ability to recover costs is subject to FERC approval through the ratemaking process, the limited exemption from sections V.C., V.E. and V.G. of the ATRs will not create a cross-subsidization risk that could impair competition because DCRT must implement its TO Tariff in a non-discriminatory manner and thus cannot exercise market power.

72. Since DCRT does not have any retail customers in California, there is no apparent risk of customer confusion or privacy violations.

73. DCRT submitted a Field Management Plan as Appendix F to the Application, which details the EMF reduction measures for the Proposed Project, including the (1) utilization of a typical horizontal 500 kV tower height of 165 feet; (2) installation of 500 kV transposition towers near the locations of

existing transposition towers for the SCE Colorado River-Palo Verde (CRPV), formally the DPV 500 kV transmission line; and (3) use of existing utility corridors.

74. DCRT updated the Field Management Plan in accordance with Alternative 2-4D route and configuration as identified in the FEIS and incorporated as part of the MMs in the CEQA Appendix.

75. On August 6, 2020, DCRT updated the Field Management Plan and identified the no cost EMF reduction measures to include (1) the utilization of typical conductor to ground clearance heights that exceed GO 95, Section III, Rule 37; and (2) optimization of phasing and transposing the Proposed Project with respect to the DPV transmission line, which will parallel the Proposed Project for most of its length.

76. All intervenors who filed a Notice of Intent to Claim Intervenor Compensation either withdrew from the proceeding or did not actively participate in this proceeding.

77. No specific safety concerns or considerations were raised. The FEIS addressed public health and safety considerations, including fire, EMF, radio interference with military operations, and dust-related illness. Appendix 2A of the FEIS sets forth in the APM and BMP for construction and maintenance of the Proposed Project to address safety concerns and consideration.

Conclusions of Law

1. DCRT should be granted a certificate of public convenience and necessity for the Proposed Project, to construct 125-mile, series-compensated 500 kV transmission line with a conductor capacity of approximately 3200 MW between the Colorado River 500 kV substation, owned by SCE, and Delaney 500 kV substation, owned by APS; and this CPCN should be conditioned upon DCRT's

compliance with (a) the Mitigation Monitoring and Reporting Plan attached to this decision; (b) the EMF Field Management Plan filed as updated pursuant to the FEIS and based on the Alternative 2-4D route and configuration; (c) the APM and the BPM attached as Appendix 2A of the FEIS; and (d) all other necessary state and local permitting processes and approvals.

2. The Application and subsequent filings by the Applicant in support of the Application comply with Rule 3.1 and GO 131-D.

3. DCRT should be excused from compliance with Rule 3.1(i).

4. The CAISO Board-approved evaluation engaged in public participation with at least two meetings with sufficient time for stakeholders and the public to review the unified planning assumptions and study plan in draft form and an opportunity for stakeholders to request specific economic planning studies to assess the potential economic benefits in specific areas of the grid.

5. The CAISO Board-approved evaluation met the four safeguards set forth in D.06-11-018 by 1) posting the draft unified planning assumptions and study plan with opportunities to request additional information and engaging in a series of stakeholder and public meetings for comments, prior to Board approval, to meet the public participation requirements; 2) filing the Application with Appendix M, the 2013-2014 TPP, filed on July 16, 2014, DCRT, which addressed the comments from the stakeholders; 3) DCRT submitted its own economic evaluation and explained the impacts that the evaluation had on the assumptions and conclusions; and 4) the CAISO was a party to the proceeding.

6. The CAISO Board-approved evaluation had explicit findings which are consistent with the principles and minimum requirements set forth in D.06-11-018 and was filed to the Commission within sufficient time to be included within the scope of this proceeding.

7. The CAISO's original and updated economic evaluation comply with the principles and minimum requirements under D.06-11-018 and should be presumed reliable as determination of the necessity and cost-effectiveness of the Proposed Project.

8. The Proposed Project is needed and meets the requirements under Pub. Util. §1001 et seq.

9. The Proposed Project promotes present or future safety, health, comfort, and convenience of the public to necessitate such construction.

10. The Proposed Project is cost effective.

11. Cal Advocates failed to meet its burden to rebut the presumption afforded to CAISO's economic evaluation.

12. The FEIS and its CEQA Appendix for the Proposed Project, including associated impacts and mitigations, were reviewed and are sufficient for our decision-making purposes concerning the associated environmental impacts.

13. The FEIS did not find any significant and unavoidable environmental impacts.

14. DCRT should adopt the environmentally superior alternative identified as Alternative 2-4D for the route of the Proposed Project to minimize impacts on the environment and the ESJ communities.

15. The Proposed Project, with implementation of the MMs, will have less than significant impact on the community values, recreational and park areas, historical and aesthetic values and the environment, pursuant to Pub. Util. Code §1002.

16. The FEIS is completed in compliance with CEQA requirements and reflects the Commission's independent judgment and analysis on all material matters and is adequate for Commission decision-making purposes.

17. The Commission should adopt all mitigation measures detailed in the FEIS and the CEQA Appendix.

18. The Commission should certify that the FEIS with the CEQA Appendix as adequate environmental document meeting the requirements under CEQA.

19. The Proposed Project aligns with the Commission's ESJ Action Plans goals.

20. For the Proposed Project, configured as Alternative 2-4D, the reasonable and prudent maximum cost cap is $389,045,968, including contingency.

21. DCRT should be authorized to submit properly completed FERC Forms 1 and Forms 3-Q as approximate proxies for the information it would otherwise submit to the Commission under GOs 65-A and 104-A filings.

22. DCRT should not be excused from its reporting duties under GO 77-M and should not be authorized to submit properly completed FERC Forms 1 and Forms 3-Q in lieu of GO-77 filing, because the information that would be directly conveyed to the Commission through those forms is not equivalent to all the information conveyed through a properly completed and filed GO 77-M filing.

23. DCRT should be granted limited exemptions from Sections V.C., V.E. and V.G. of the ATRs for the purpose of utilizing resources and support of Starwood Energy and Atlantica for financing, development and planning, environmental, engineering, and construction services and to support necessary corporate support services, such as payroll, taxes, shareholder services, insurance, financial reporting, financial planning and analysis, corporate accounting, corporate security, human resources (compensation, benefits, employment policies), employee records, regulatory affairs, lobbying, legal, and pension management.

24. DCRT's Field Mitigation Plan and the proposed EMF reduction measures identified therein are reasonable.

25. DCRT's proposed EMF reduction measures as stated in its Field Management Plan should be adopted.

26. DCRT should be ordered to comply with its Field Mitigation Plan and implement its proposed no-cost and low-cost measures, as updated pursuant to the FEIS and based upon Alternative 2-4D route and configuration.

27. The issue of guarantee of payments for intervenors' consultants and costs of intervenor compensation is now moot and need not be decided.

28. The APM and BMP requirements should be adopted, and DCRT should implement the APM and BMP requirements set forth in Appendix 2A of the FEIS for construction and maintenance of the Proposed Project.

29. Motions made in this proceeding that have not been expressly ruled upon should be deemed denied.

30. This proceeding should be closed.

O R D E R

IT IS ORDERED that:

1. DCR Transmission, LLC (DCRT) is granted a certificate of public convenience and necessity to construct the Ten West Link Transmission Line Project, configured with Alternative 2-4D and conditioned upon DCRT's compliance with (a) the Mitigation Monitoring and Reporting Plan attached to this decision; (b) the Electric and Magnetic Fields Field Management Plan filed as updated pursuant to the Final Environmental Impact Statement and based on the Alternative 2-4D route and configuration; (c) the DCRT's Proposed Measures for Safety and the BLM's Required Best Management Practices attached as Appendix 2A of the FEIS; and (d) all other necessary state and local permitting processes and approvals.

2. The Commission's Energy Division may approve requests by DCR Transmission, LLC (DCRT) for minor project refinements that may be necessary due to final engineering of the environmentally superior project, so long as such minor project refinements are located within the geographic boundary of the study area of the Final Environmental Impact Statement (FEIS) and do not, without mitigation, result in a new significant impact or a substantial increase in the severity of a previously identified significant impact based on the criteria used in the FEIS; conflict with any mitigation measure or applicable law or policy; or trigger an additional permit requirement. DCRT shall seek any other project refinements by a petition to modify today's decision.

3. DCR Transmission, LLC shall work with the Commission's Energy Division to create detailed maps for use in construction and mitigation monitoring.

4. The Final Environmental Impact Statement for Ten West Link Transmission Line Transmission Line Project is certified.

5. The maximum cost cap for the Ten West Link Transmission Line Project, configured with Alternative 2-4D is $389,045,968, including contingency.

6. Pursuant to Public Utilities Code Section 1005.5(b), at any point during the Ten West Link Transmission Line Project construction and prior to any expenditures in excess of the maximum reasonable and prudent cost determined in this decision, DCR Transmission, LLC must file a formal Petition for Modification with the Commission for consideration of a revised determination of the reasonable and prudent maximum cost of the Project.

7. DCR Transmission, LLC (DCRT) shall make quarterly information-only submittals to the Commission's Energy Division's CEQA and Federal Energy Regulatory Commission (FERC) Electric Costs teams providing status updates on

the Ten West Link Transmission Project. These status updates shall include, at minimum:

a. Comprehensive project development schedule (with data organized by month), including estimated project in-service date;
b. Any changes in project scope and schedule, including the reasons for such changes;
c. Any engineering difficulties encountered in constructing the project;
d. Total estimated project costs;
e. Actual spending to date;
f. Any and all filings submitted to FERC for ultimate cost recovery through transmission rates; and
g. Any additional information DCRT believes relevant and necessary to accurately convey the status of the project.

8. Upon satisfactory completion of the Ten West Link Transmission Line Project, DCR Transmission, LLC shall file a notice of completion with the Executive Director by the Energy Division.

9. In lieu of filing reports in compliance with General Order 65-A, DCR Transmission, LLC is authorized instead to file copies of its Federal Energy Regulatory Commission Form 1 with the Commission.

10. In lieu of filing reports in compliance with General Order 104-A, DCR Transmission, LLC is authorized instead to file copies of its Federal Energy Regulatory Commission Form 3-Q with the Commission.

11. DCR Transmission, LLC must file with the Commission reports in compliance with General Order 77-M.

12. The Commission may rescind the authorization granted in paragraphs 9 and 10 above upon 60-day notice to DCR Transmission, LLC.

13. Except as otherwise ordered here, DCR Transmission, LLC must be fully compliant with every and all applicable Commission regulations and requirements.

14. DCR Transmission, LLC is granted limited exemptions from Sections V.C., V.E. and V.G. of the Affiliate Transaction Rules for the purpose of DCR Transmission, LLC using the expertise of Starwood Energy Group Global, Inc., and its affiliates.

15. All pending motions that have not been expressly ruled upon are deemed denied.

16. Application 16-10-012 is closed.

This order is effective today.

Dated November 4, 2021, at San Francisco, California.

MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
GENEVIEVE SHIROMA
DARCIE HOUCK
Commissioners

President Marybel Batjer,
being necessarily absent, did not
participate.

Real Property & Asset Management Committee

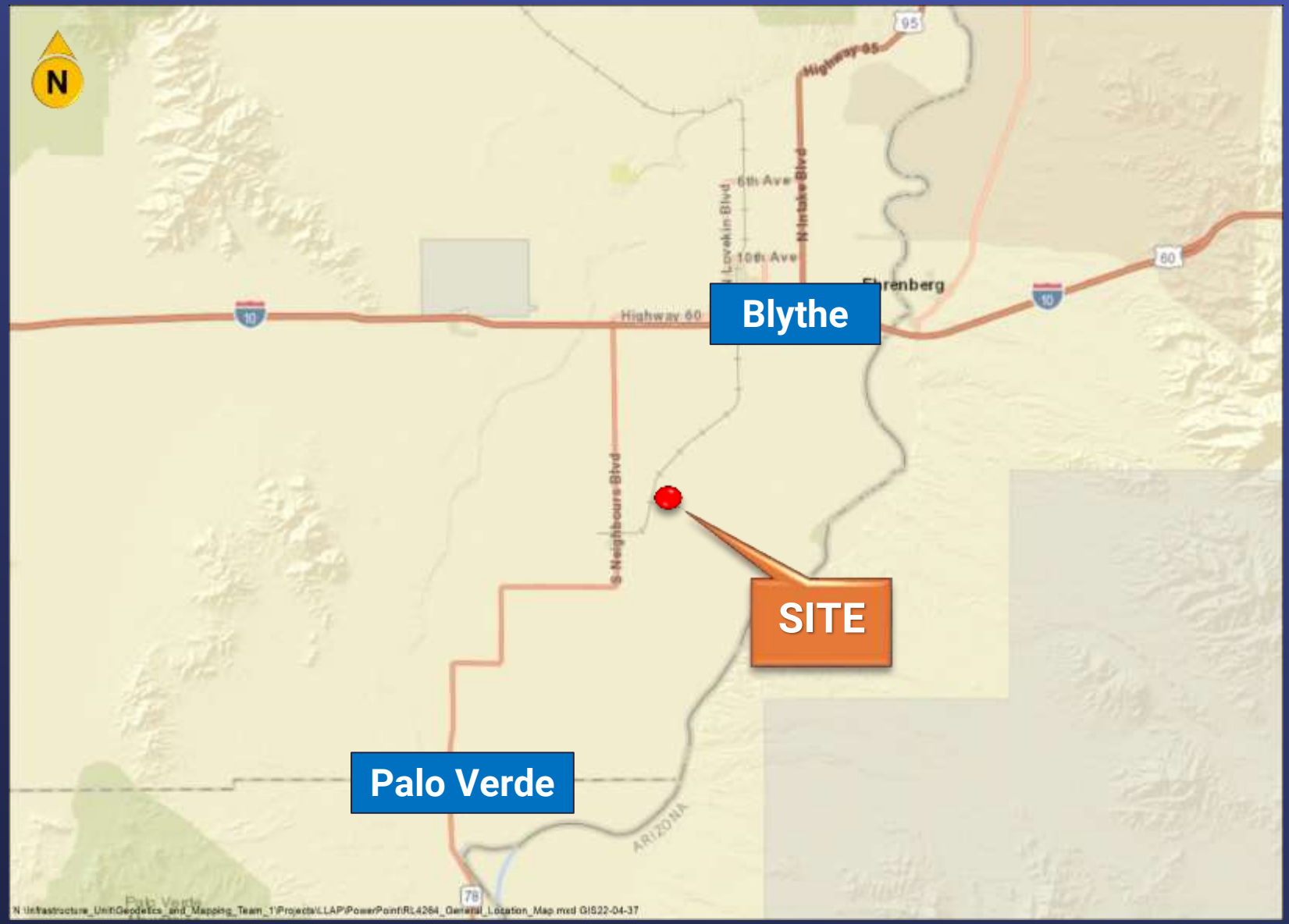
Authorize a Permanent Easement to DCR Transmission, LLC

Item 7-11

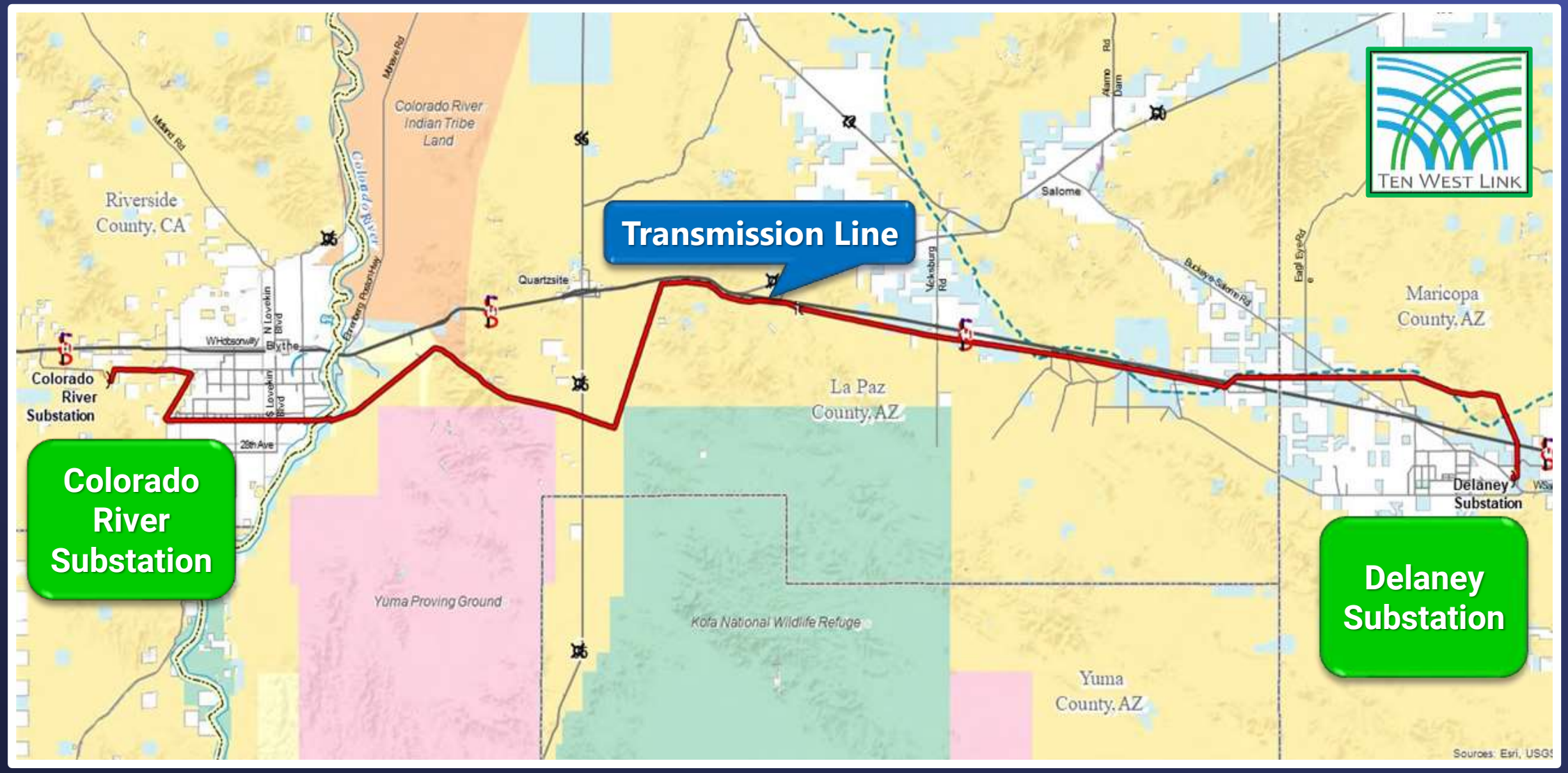
June 13, 2022

Service Area and CRA

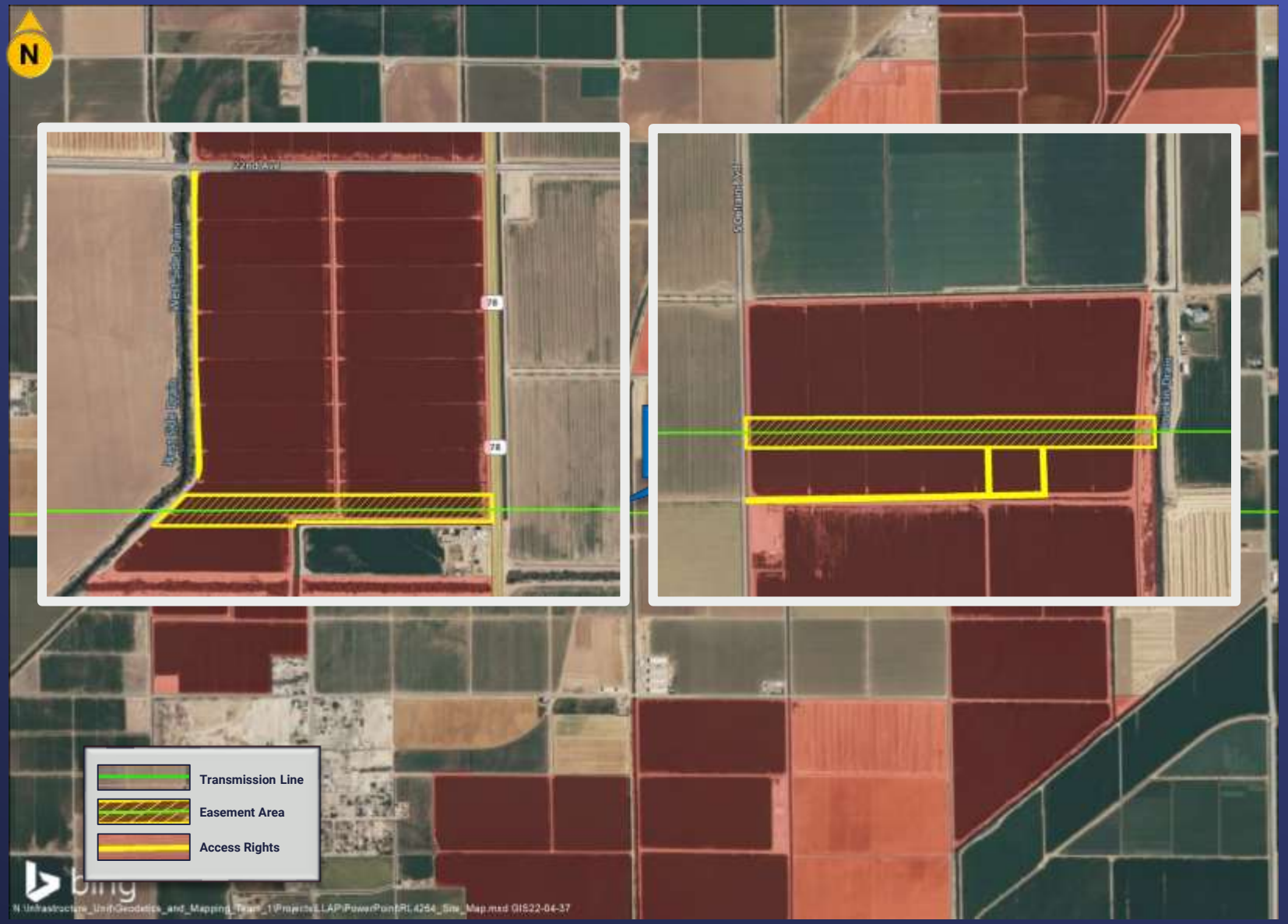
General Location Map



DCR Transmission, LLC



Site Map



Key Provisions

- Construction, operation and maintenance of a 500kV transmission line
- Paramount rights for water related purposes
- DCRT shall have the right to sell, assign, and convey
- DCRT shall compensate farmer for any crop losses
- Total easement value and fees: $324,500

Board Options

Option No. 1

Review and consider the Bureau of Land Management's Final Environmental Impact Statement certified to satisfy CEQA and take related CEQA actions; and authorize the General Manager to grant a permanent transmission line easement to Delaney Colorado River Transmission, LLC

Option No. 2

Do not authorize the permanent easement

Board Options

Staff Recommendation

Option No. 1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- **Board of Directors**
  Real Property and Asset Management Committee

6/14/2022 Board Meeting

7-12

Subject

Review and consider the Lead Agency's adopted Mitigated Negative Declaration and take related CEQA actions, and adopt a resolution for Calleguas Municipal Water District Annexation No. 104 to Calleguas and Metropolitan

Executive Summary

This action grants approval for an annexation requested by Calleguas Municipal Water District (Calleguas) and authorizes collecting Metropolitan's water standby charge and ad valorem tax. This request is compliant with current policy and requirements. This annexation request consists of approximately 10.72 acres with 0.24 acres of public roads, leaving a net area of 10.48 acres as the basis for the annexation charge **(Attachment 1)**. The new water demand from Metropolitan ranges from 20.20 to 24.24 acre-feet per year (AFY). Calleguas meets the demand management measures in the agency's Water Use Efficiency Statement of Compliance **(Attachment 2)**. The charge for this annexation, if completed in 2022, is $74,220.40, which includes a $5,000 processing fee.

Details

Background

On February 2, 2022, Calleguas' board of directors adopted Resolution No. 2038, requesting formal terms and conditions for annexation and collection of water standby charge for the proposed Calleguas Annexation No. 104. The proposed annexation will extend the service area of Metropolitan and Calleguas. The parcel is a 10.72-acre property identified as APN: 145-0-232-010, located at 2714 East Vineyard Avenue in the city of Oxnard. The area will be developed with a two-story office building and parking with 167 condominiums and widening of Vineyard Avenue.

The proposed area after annexation will be served by the city of Oxnard and will be eligible for imported water through Calleguas and Metropolitan. The charge for this annexation is $74,220.40, which includes the $5,000 processing fee collected at the time of the initial annexation request; the balance is payable prior to completion. The annexation charge is calculated based on the 2022 per-acre fee of $6,605. If the annexation is not completed in the calendar year 2022, the fee would be based on the then-current annexation rate pursuant to Section 3300 of Metropolitan's Administrative Code. Pursuant to Section 3107 of Metropolitan's Administrative Code, approved November 6, 2018, Calleguas has submitted an acceptable Water Use Efficiency Statement of Compliance for this annexation project **(Attachment 2)**. The projected water demand from Metropolitan is estimated to be between 20.20 and 24.24 AFY. Completion of this annexation would be subject to such terms and conditions as may be fixed by Metropolitan's Board in granting final consent to such annexation, including the Local Agency Formation Commission conditioning approval of the proposed annexation upon a requirement that all previously established and collected taxes, benefit assessments, or property-related fees or charges be established and collected on parcels being annexed to Metropolitan. This action adopts a resolution consenting to Calleguas' request for annexation with water standby charge as set forth in **(Attachment 3)**. Upon completion of the annexation, the lands within Calleguas Annexation No. 104 will be subject to Metropolitan's ad valorem property tax in the current amount of 0.0035 percent of the assessed valuation of each parcel and Metropolitan's water standby charge collected on behalf of Calleguas in the current amount of $9.58 per acre, or per a parcel of less than one acre.

Policy

Metropolitan Water District Administrative Act Section 350: Annexation of Corporate Area of Agency

Metropolitan Administrative Code Section 3100: Request for Annexation

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Pursuant to the provisions of CEQA and the State CEQA Guidelines, the city of Oxnard, acting as the Lead Agency and subagency to Calleguas, adopted the Rio Urbana Project (also known as Calleguas Annexation No. 104) Mitigated Negative Declaration (MND) on March 4, 2020, for the annexation process. Metropolitan, as a Responsible Agency under CEQA, is required to certify that it has reviewed and considered the information in the 2019 MND and adopt the Lead Agency's findings prior to approval of the formal terms and conditions for the annexation. The environmental documentation is in **Attachment 4**.

CEQA determination for Option #2:

None required

Board Options

Option #1

Review and consider the Lead Agency's adopted 2019 Mitigated Negative Declaration and take related CEQA actions, and adopt a resolution for the Calleguas Annexation No. 104 concurrently to Calleguas Municipal Water District and Metropolitan

Fiscal Impact: Receipt of annexation fee of $74,220.40 for the annexation area and water sales revenue from the newly annexed territory.

Business Analysis: This annexation will provide the ability for water service and associated benefits to the property owner. The initial fixed and variable costs will be borne by the local water supplier and property owners, including processing, infrastructure, and the cost of raw and treated water. This annexation helps to meet Metropolitan's member agency request.

Option #2

Decline the request for the proposed Calleguas Annexation No. 104.

Fiscal Impact: Unrealized annexation fee and water sales revenue from non-annexed areas.

Business Analysis: The subject area will not receive the direct benefits of water supplied through Calleguas and Metropolitan.

Staff Recommendation

Option #1

5/23/2022
Lilly L. Shraibati *Date*
Manager, Real Property Group

6/2/2022
Adel Hagekhalil *Date*
General Manager

Attachment 1 – Annexation No. 104 Map and Legal Description

Attachment 2 – Annexation No. 104 Water Use Efficiency Statement of Compliance

Attachment 3 – Annexation No. 104 Resolution

Attachment 4 – Annexation No. 104 Environmental Documentation

Ref# rpdm12686974

The Metropolitan Water District
of Southern California
Geodetics & Mapping Team
ANNEXATION - CONDITIONAL REV
Reviewer: SCL Date: 2/28/22

EXHIBIT A

CALLEGUAS MUNICIPAL WATER DISTRICT ANNEXATION No. 104

LEGAL DESCRIPTION

That portion of Lot 90 of the Rancho Santa Clara Del Norte, in the County of Ventura, State of California, as shown on the map recorded in the Office of the County Recorder of said Ventura County, in Book 3, Page 26 of Miscellaneous Records (Maps), described as follows:

Beginning at the northwesterly terminus of the 2nd course of Parcel A of Annexation No. 69-19 (Cohn) to the City of Oxnard, as filed with the Secretary of State of said State, on August 11, 1969, said northwesterly terminus also being in the 11th course of Annexation No. 68-2 (Andrews) to the City of Oxnard, as filed with said Secretary of State, on August 5, 1968, said Point of Beginning also being the northwesterly terminus of the 2nd course of Parcel 10-A of Annexation No. 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water District, as recorded in the Office of said County Recorder in Book 3579, Page 129 of Official Records, last said terminus also being the 11th course of Parcel 31 of said Annexation No. 7; thence along said 11th course of Annexation No. 68-2, and along said 11th course of Parcel 31, and continuing along the boundaries of said city and said district the following three courses:

1st- North 32°47'56" East 574.78 feet; thence,

2nd- South 49°42'28" East 35.30 feet; thence,

3rd- North 32°47'56" East 30.00 feet to the intersection with the northeasterly line of said Lot 90; thence, leaving said city and said district boundaries, along said northeasterly line of Lot 90,

4th- South 49°42'28" East 857.66 feet to the intersection with the northwesterly line of the Cloverdale Subdivision, as shown on the map recorded in the Office of aid County Recorder, in Book 8, Page 38 of Miscellaneous Records (Maps); thence along said northwesterly line,

5th- South 40°18'10" West 492.55 feet to said city and said district boundaries, being the southeasterly terminus of said 2nd course of Parcel A and the southeasterly terminus of said 2nd course of Parcel 10-A; thence, along the boundaries of said city and said district,

6th- North 57°12'04" West 821.00 feet to the Point of Beginning.

As shown on Exhibit B attached hereto and made a part hereof.

Gross	10.72 Acres
-Road	0.24 Acres
Net	10.48 Acres

Larry Frager 2/24/22

Larry J. Frager P.L.S. 7998 Date

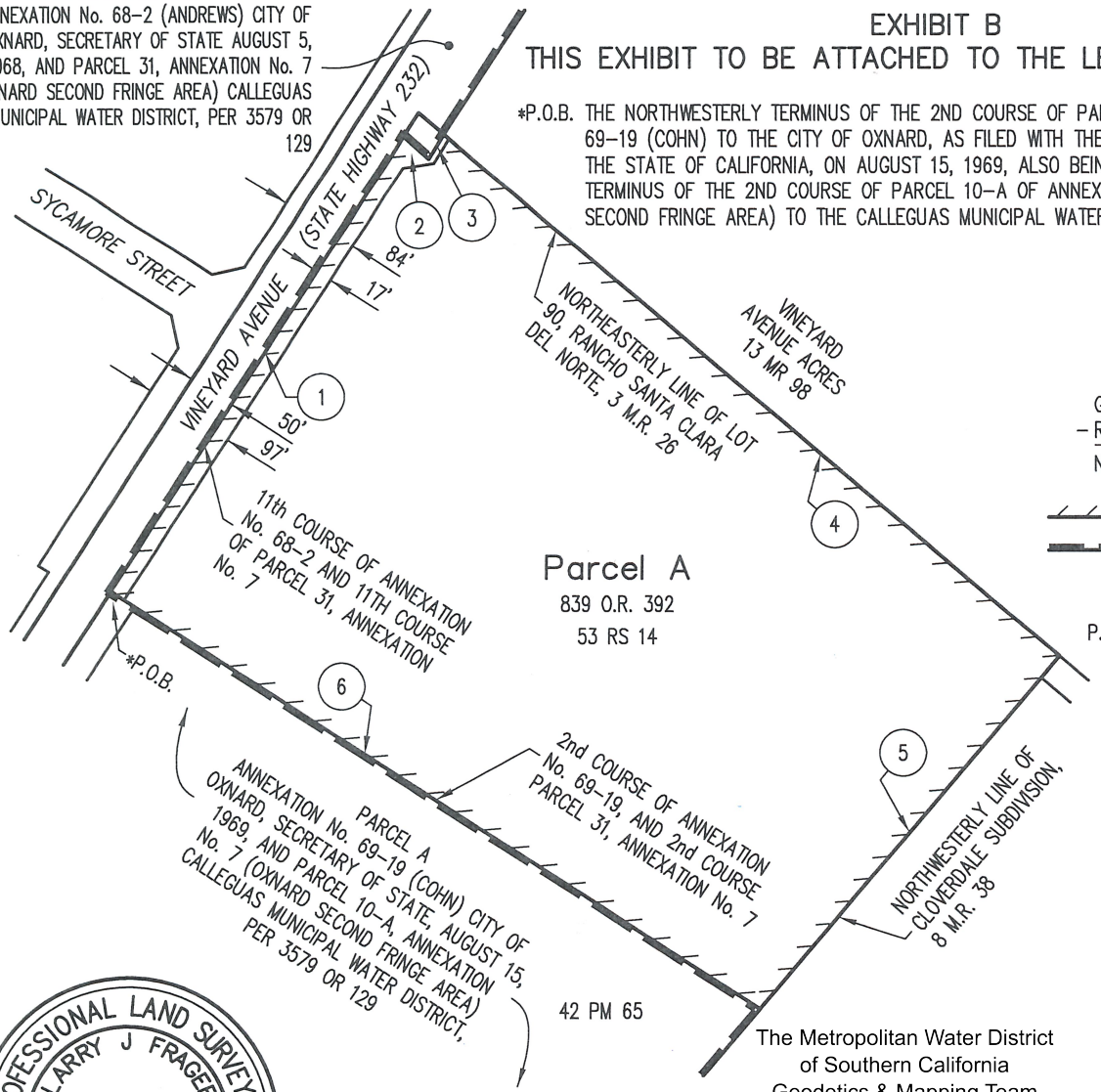
NOTE: For assessment purposes only. This legal description is not a legal description as defined in the Subdivision Map Act and may not be used for an offer for sale of the land described herein.

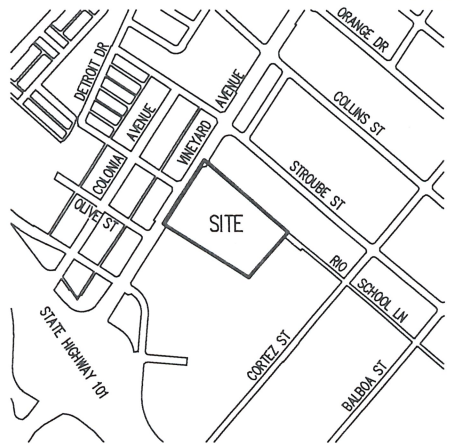
WO 2017-01/17-01ox-cmwd reorg

2398

EXHIBIT B
THIS EXHIBIT TO BE ATTACHED TO THE LEGAL DESCRIPTION

*P.O.B. THE NORTHWESTERLY TERMINUS OF THE 2ND COURSE OF PARCEL A OF ANNEXATION No. 69-19 (COHN) TO THE CITY OF OXNARD, AS FILED WITH THE SECRETARY OF STATE OF THE STATE OF CALIFORNIA, ON AUGUST 15, 1969, ALSO BEING THE NORTHWESTERLY TERMINUS OF THE 2ND COURSE OF PARCEL 10-A OF ANNEXATION No. 7 (OXNARD SECOND FRINGE AREA) TO THE CALLEGUAS MUNICIPAL WATER DISTRICT, PER 3579 OR 129.





LOCATION MAP
NOT TO SCALE

GROSS AREA	10.72	ACRES
– ROAD AREA	0.24	ACRES
NET AREA	10.48	ACRES

PROPOSED ANNEXATION AREA

EXISTING BOUNDARIES, CITY OF OXNARD AND CALLEGUAS MUNICIPAL WATER DISTRICT

P.O.B. POINT OF BEGINNING

ANNEXATION COURSES:

1st	N 32°47'56" E	574.78'
2nd	S 49°42'28" E	35.30'
3rd	N 32°47'56" E	30.00'
4th	S 49°42'28" E	857.66'
5th	S 40°18'10" W	492.55'
6th	N 57°12'04" W	821.00'

0 200 400

1 inch = 200 feet

PROFESSIONAL LAND SURVEYOR
LARRY J FRAGER
No. 7998
STATE OF CALIFORNIA

The Metropolitan Water District of Southern California
Geodetics & Mapping Team
ANNEXATION - CONDITIONAL REV
Reviewer: SCL Date: 2/28/22

Larry Frager 2/24/22
LARRY J. FRAGER, PLS 7998 DATE

CALLEGUAS MUNICIPAL WATER DISTRICT
ANNEXATION No. 104

ANNEXATION TO THE CITY OF OXNARD, AND ANNEXATION TO THE CALLEGUAS MUNICIPAL WATER DISTRICT, AND DETACHMENT FROM THE VENTURA COUNTY RESOURCE CONSERVATION DISTRICT, AND DETACHMENT FROM VENTURA COUNTY FIRE PROTECTION DISTRICT, AND DETACHMENT FROM VENTURA COUNTY SERVICE AREA No. 32

BEING A PORTION OF LOT 90 OF THE RANCHO SANTA CLARA DEL NORTE, IN THE COUNTY OF VENTURA, STATE OF CALIFORNIA, PER MAP RECORDED IN BOOK 3, PAGE 26 OF MAPS

JULY 21, 2021 SHEET 1 OF 1

BENNER and CARPENTER, INC.
CIVIL ENGINEERS LAND SURVEYORS
506 E. Main Street Santa Paula, CA 93060
(805) 525-3396 FAX: (805) 656-1989

NOTE: FOR ASSESSMENT PURPOSES ONLY. THIS DESCRIPTION OF LAND IS NOT A LEGAL PROPERTY DESCRIPTION AS DEFINED IN THE SUBDIVISION MAP ACT AND MAY NOT BE USED AS THE BASIS OF AN OFFER FOR SALE OF THE LAND DESCRIBED.

Documentation for Annexation of Territory to
The Metropolitan Water District of Southern California (MWD)

Water Use Efficiency Compliance Statement

Calleguas Municipal Water District Annexation 104 – Rio Urbana

A. General Information

Description of Annexing Area	Member Agency: Calleguas Municipal Water District Annexation Name: Annexation 104 – Rio Urbana Water Use: CMWD CY 2021 (Imported Demands – Sales to Other Agencies): 92,923 AF Annexing Water Demand: 40.40 AFY Imported Water Demand: 20.20 to 24.24 AFY Percent MWD Supplied: 50-60% Development Plans: Commercial General (City of Oxnard) Zoning: C-2 General Commercial Planned Development Zone [C-2-PD] (City of Oxnard) Address: 2714 East Vineyard Avenue, Oxnard, 93036 (APN: 145-0-232-010) Additional Water Agencies Involved in Annexation: 1. City of Oxnard

B. Member Agency Water Use and Efficiency Plans

(1) Annual Water Use.

1. Does your agency minimize annual water demand and peak demands by incorporating water conservation measures throughout the service area? Please describe such conservation measures in the service area. **MWD Administrative Code § 3107 (a)(1)(i)**	Member Agency Response: **Yes** Description: ▪ CMWD contributes cash incentives beyond MWD rebates in the amount of $25 per device for high efficiency clothes washers, premium high efficiency toilets, weather-based irrigation controllers and soil moisture sensor systems. Effective September 1, 2021, Calleguas also adds a $1 supplement per square foot to MWD's turf rebate, for a total of $3/square foot for Calleguas customers. It does this in conjunction with participation by member purveyors. ▪ Calleguas' staff includes a Principal Resource Specialist who actively promotes and coordinates Metropolitan and Calleguas conservation programs. Activities include direct contact with builders, dissemination of literature, and presentations to public and industry groups. ▪ Calleguas relies on its Member Purveyors to enforce compliance with mandated conservation measures at the local level as part of the project approval process. ▪ Newly annexing territory is conditioned to be compliant with: Metropolitan Water District of Southern California Administrative Code 3107 (as amended over time), California Water Code Sections 13550-13557, Calleguas Resolution No. 903 and Calleguas Ordinance No. 17. Reporting on compliance is required by the Member Purveyor and the property owner through provisions of Exhibit 'C' attached to Calleguas annexation resolutions. Supporting Documentation: Please refer to: 1) CMWD 2020 Urban Water Management Plan Pages 9-1 through 9-4. 2) CMWD Resolution 1964 - Attachment C (pg. 50-51)

2. Does your service area maximize use of groundwater, local surface water, and recycled waste water supplies to minimize annual water demand on MWD? Please describe such maximizing uses in the service area. **MWD Administrative Code § 3107 (a)(1)(ii)**	Member Agency Response: **Yes** Description: CMWD member agencies produce and distribute approximately 40,000 to 50,000 AF of water from local sources annually. Sources include imported surface water supplied to the City of Oxnard by United Water Conservation District, groundwater, and recycled water. The Regional Salinity Management Program involves construction of a pipeline to dispose of brine concentrates and thereby facilitate the use of high-salinity groundwater and recycled wastewater in the Calleguas watershed. 16.7 miles of the pipeline and the ocean outfall are complete. Ultimately it will extend from the outfall 32 miles inland to Simi Valley. When complete and fully utilized by CMWD member agencies, the pipeline will substantially increase local water supplies. Working with its member purveyors, CMWD has identified several other potential projects for recovering low quality groundwater and recycling. The program has the potential of providing 40,000 AF of potable water annually directly offsetting demand on MWD. Supporting documentation: Please visit smp.calleguas.com
3. Does your service area construct and operate local storage and groundwater production facilities as required by California Water Code Sections 10700-10710 (Groundwater Resources)? Please describe such construction and operations in the service area. **MWD Administrative Code § 3107 (a)(1)(iii)**	Member Agency Response: **Yes** Description: Member purveyors with groundwater pump more heavily in summer months. In addition, the District operates ten reservoirs with a combined capacity of 63 million gallons to reduce daily peaking. CMWD Ordinance No. 12 penalizes member purveyors for extremes of high and low flow and imposes the Capacity Reservation Charge on member purveyors as an incentive to reduce peaking. Calleguas itself also maintains groundwater facilities in the Las Posas Basin. Groundwater supplies in the Las Posas Valley Groundwater Basin may be utilized in the event of an emergency. Supporting Documentation: Please see: 1) Calleguas Urban Water Management Plan 2020, Chapter 6; 2) Calleguas 2017 Potable Water Master Plan Executive Summary Pages 9-14 and 25-27; 3) Calleguas Ordinance No. 12, Page 2
4. Does your agency condition all new territory to be consistent with all applicable city, county, and state laws? **MWD Administrative Code § 3107 (a)(1)(iv)**	Member Agency Response: **Yes** Description: ▪ Newly annexing territory is conditioned to be compliant with: Metropolitan Water District of Southern California Administrative Code 3107 (as amended over time), California Water Code Sections 13550-13557, Calleguas Resolution No. 903 and Calleguas Ordinance No. 17. Reporting on compliance is required by the Member Purveyor and the property owner through provisions of Exhibit 'C' attached to Calleguas annexation resolutions. ▪ Further, 'Exhibit C' of CMWD Resolution 1964 captures compliance with the Model Water Efficient Landscape Ordinance, known as 'MWELO', by conditioning newly annexed territory to be compliant with the City of Oxnard Municipal Code (Chapter 22), which contains MWELO provisions as specified in Article XIII. Landscape Water Conservation Standards. ▪ Calleguas relies on its Member Purveyors to enforce compliance with mandated conservation measures at the local level as part of the project approval process.

	Supporting Documentation: Please refer to: 1) CMWD Resolution 1964 - Attachment C (pg. 50-51)

(2) Recycled Water.

5. Does your service area use recycled water in accordance with California Water Code Sections 13550-13557 (Water Reuse)? Please describe such recycled water use in the service area. **MWD Administrative Code § 3107 (a)(2)**	Member Agency Response: **Yes** Description: ▪ Calleguas supports the use of recycled water in accordance with Water Code Sections 13550-13557 wherever it is feasible to do so within its service area. ▪ In recent years, the City of Oxnard delivered highly treated wastewater through the CMWD Salinity Management Pipeline for delivery to CII users. However, this operation will be not be feasible when the City of Camarillo's North Pleasant Valley Desalter begins its discharge to the SMP (estimated in 2022). ▪ The City of Oxnard continues to study maximizing production from its Advanced Water Purification Facility (AWPF). The City of Oxnard is currently planning for an Indirect Potable Reuse (IPR) project that began pilot testing in 2020. ▪ Calleguas built three pipelines to facilitate distribution of recycled water by its member purveyors. In 2017 these pipelines delivered 1,655 Acre-feet of recycled water. In May of 2017 two of the recycled pipelines were sold to Triunfo Water & Sanitation District, which continues to operate them. Today, Calleguas owns a small pipeline that provides recycled water to the City of Simi Valley (VCWWD No. 8). In the future, it is expected that the City of Simi Valley will take ownership, operation, and maintenance of this delivery facility. Additional AF of recycled water are distributed for M and I use by CMWD purveyors. Most of these deliveries are used for landscape irrigation and directly offset potable demand. Supporting Documentation: Please see: 1) Calleguas 2020 Urban Water Management Plan Page 4-4, Pages 6-8 to 6-10; 2) Calleguas 2017 Potable Water Master Plan Executive Summary Pages 11. 3) Regional Salinity Management Program Brochure 4) City of Oxnard Recycled Water Webpage. 5) Oxnard IPR Program

(3) Local Resources.

6. Has your agency established measures to sustain a seven-to 21-day interruption in service, as required by MWD Administrative Code Section 4503(b)? **MWD Administrative Code § 3107 (a)(3)**	Member Agency Response: **Yes** Description: ▪ Calleguas can call on multiple sources of water to sustain service through a 7-day interruption of supplies from Metropolitan. Lake Bard has usable storage capacity of 7,500 AF as a potable supply. The Lake Bard Water Filtration Plant can produce 90 cubic feet per second (CFS). Additionally, Calleguas presently holds the right to roughly 95,000 AF of groundwater. During a shutdown, Calleguas can produce 55 CFS from its Las Posas ASR Project. Other Calleguas groundwater supplies can by agreement be extracted by its member purveyors. These supplies are sufficient to meet demand in the Calleguas service area in winter and spring months. In addition, interconnections with the City of Ventura and Las Virgenes MWD are currently in the planning phase and construction phase, respectively. ▪ Calleguas' staff includes an Emergency Response Coordinator. This position leads the District's disaster management programs. ▪ Calleguas' member purveyors can augment these supplies during such short-term interruptions with increased groundwater pumping and other regional resources so that summer demand can be largely satisfied with minimal delivery curtailment.

	▪ The District would heavily emphasize water conservation and a message of "NO OUTDOOR IRRIGATION" should Calleguas face a prolonged interruption in service from MWD. ▪ Calleguas is in the process of finalizing a Water Supply Alternatives Study (WSAS) that examines more than 90 projects that could increase the District's reliability (& redundancy) at least cost. This is a long-range planning document. Supporting Documentation: Please refer to: 1) Calleguas 2020 Urban Water Management Plan Chapter 8 (Water Shortage Contingency Planning) and Appendix K (Water Shortage Continency Plan); and 2) Imported Water Outage Planning

C. Reporting to the District

7. Has your agency incorporated conservation measures in the new territory? Please describe such measures. **MWD Administrative Code § 3107(b)(1)**	Member Agency Response: **Yes** Description: ▪ Newly annexing territory is conditioned to be compliant with: Metropolitan Water District of Southern California Administrative Code 3107 (as amended over time), California Water Code Sections 13550-13557, Calleguas Resolution No. 903 and Calleguas Ordinance No. 17. Reporting on compliance is required by the Member Purveyor and the property owner through provisions of Exhibit 'C' attached to Calleguas annexation resolutions. ▪ Calleguas relies on its Member Purveyors to enforce compliance with mandated conservation measures at the local level as part of the project approval process. Supporting Documentation: Please refer to: 1) CMWD Resolution 1964 - Attachment C (pg. 50-51)
8. What is your agency's total annual production of local water supplies including, but not limited to, recycled water, groundwater, and local surface water use? **MWD Administrative Code § 3107(b)(2)**	Member Agency Response: ▪ Per CY 2020 reconciliation (Local Production All Sources): 43,327.7 AF ▪ Per CY 2020 reconciliation (CMWD Imported Sales): 89,631.5 AF ▪ CY 2021 reconciliation will occur when prompted by MWD WRM staff.
9. Has your agency established resources to sustain a seven-to 21-day interruption in service, as required by MWD Administrative Code Section 4503(b)? Please describe such resources, as applicable to your agency's facilities, as specified in MWD Administrative Code §§ 3107(b)(3). **MWD Administrative Code § 3107(b)(3)**	Member Agency Response: **Yes** Description: ▪ Calleguas can call on multiple sources of water to sustain service through a 7-day interruption of supplies from Metropolitan. Lake Bard has usable storage capacity of 7,500 AF as a potable supply. The Lake Bard Water Filtration Plant can produce 90 cubic feet per second (CFS). Additionally, Calleguas presently holds the right to roughly 95,000 AF of groundwater. During a shutdown, Calleguas can produce 55 CFS from its Las Posas ASR Project. Other Calleguas groundwater supplies can by agreement be extracted by its member purveyors. These supplies are sufficient to meet demand in the Calleguas service area in winter and spring months. In addition, interconnections with the City of Ventura and Las Virgenes MWD are currently in the planning phase and construction phase, respectively. ▪ Calleguas' staff includes an Emergency Response Coordinator. This position leads the District's disaster management programs. ▪ Calleguas' member purveyors can augment these supplies during such short-term

	interruptions with increased groundwater pumping and other regional resources so that summer demand can be largely satisfied with minimal delivery curtailment. ▪ Finally, the District would heavily emphasize water conservation and a message of "NO OUTDOOR IRRIGATION" should CMWD face a prolonged interruption in service from MWD.
10. Has your agency submitted a current Urban Water Management Plan (UWMP) to the reporting agency? **MWD Administrative Code § 3107(b)(4)(i)**	Member Agency Response: **Yes** Description: ▪ Calleguas' 2020 UWMP is available on its website: https://www.calleguas.com/cmwdfinal2020uwmp.pdf ▪ The City of Oxnard's 2020 UWMP: https://www.oxnard.org/city-department/public-works/water/uwmp/
11. Does your agency's most current UWMP include a narrative description addressing the nature and extent of each water demand management measure implemented over the past 5 years, as required by California Water Code Section 10631(f)? **MWD Administrative Code § 3107(b)(4)(ii)**	Member Agency Response: **Yes** Description: ▪ Calleguas' 2020 UWMP is available on its website: https://www.calleguas.com/cmwdfinal2020uwmp.pdf, see Chapter 9, Demand Management Measures ▪ The City of Oxnard's 2020 UWMP: https://www.oxnard.org/city-department/public-works/water/uwmp/, see Chapter 9, Demand Management Measures
12. Does your agency's most current UWMP adequately address California Water Code requirements? **MWD Administrative Code § 3107(b)(4)(iii)**	Member Agency Response: **Yes** Description: ▪ Calleguas' 2020 UWMP is available on its website: https://www.calleguas.com/cmwdfinal2020uwmp.pdf ▪ The City of Oxnard's 2020 UWMP: https://www.oxnard.org/city-department/public-works/water/uwmp/ ▪ The Department of Water Resources (DWR) is currently reviewing the Calleguas MWD 2020 UWMP and the City of Oxnard 2020 UWMP. Documentation regarding DWR's determination of each agency's 2020 UWMP compliance with California Water Code (CWC) requirements can be provided upon receipt.
13. What is the status of implementing the water plans, projects, and programs described in the UWMP to implement California Water Code Section 10620 et seq.? **MWD Administrative Code § 3107(b)(5)**	Member Agency Response: In progress Description: ▪ Calleguas relies in part on the MWD Water Surplus & Drought Management Plan, including the periodic updates to MWD's Water Supply Allocation Plan (WSAP). ▪ As required for the 2020 CMWD UWMP update, the District developed its own Water Shortage Contingency Plan (WSCP). See Calleguas 2020 Urban Water Management Plan Appendix K ▪ The Calleguas MWD Final 2020 UWMP and WSCP were adopted by the Calleguas Board of Directors on June 2, 2021 (Resolution No. 2018).

MWD

MWD Employee Name: Ethel Young File Date: 2/24/2022

MWD Employee Name: Review Date: 2/24/2022

Notes:

N/A

MWD Member Agency

The following member agency assures compliance with the provisions of Metropolitan's Water Use Efficiency Guidelines for the next five years as indicated in Metropolitan's Administrative Code § 3107 and shall report to Metropolitan regarding such compliance.

Agency Name: **Calleguas Municipal Water District** Date: 10/12/2021

Member Agency Representative Name: Dan Drugan, Manager of Resources

Notes: N/A

RESOLUTION XXXX

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
CONSENTING TO CALLEGUAS MUNICIPAL WATER DISTRICT'S
CALLEGUAS ANNEXATION NO. 104
AND FIXING THE TERMS AND CONDITIONS
TO
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

WHEREAS, the Board of Directors of the Calleguas Municipal Water District ("Calleguas"), a county water authority situated in the county of Ventura, state of California, pursuant to Resolution No. 2038, in accordance with the provisions of the Metropolitan Water District Act (MWD Act), has applied to the Board of Directors of The Metropolitan Water District of Southern California (Metropolitan) for consent to annex thereto certain uninhabited territory situated in the county of Ventura referred to as Calleguas Annexation No. 104, more particularly described in an application to the Ventura County Local Agency Formation Commission (LAFCO), concurrently with Calleguas Annexation No. 104 thereof to Calleguas, such annexation to Metropolitan to be upon such terms and conditions as may be fixed by the Board of Directors of Metropolitan;

WHEREAS, the owner of Ventura County Assessor Parcel Number 145-0-232-010 (Property) has applied for annexation into the Calleguas and Metropolitan service areas;

WHEREAS, completion of said Annexation No. 104 shall be contingent upon approval by the LAFCO; conditioning its approval of the Calleguas Annexation No. 104 upon a requirement that Metropolitan's existing and established taxes, benefit assessments, or property-related fees or charges in place in the service area are levied or fixed and collected on the parcels being annexed to the agency; these taxes, benefit assessments, or property-related fees or charges are identified below;

WHEREAS, Metropolitan has levied and collected ad valorem taxes on parcels within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9301, adopted by Metropolitan's Board on April 12, 2022;

WHEREAS, since fiscal year 1992-93, Metropolitan has levied and collected water standby charges pursuant to Section 134.5 of the MWD Act on parcels within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9307, adopted by Metropolitan's Board on May 10, 2022;

WHEREAS, upon Annexation No. 104, the parcel will be within Metropolitan's service area, Metropolitan water will be available to such parcels and such parcels will receive the benefit of the projects provided in part with proceeds of Metropolitan's water standby charges. Upon completion of the annexation, the lands within the Calleguas Annexation No. 104 will be subject to Metropolitan's water standby charge in the current amount of $9.58 per acre, or per a parcel of less than one acre. Approval of Metropolitan's standby charge levied elsewhere within Calleguas' territory is a condition to complete this annexation;

WHEREAS, pursuant to the provisions of the California Environmental Quality Act (CEQA), The City of Oxnard, acting as Lead Agency and subagency to Calleguas, adopted the Rio Urbana Project (also known as Calleguas Annexation No. 104) Mitigated Negative Declaration on March 4, 2020, and approved the Project for the development of the proposed annexation parcels. Metropolitan, as Responsible Agency under CEQA, reviewed and considered the information contained in the 2019 MND prior to approval of the formal terms and conditions for the Calleguas Annexation No. 104; and

WHEREAS, it appears to this Board of Directors that such application should be granted, subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of Metropolitan, acting as Responsible Agency, reviewed and considered the information in the 2019 MND prior to approval of the final terms and conditions for Calleguas Annexation No. 104; and subject to the following terms and conditions, does hereby grant the application of the governing body of Calleguas Municipal Water District for consent to annex Calleguas Annexation No. 104, to Metropolitan and does hereby fix the terms and conditions of such annexation.

BE IT FURTHER RESOLVED that the Board of Directors of Metropolitan, subject to the following terms and conditions, does hereby grant the application of the governing body of Calleguas for consent to Calleguas Annexation No. 104 to Metropolitan and does hereby fix the terms and conditions of such annexation:

Section 1. Annexation of said area to Calleguas shall be made concurrently with annexation thereof to Metropolitan, and all necessary certificates, statements, maps, and other documents required to be filed by or on behalf of Calleguas to effectuate Annexation No. 104 shall be filed on or before December 31, 2023.

Section 2. Prior to filing a request for a Certificate of Completion of Annexation No. 104 proceedings with LAFCO, Calleguas shall submit a certified copy of LAFCO's resolution approving Annexation No. 104 to Calleguas and shall pay to Metropolitan $74,220.40 for its annexation fee, if annexation is completed by December 31, 2022. If the annexation is completed during the 2023 calendar year, the annexation charge will be calculated based on the then-current rate, in accordance with Metropolitan's Administrative Code Section 3300.

Section 3. a. Metropolitan shall be under no obligation to provide, construct, operate, or maintain feeder pipelines, structures, connections, and other facilities required for the delivery of water to said area from works owned and operated by Metropolitan.

b. Calleguas shall not be entitled to demand that Metropolitan deliver water to Calleguas for use, directly or indirectly, within said area, except for domestic or municipal use therein.

c. The delivery of all water by Metropolitan, regardless of the nature and time of use of such water shall be subject to the water service regulations, including rates and charges promulgated from time to time by Metropolitan.

d. The delivery of all water by Metropolitan, regardless of the nature and time of use of such water shall be subject to the water service regulations, including rates and charges promulgated from time to time by Metropolitan.

Section 4. LAFCO has conditioned approval of Calleguas Annexation No. 104 upon a requirement that Metropolitan levy or fix and collect all previously established and collected taxes, benefit assessments, or property-related fees or charges on parcels being annexed to the agency.

Section 5. Such charges, which are subject to change over time, include but are not limited to:

a. Metropolitan's ad valorem tax on properties located within the territory of Calleguas in the amount of 0.0035 percent of the assessed value of each parcel. Metropolitan shall levy the ad valorem tax in the amount, at the same time and in the same manner as ad valorem tax on other properties located within the territory of Calleguas. Such charges for fiscal year 2022/21 are described in Resolution 9301, adopted by Metropolitan's Board on April 12, 2022.

b. Metropolitan's water standby charge on properties located within the territory of Calleguas in the amount, at the same time and in the same manner as the ad valorem tax on other properties located within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9307, adopted by Metropolitan's Board on May 10, 2022

Section 6. That the General Manager is hereby authorized and directed to take all necessary action to secure the collection of the ad valorem taxes and water standby charges by the appropriate county officials, including payment of the reasonable cost of collection.

Section 7. That the Board of Directors of Metropolitan, acting as Responsible Agency, reviewed and considered the information in the 2019 MND prior to approval of the final terms and conditions for the Annexation No. 104; and subject to the following terms and conditions, does hereby grant the application of the governing body of Calleguas for consent to annex the Calleguas Annexation No. 104 to Metropolitan and does hereby fix the terms and conditions of such annexation.

Section 8. That the General Manager and General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this resolution, including, without limitation, the commencement of defense of litigation.

Section 9. That if any provision of this resolution or the application to any member agency, property or person whatsoever is held invalid, that invalidity shall not affect the other provisions or applications of this resolution which can be given effect without the invalid portion or application, and to that end the provisions of this resolution are severable.

BE IT FURTHER RESOLVED that the Board Executive Secretary is directed to transmit forthwith to the governing body of Calleguas a certified copy of this resolution.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a resolution adopted by the Board of Directors of The Metropolitan Water District of Southern California, at its meeting held on June 14, 2022.

_____

Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

FILED
DATE: MAR 06 2020
MARK A. LUNN
Ventura County Clerk and Recorder
By: _____, Deputy

Print Form

Notice of Determination

Appendix D

To:

☒ Office of Planning and Research

U.S. Mail:	*Street Address:*
P.O. Box 3044	1400 Tenth St., Rm 113
Sacramento, CA 95812-3044	Sacramento, CA 95814

☒ County Clerk
County of: Ventura
Address: 800 S. Victoria Avenue
Ventura ,CA 93009

From:
Public Agency: City of Oxnard
Address: 214 South C Street
Oxnard, CA 93030
Contact: Scott Kolwitz, Planning Manager
Phone: (805) 385-3919

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2019079068

Project Title: Rio Urbana Community 2714 E. Vineyard Avenue

Project Applicant: Rio School District c/o Tony Talamante

Project Location (include county): Oxnard, Ventura County

Project Description:

Annexation to City of Oxnard and Calleguas MWD and detachment from County of Ventura, Oxnard General Plan Amendment land use change to Commercial General, Pre-zoning to C2-PD, Tentative Subdivision Map for Tract No. 5998, Density Bonus, Special Use Permit for 167 condominium multifamily units in eight three-story structures, Special Use Permit for two-story 15,000 gsf office building, and related infrastructure and site landscaping and improvements.

This is to advise that the City of Oxnard ([☒] Lead Agency or [☐] Responsible Agency) has approved the above described project on March 4, 2020 (date) and has made the following determinations regarding the above described project.

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

POSTED
MAR 06 2020 MAY 06 2020
MARK A. LUNN
Ventura County Clerk and Recorder
By: _____

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
Oxnard Service Center, 214 South C Street, Oxnard, CA. https://www.oxnard.org/planning

Signature (Public Agency): _____ Title: Planning Manager

Date: March 4, 2020 Date Received for filing at OPR: _____

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2011

State of California - Department of Fish and Wildlife

2020 ENVIRONMENTAL FILING FEE CASH RECEIPT

Complete the information and submit with each set of documents presented for filing. Please provide an original set and (3) three sets of copies for filing.

20200306-10004544-0 1/1
Ventura County Clerk and Recorder
MARK A. LUNN
03/06/2020 01:57:42 PM
1591888 $2456.75 QU

RECEIPT NUMBER: — —

STATE CLEARINGHOUSE NUMBER *(If applicable)*: 2019079068

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
City of Oxnard	planning@oxnard.org	March 4, 2020

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
Ventura	

PROJECT TITLE: Rio Urbana Community 2714 E. Vineyard Avenue

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
Rio School District c/o Tony Talamante	tony.talamante@gmail.com	(805) 217-5453

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
2500 E. Vineyard Ave. #100	Oxnard	CA	93036

PROJECT APPLICANT *(Check appropriate box)*

☐ Local Public Agency ☒ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,343.25	$
☒ Mitigated/Negative Declaration (MND)(ND)	$2,406.75	$ 2,406.75
☐ Certified Regulatory Program document (CRP)	$1,136.50	$

☐ Exempt from fee
- ☐ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$
☒ County documentary handling fee	$50.00	$ 50.00
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☒ Check ☐ Other **TOTAL RECEIVED** $ 2,456.75

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
	Scott Kolwitz, Planning Manager
Date: March 4, 2020	Telephone Number: 805-385-3919

DO NOT WRITE BELOW THIS LINE

The following will be completed by the County Clerk's Office

Signature of person receiving payment: _____, Total Recieved: $ 2456.75

Deputy County Clerk

Posted: MAR 06 2020 through MAY 06 2020

DFWVC 01/01/2020

FILED
DATE: FEB 07 2022
MARK A. LUNN
Ventura County Clerk and Recorder
By: Elizabeth Arant, Deputy

POSTED
FEB 07 2022 MAY 02 2022
MARK A. LUNN
Ventura County Clerk and Recorder
By: ELIZABETH ARANT Deputy

Notice of Determination

Appendix D

To:

☐ Office of Planning and Research

U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044

Street Address: 1400 Tenth St., Rm 113, Sacramento, CA 95814

☒ County Clerk
County of: Ventura
Address: 800 S. Victoria Ave.
Ventura, CA 93009

From:
Public Agency: Calleguas Municipal Water District
Address: 2100 Olsen Road
Thousand Oaks, CA 91360
Contact: Jennifer Lancaster
Phone: (805) 579-7194

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2019079068

Project Title: Calleguas MWD Annexation 104 - Rio Urbana

Project Applicant: 2714 E. Vineyard Avenue, LLC

Project Location (include county): 2714 East Vineyard Avenue, Oxnard, Ventura County

Project Description:

Proposed project includes construction of a two-story, 15,000-square-foot office building and parking; 167 for-sale condominiums in eight multifamily structures; and parking, landscaping, utilities, recreation facilities, SCE 66-kV power line relocations, and widening of Vineyard Avenue. Annexation of the site is required for the City of Oxnard to supply municipal water, in part obtained from Calleguas Municipal Water District and Metropolitan Water District of Southern California, to the project once developed.

This is to advise that the Calleguas Municipal Water District (☐ Lead Agency or ☒ Responsible Agency) has approved the above described project on 2/2/2022 (date) and has made the following determinations regarding the above described project.

1. The project [☒ will ☐ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☐ was not] adopted for this project.
6. Findings [☐ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
Not applicable

Signature (Public Agency): _____ Title: Principal Resource Specialist

Date: 2/2/2022 Date Received for filing at OPR: _____

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2011

State of California - Department of Fish and Wildlife

2022 ENVIRONMENTAL DOCUMENT FILING FEE CASH RECEIPT

DFW 753.5a (REV. 01/01/22) Previously DFG 753.5a

Print StartOver Save

RECEIPT NUMBER: 56 — 02/02/2022 —

STATE CLEARINGHOUSE NUMBER *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
Calleguas Municipal Water District	jlancaster@calleguas.com	02/02/2022

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
Ventura	2019079068

PROJECT TITLE

Calleguas MWD Annexation 104 - Rio Urbana

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
Calleguas Municipal Water District	jlancaster@calleguas.com	(805) 579-7194

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
2100 Olsen Road	Thousand Oaks	CA	91360

PROJECT APPLICANT *(Check appropriate box)*

☐ Local Public Agency ☐ School District ☑ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,539.25	$ 0.00
☐ Mitigated/Negative Declaration (MND)(ND)	$2,548.00	$ 0.00
☐ Certified Regulatory Program (CRP) document - payment due directly to CDFW	$1,203.25	$ 0.00

☑ Exempt from fee

- ☐ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☑ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$ 0.00
☑ County documentary handling fee		$ 50.00
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☑ Check ☐ Other **TOTAL RECEIVED** $ 50.00

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
X Jennifer Lancaster — Digitally signed by Jennifer Lancaster Date: 2022.02.02 14:00:27 -08'00'	Jennifer Lancaster - Principal Resource Specialist

Filed in County Clerk's Office
Mark A. Lunn
Ventura County Clerk-Recorder

202210000184 8

02/07/2022
04:06 PM
VEN
DocType: FISH
ARANE

Pages: 1
Fees: $50.00

ORIGINAL - PROJECT APPLICANT COPY - CDFW/ASB COI

State of California - Department of Fish and Wildlife

2020 ENVIRONMENTAL FILING FEE CASH RECEIPT

Complete the information and submit with each set of documents presented for filing. Please provide an original set and (3) three sets of copies for filing.

20200306-10004544-0 1/1
Ventura County Clerk and Recorder
MARK A. LUNN
03/06/2020 01:57:42 PM
1591888 $2456.75 QU

RECEIPT NUMBER: — —

STATE CLEARINGHOUSE NUMBER *(If applicable)*: 2019079068

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
City of Oxnard	planning@oxnard.org	March 4, 2020

COUNTY/STATE AGENCY OF FILING: Ventura

DOCUMENT NUMBER:

PROJECT TITLE: Rio Urbana Community 2714 E. Vineyard Avenue

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
Rio School District c/o Tony Talamante	tony.talamante@gmail.com	(805) 217-5453

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
2500 E. Vineyard Ave. #100	Oxnard	CA	93036

PROJECT APPLICANT *(Check appropriate box)*

☐ Local Public Agency ☒ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,343.25	$
☒ Mitigated/Negative Declaration (MND)(ND)	$2,406.75	$ 2,406.75
☐ Certified Regulatory Program document (CRP)	$1,136.50	$
☐ Exempt from fee		
☐ Notice of Exemption (attach)		
☐ CDFW No Effect Determination (attach)		
☐ Fee previously paid (attach previously issued cash receipt copy)		
☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$
☒ County documentary handling fee	$50.00	$ 50.00
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☒ Check ☐ Other **TOTAL RECEIVED** $ 2,456.75

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
	Scott Kolwitz, Planning Manager
Date: March 4, 2020	Telephone Number: 805-385-3919

DO NOT WRITE BELOW THIS LINE

The following will be completed by the County Clerk's Office

Signature of person receiving payment: _____, Deputy County Clerk

Total Recieved: $ 2456.75

Posted: MAR 06 2020 through _____

DFWVC 01/01/2020

Mitigation Monitoring and Reporting Plan (MMRP)

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
Biological Resources	Potentially Significant	**BIO-1** Nesting Bird and Raptor Survey and Avoidance. In the event that the proposed action is planned to occur within the general bird nesting season, a pre-construction nesting bird survey shall be conducted by a qualified biologist. The nesting season is generally considered February 1 through August 31, with a peak from March to June; however, these dates vary by year depending on prey availability, weather, and other factors. In the event an active bird is observed in the habitats to be removed or in other habitats within 100 feet for songbirds and 500 feet for raptors of the construction work areas, all construction work in the suitable habitat or within 100 feet/500 feet of the suitable habitat must be delayed until after September 1st, or surveys must be continued in order to locate any nests. If an active nest is found, clearing and construction within 100 feet/500 feet of the nest shall be postponed until the nest is vacated and juveniles have fledged, and until there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest site shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the ecological sensitivity of the area.	Less Than Significant	Community Development
Cultural and Tribal Cultural Resources	Potentially Significant	**CUL-2** A qualified archaeologist shall monitor all project-related ground-disturbing activities. In the unlikely event that potentially significant archaeological materials are encountered during construction, the applicant must comply with State regulations and City's standard condition of approval for handling such resources.	Less Than Significant	Community Development
Noise	Potentially Significant	**N-1(a)** Building Material Guidelines. The living areas for all residences in the project, including those adjacent to Vineyard Avenue, shall be constructed to include sufficient noise attenuation to reduce interior noise levels to a CNEL of 45 dBA, as required by California building standards. For the estimated exterior CNEL values of 65 dBA, this performance standard requires an exterior-to interior noise reduction of approximately 20 dBA. This noise reduction is	Less Than Significant	Community Development

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
		routinely achieved in residential construction that is consistent with current California energy conservation standards, and involves measures such as exterior stucco walls with a Sound Transmission Class (STC) rating of 45, double-paned windows with an STC of 37, solid core exterior doors. Building permit applications shall include documentation that the interior standard of 45 dBA CNEL will be achieved through a combination of these or other measures. **N-1(b)** Building Design. The living areas shall contain forced air ventilation. All duct work for ventilation shall include noise louvers at the exterior outlet and/or duct outlets shall be directed either opposite to or perpendicular to Vineyard Avenue. Upper level patio/deck areas shall not be positioned facing the Vineyard Avenue for residences along the western site boundary <u>without additional mitigation or verification that exterior CNEL values would meet the City noise standard of 65 dBA as shown in a Noise Study reviewed and approved by the Planning Manager or designee.</u>		
Noise	Potentially Significant	**N-2** Construction Noise Levels. For all construction-related activities, noise-attenuation techniques shall be employed as needed to ensure that noise remains as low as possible during construction, specifically at REC-1 through REC-3. The following noise-attenuation techniques shall be incorporated into contract specifications to reduce the impact of construction noise: • Ensure that construction equipment is properly muffled according to industry standards and in good working condition. • Place noise-generating construction equipment and locate construction-staging areas away from sensitive uses, where feasible. • Schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses. • Implement noise attenuation measures to the extent feasible, which may include but are not limited to temporary noise barriers or noise blankets around stationary construction noise sources.	Less Than Significant	Community Development

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
		• Use electric air compressors and similar power tools rather than diesel equipment, where feasible. • All stationary construction equipment (e.g., air compressors, generators, impact wrenches, etc.) shall be operated as far away from residential uses as possible and shall be shielded with temporary sound barriers, sound aprons, or sound skins. • Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. • Clearly post construction hours, allowable workdays, and the phone number of the job superintendent at all construction entrances to allow for surrounding owners to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.		
Utilities and Energy	Potentially Significant	**W-1** The applicant shall provide for the allocation of groundwater pumping rights sufficient to serve the development (40.399 acre feet per year) from the Fox Canyon Groundwater Management Agency to the City of Oxnard, consistent with the ordinances and requirements of the two agencies, prior to recording the final map for the project.	Less Than Significant	Water Division

Rio Urbana Project

Initial Study-Mitigated Negative Declaration No. 2017-04

prepared by

City of Oxnard
Community Development Department
Planning Division
214 South C Street
Oxnard, California 93030
Contact: Chris Williamson, AICP

prepared with the assistance of

Rincon Consultants, Inc.
1530 Monterey Street, Ste. E
San Luis Obispo, California 93401

November 2019

Table of Contents

Tables

Figures

Attachments

CITY OF OXNARD CEQA INITIAL STUDY CHECKLIST

This FINAL Initial Study-Mitigated Negative Declaration includes clarifications that were made in response to questions from the Planning Commission on October 3, 2019. The DRAFT MND, Responses to Comments, and Technical Appendices are available at the City of Oxnard Planning Division CEQA documents webpage: https://www.oxnard.org/city-department/community-development/planning/environmental-documents/

Project Title: Rio Urbana Project (Tentative Subdivision Map for Tract No. 5998)

Lead Agency Name and Address:

City of Oxnard
Community Development Department
Planning Division
214 S. C Street
Oxnard, California 93030

City of Oxnard Contact Person and Phone Number:

Chris Williamson, AICP, Contract Planner
(805) 385-8156

Project Location:

2714 East Vineyard Avenue and Rio School Lane
Assessor's Parcel Number (APN) 145-0-232-01

Co-Applicants:

El Rio School District
2500 East Vineyard Avenue
Oxnard, California 93036

The Pacific Companies
430 East State Street, Suite #100
Eagle, Idaho 83616

Project Contacts:

Tony Talamante, P.E.
Caleb Roope

Oxnard General Plan Designation: SCH – School

Oxnard Zoning: N/A – Unincorporated (County of Ventura)

Project Description: The proposed project includes demolition of the existing school buildings onsite (formerly El Rio Elementary School) and subdivision of the approximately 10.5 acre parcel into two parcels. The project would develop 167 condominium units in eight, three-story buildings that include a fitness center and 17 low income and 3 moderate income deed-restricted units on the 9.12-acre parcel,

as well as a two-story, 15,100 square foot office building on the 1.12-acre parcel. This office development may be used to relocate the Rio School District administrative offices. The project would also include widening of Vineyard Avenue, associated parking, open space, landscaping, and amenities for on-site residents. The residential units would be made up of one- to three-bedroom attached units. The residential and office structures would have a maximum height of 38 feet. The residential portion of the project would include 431 parking spaces consisting of 169 resident garages, 163 parking spaces, and 99 guest parking spaces. The office portion of the project would include 60 standard parking spaces. Resident amenities include a 1,068 square foot recreation pavilion, four refuse structures, six play areas and a tot lot, and a dog run.

Rio School Lane would be vacated by the County of Ventura with current access and parking for adjoining properties, maintained. This roadway will be included as a private street within the annexation to the City of Oxnard, and will include a 7-foot wide sidewalk to connect existing access points from the adjacent residential area to Vineyard Avenue and its sidewalk. The project site would be accessed by three driveways from Vineyard Avenue. Internal circulation would accommodate fire and emergency access, and solid waste collection vehicles.

The project would require the following entitlements:

1. Annexation to the City of Oxnard (PZ 17-610-01)
2. Oxnard General Plan Amendment (PZ 17-620-01) to change the land use designation from School to Commercial General
3. Pre-Zoning to C-2-PD (PZ 17-560-01)
4. Tentative Subdivision Map that creates two parcels (Parcel 1 on 1.12 acres and Parcel 2 on 9.12 acres; PZ 17-300-03) and 167 condominium parcels and a common area parcel.
5. Special Use Permit (PZ 17-500-05) for development of an office building on Parcel 1
6. Special Use Permit (PZ 17-500-13) for three-story (38 feet high(residential use on Parcel 2
7. Issuance of a Density Bonus (PZ 17-535-02) for provision of three additional units (a 2% density bonus, out of the 20% that is allowable) and reduction in interior yard space from 30 percent to 24 percent

Surrounding Land Uses and Setting: The project site is location within the El Rio community in unincorporated County of Ventura north of the City of Oxnard. The site is bordered by the following land uses:

- North – CG- Commercial General, RL-Low Residential
- East – RL-Low Residential; eight-acre greenhouse and agriculture use which is designated in the Ventura County 2014-2021 Housing Element for affordable housing at 20 units per acre
- South – CG- Commercial General
- West – CG-Commercial General, RL-Low Residential

The project site is a 10.49 acre parcel developed with Rio School Lane and vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that were formerly the El Rio Elementary School campus, closed since 2008. Portions of the site are currently utilized as parking and dispatch for school buses and storage.

The project site is shown in the context of the City's planning area boundaries on Figure 1. Figure 2 shows the project site boundary as well as the City's 2030 General Plan land use designations for the site

and surrounding properties. Figure 3 shows the project site boundary as well as the existing County of Ventura zoning designations. Figure 4 shows the proposed site plan for the project.

Other Public Agencies Whose Approval is Required:

- *Ventura Local Agency Formation Commission* – Annexation to the City of Oxnard and Annexation to the Calleguas Municipal Water District;~~,~~ Detachment from the Ventura County Resource Conservation District, Ventura County Fire Protection District, and Ventura County Service Area No. 32.
- *California Department of Transportation* – Approval of Vineyard Avenue (State Route 232) improvements.
- *County of Ventura* – Vacation of Rio School Lane, Detachment from County of Ventura service areas and districts.
- *Calleguas Municipal Water District and Metropolitan Water District of Southern California*– Annexation.
- *Fox Canyon Groundwater Management Agency* – Transfer of allocations for groundwater use.
- *Ventura County Watershed Protection District* – Stormwater runoff compliance and permitting

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code 21080.3.1?

[Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.]

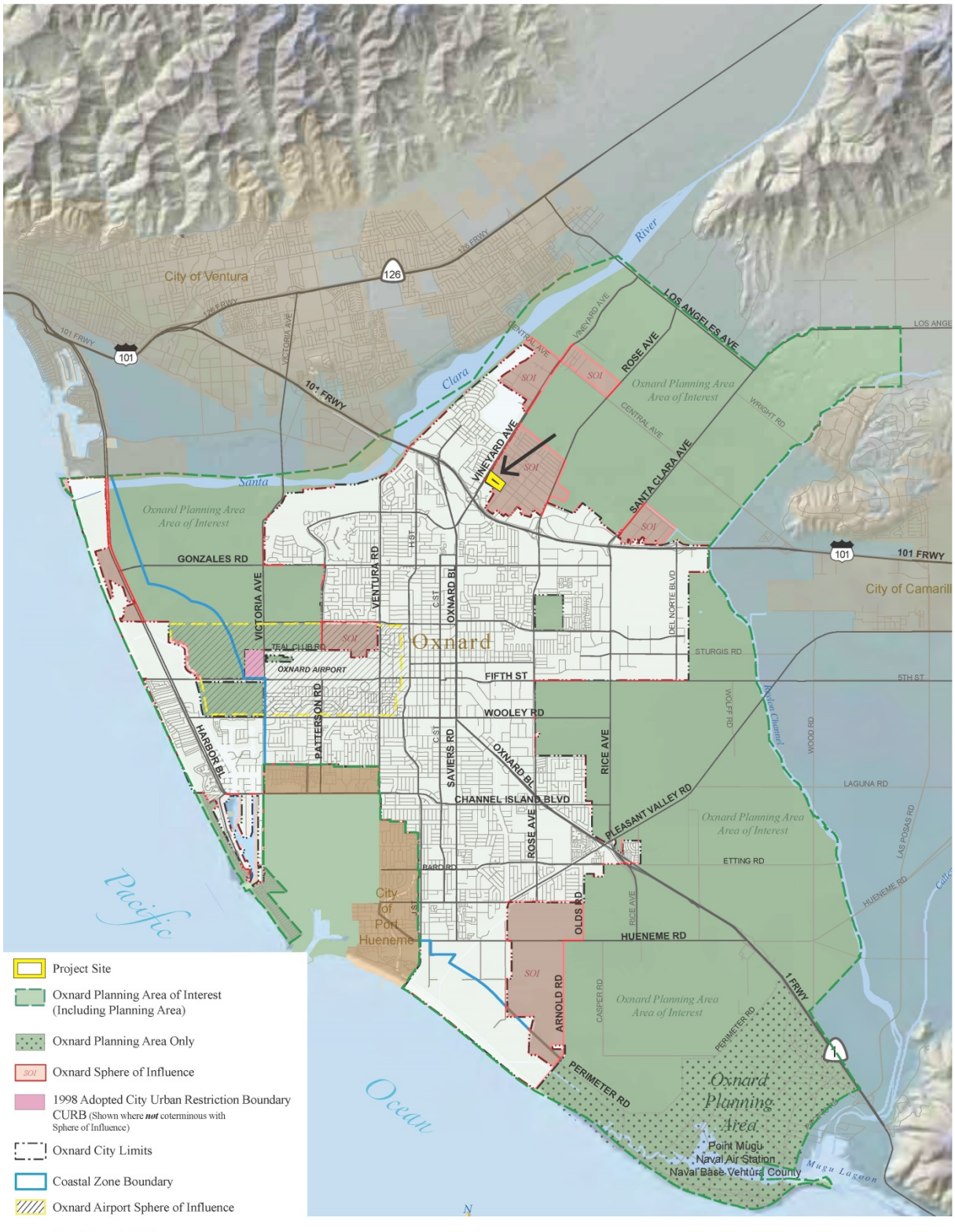
Project Plans:

Tentative Subdivision Map for Tract No. 5998
Civil Site Plan
Architectural Site Plan
Project Plans
Landscape Plan

Appendices:

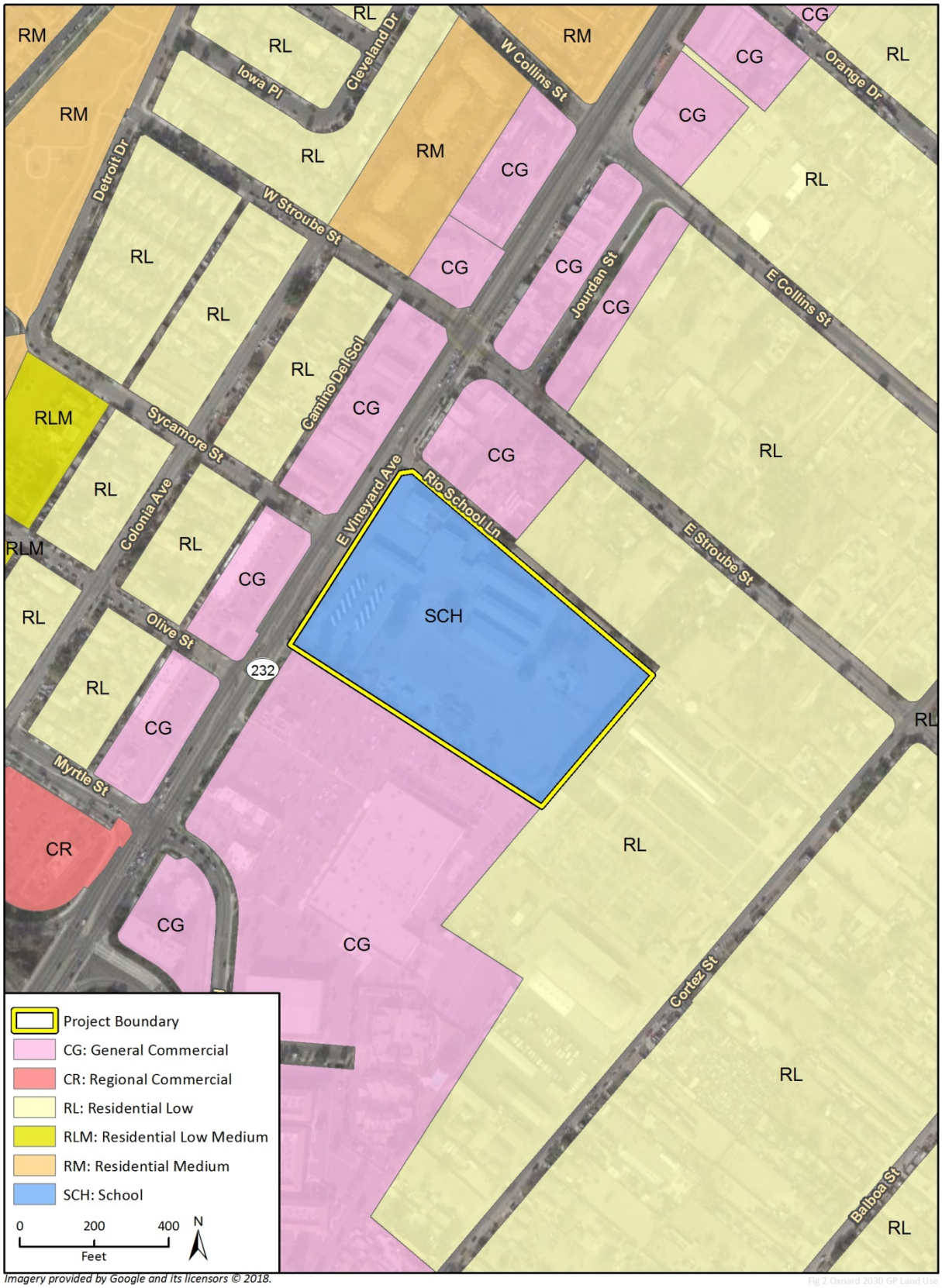
Appendix A – Air Quality Study
Appendix B – Health Risk Assessment of Diesel Emissions
Appendix C – Biological Assessment Report
Appendix D – Climate Change and Greenhouse Gas Study
Appendix E – Phase I Cultural Resource Assessment and Paleontological Resources Assessment
Appendix F – MS4 Compliance and Onsite Drainage Letter
Appendix G – Noise Study
Appendix H – Revised Traffic and Circulation Study
Appendix I – Wet Utility Preliminary Investigation and Domestic Water Supply and Demand Memorandum

Figure 1 Project Location and Planning Area Boundaries



Source: City of Oxnard, 2010.

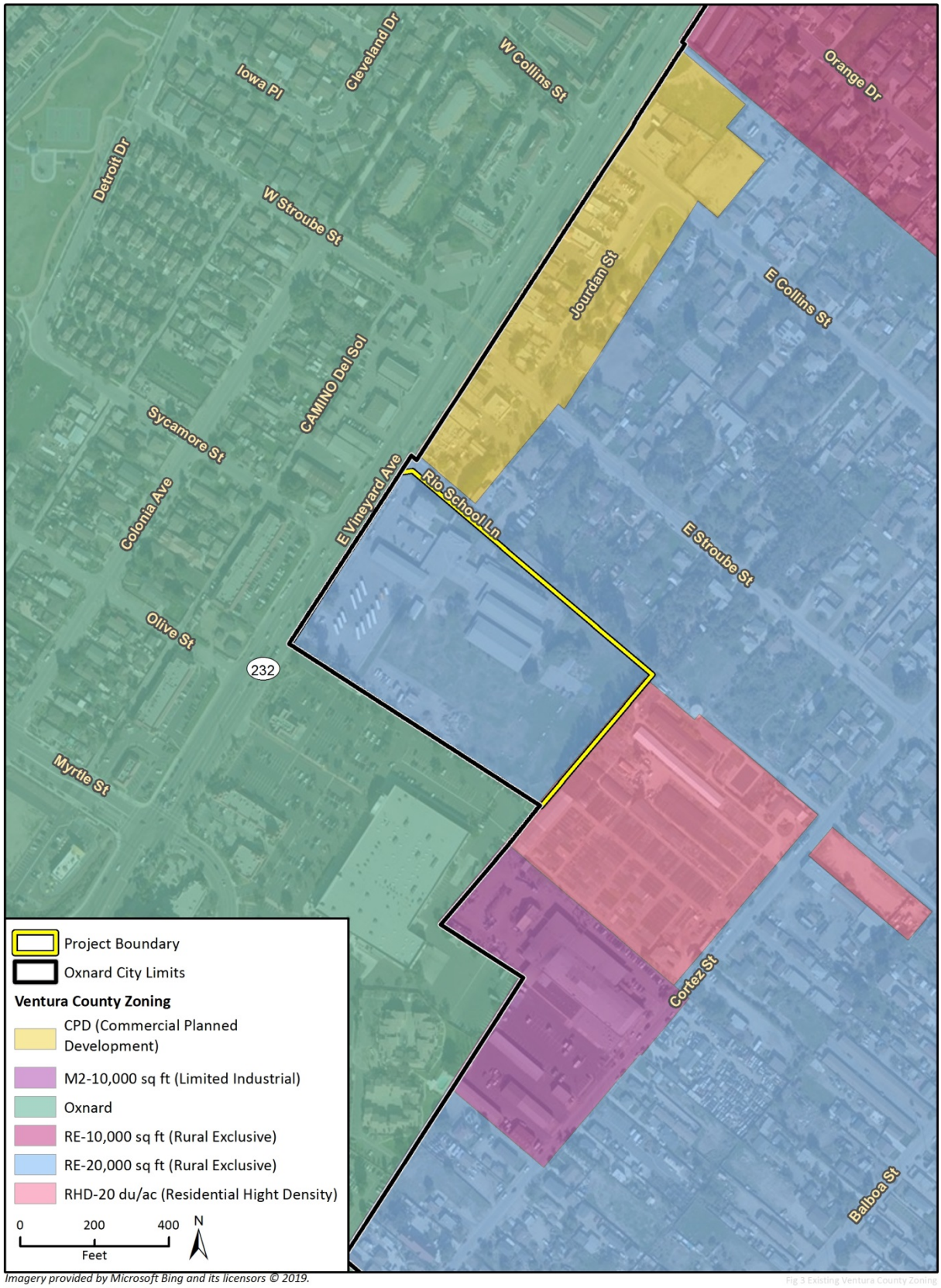
Figure 2 Project Site and City Land Use Designations



Imagery provided by Google and its licensors © 2018.
Additional data provided by City of Oxnard, 2011.

Fig 2 Oxnard 2030 GP Land Use

Figure 3 Project Site and Existing County Zoning



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Additional data provided by Ventura County, 2018.

Fig 3 Existing Ventura County Zoning

Figure 4 Proposed Site Plan

Source: ktgy Architecture + Planning 2019

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

☐ Aesthetics and Urban Design	☐ Climate Change and Greenhouse Gas Emissions	■ Hydrology and Water Quality	☐ Population, Education, and Housing
☐ Agricultural Resources	■ Cultural Resources and Tribal Cultural Resources	☐ Land Use and Planning	☐ Public Services and Recreation
☐ Air Quality	☐ Geology and Soils	☐ Mineral Resources	☐ Transportation and Circulation
■ Biological Resources	☐ Hazards and Hazardous Materials	■ Noise	■ Utilities and Energy

DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature  **Date** 7.18.19

Printed Name Isidro Figueroa **For**

EVALUATION OF ENVIRONMENTAL IMPACTS

1. When the answer to a checklist question is “yes”, either the “Potentially Significant Impact” or “Less than Significant Impact with Mitigation Incorporated” box will typically be checked. When the answer to a checklist question is “no,” either the “Less than Significant Impact” or “No Impact” box will typically be checked.

2. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

3. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

4. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is typically required.

5. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

6. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

7. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

8. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

9. The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question; and

   b. The mitigation measure identified, if any, to reduce the impact to less than significance

ISSUE TOPICS

I. AESTHETICS AND URBAN DESIGN	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project have a substantial adverse effect on a scenic vista such as an ocean or mountain view from an important view corridor or location as identified in the 2030 General Plan or other City planning documents?	☐	☐	■	☐
2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway, or route identified as scenic by the County of Ventura or City of Oxnard?	☐	☐	■	☐
3. Would the project substantially degrade the existing visual character or quality of the site or its surroundings such as by creating new development or other physical changes that are visually incompatible with surrounding areas or that conflict with visual resource policies contained in the 2030 General Plan or other City planning documents?	☐	☐	■	☐
4. Would the project add to or compound an existing negative visual character associated with the project site?	☐	☐	■	☐
5. Would the project create a source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	■	☐

1. The project site is currently developed with Rio School Lane and vacant buildings that were formerly the El Rio Elementary School campus. The existing school development does not constitute the type of urban landscape considered an important aesthetic resource in the City's 2030 General Plan. Therefore, changes to the appearance of the site from surrounding viewpoints due to the project would not result in an adverse effect on a scenic vista. No ocean, mountain, or other identified scenic views are provided from or through the site due to the existing development on the site. Therefore, redevelopment of the project site resulting in greater development density and intensity

than the existing condition would not have a substantial adverse effect on any identified scenic vistas. This impact would be less than significant.

2. According to the California Department of Transportation (Caltrans) Designated Scenic Highway Route Map for Ventura County, the nearest Eligible State Scenic Highway to the project site is United States Highway 101 (U.S. 101). However, U.S. 101 is not officially designated as a State Scenic Highway and does not provide views of the project site due to intervening development and vegetation. According to Section 5.3.2 of the Background Report for the 2030 General Plan, Vineyard Avenue between Los Angeles Avenue and Patterson Road, from which the project site is visible, is included in the City's designated Scenic Highway/Roadway System. According to 2030 General Plan Goal CD-9.4, View Corridor Preservations, a landscaped buffer corridor of at least 30 feet deep is required along designated scenic corridors and other major transportation corridors. Views of the site from Vineyard Avenue are dominated by the existing development of the former El Rio Elementary School campus and current utilization for school bus parking and storage. No scenic resources are prominently visible onsite from Vineyard Avenue. Additionally, in compliance with 2030 General Plan Goal CD-9.4, the project has been designed with a 30-foot landscaped setback from the public right-of-way on Vineyard Avenue. With this design provision, the project would not result in substantial damage to scenic resources within a state or local scenic route. This impact would be less than significant.

3,4. The project site currently possesses a generally urban character due to the existing one- and two-story buildings comprising the former El Rio Elementary School campus onsite. The site is located in a developed portion of the County of Ventura's unincorporated El Rio community along East Vineyard Avenue and adjacent to the City of Oxnard, with surrounding uses consisting of various residential and general commercial uses that are similar in character. The proposed condominium residential units and amenities would be a maximum of three stories or 38 feet in height and would provide front, rear, and side setbacks, consistent with the proposed City of Oxnard C-2 zoning designation and R-3 development standards for residential development in the C-2 zone. The office building would be two stories and 35 feet in height. The proposed buildings would be designed to complement the urban character of surrounding uses. The proposed development would also include open space and landscaping features around new buildings to enhance the visual character, pursuant to 2030 General Plan Goal CD-9.4, and is subject to the City's design review process to ensure consistency with the City's goals, policies, and design guidelines. Therefore, as proposed, the project would be visually compatible with the character and quality of the surrounding urban development and consistent with City visual resource policies. This impact would be less than significant.

5. The project site currently contains facilities of a former elementary school that provide lighting and potential sources of glare on the site. Nighttime lighting sources also exist along East Vineyard Avenue in the vicinity of the site. New sources of lighting associated with the project would include security and street lighting typical of the surrounding residential and commercial development and would comply with Section 16-320 of the Oxnard Municipal Code, which specifies on-site lighting requirements that are applicable in all zones of the City. Exterior building materials would consist of non-reflective, textured surfaces and non-reflective, glazed glass on the building. The project would not include any sources of high-intensity lighting. As a standard condition of approval, all proposed

lighting would be subject to the City's review and approval process, which would include the preparation of a photometric plan for the project. Due to the existing ambient light conditions in the surrounding area as well on the project site, the proposed use of non-reflective building materials, and compliance with the City's lighting requirements and review processes, the project would not create a source of substantial light or glare that would adversely affect day or nighttime views in the area. This impact would be less than significant.

Cumulative Impact Analysis: The project would establish new residential and office uses on a previously developed site in an urban area resulting in no direct or indirect adverse project-level impacts, or contribution to cumulative impacts to aesthetic and visual resources. With incorporation of standard conditions of approval for compliance with City lighting requirements, impacts of the project with respect to glare and lighting would not be cumulatively considerable.

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II. AGRICULTURAL RESOURCES	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use?	☐	☐	☐	■
2. Would the project conflict with existing zoning for agricultural use or an existing Williamson Act contract?	☐	☐	☐	■
3. Would the project involve other changes in the existing environment that, due to their location or nature, could result in conversion of off-site farmland to non-agricultural use?	☐	☐	☐	■

1,2. According to the California Department of Conservation (DOC) Ventura County Important Farmland 2016 and Ventura County Williamson Act FY 2015-2016 maps, the project site and surrounding properties consist entirely of Urban and Built-up Land. The project would not covert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use or conflict with land placed under an existing Williamson Act contract. There would be no impacts associated with conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, or conflicts with existing zoning for agricultural use or an existing Williamson Act contract.

3. The project would result in new urban development on an infill site that is already developed with urban uses. The site and surrounding properties do not contain any farmland or other agricultural uses. The project would not involve changes that could result in the conversion of off-site farmland to non-agricultural use. There would be no impact.

Cumulative Impact Analysis: In 1998, the Save Open Space and Agricultural Resources (SOAR) initiative was adopted establishing the City Urban Restriction Boundary (CURB), which defines the urban development boundary for the City of Oxnard until December 31, 2020, and re-designating all land designated "Agricultural Planning Reserve (AG/PR)" as "Agriculture (AG)". The SOAR initiative also established a City Buffer Boundary (CBB) which lies outside of the CURB line and is coterminous with the Oxnard Area of Interest. Change to the CURB line or an agricultural land use designation within the CBB generally requires majority approval of Oxnard voters, with some exceptions (City of Oxnard 2011). In compliance with 2030 General Plan Policy CD-6.2, which supports the preservation of the SOAR requirements, the project would preserve agricultural land and uses within the City's Planning Area by providing for housing on a previously developed site and relieving development pressure beyond the CURB line or on Agriculture-designated lands. As such, the project would not contribute to cumulative impacts to agricultural resources.

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III. AIR QUALITY	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project conflict with or obstruct implementation of the Ventura County AQMP?	☐	☐	■	☐
2. Would the project violate any federal or state air quality standard or contribute substantially to an existing or projected air quality standard violation?	☐	☐	■	☐
3. Would the project result in a cumulatively considerable net increase of any criteria in excess of quantitative thresholds recommended by the VCAPCD)?	☐	☐	■	☐
4. Would the project expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for toxic air contaminants?	☐	☐	■	☐
5. Would the project create objectionable odors affecting a substantial number of people?	☐	☐	■	☐

Setting

An Air Quality Study was completed for the project by Meridian Consultants, LLC in August 2017 and is included as Appendix A. The Air Quality Study assesses and discusses the potential air quality impacts that may occur with the implementation of the project. The analysis estimates future emission levels resulting from construction and operation of the project, and identifies the potential for significant impacts based on adopted thresholds. An evaluation of the project's contribution to potential cumulative air quality impacts is also provided in the study. A Health Risk Assessment (HRA) of Diesel Emissions was also completed by Meridian Consultants, LLC in July 2017 and is included as Appendix B. The HRA assesses potential health risk impacts on future residents at the project site from exposure to diesel emissions generated by vehicles on U.S. 101. The AERMOD dispersion model was used to determine concentrations of diesel particulate matter (DPM) on the project site generated on U.S. 101 located approximately 1,000 feet to the south of the project site. The following discussion of air quality setting and impacts is based on the assessment and findings included in the Air Quality Study and HRA.

Federal and State standards have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulates less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$). California has also set standards for sulfates, hydrogen sulfide, vinyl

chloride, and visibility reducing particles. Local air pollution control districts are required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards.

The project site is located in the County of Ventura, adjacent to the City of Oxnard, in the South Central Coast Air Basin (SCCAB). The South Central Coast Air Basin comprises Ventura County, Santa Barbara County, and San Luis Obispo County. The project site is also located in the Ventura County Air Pollution Control District (VCAPCD) boundaries. Air basins in which air pollutant standards are exceeded are referred to as "non-attainment areas." Ventura County is a non-attainment area for federal eight-hour ozone standard. The County is as also a non-attainment area for the State one-hour and eight-hour ozone standards (Final 2016 Ventura County Air Quality Management Plan [2016 AQMP], 2017).

Ventura County Air Pollution Control District is responsible for comprehensive air pollution control in the SCCAB including reducing emissions from stationary, area, and mobile sources. The Ventura County Air Pollution Control Board adopted the 2016 AQMP on February 14, 2017. The 2016 AQMP presents the County's strategy to attain the 2008 federal eight-hour ozone standard by 2020, as required by the federal Clean Air Act Amendments of 1990 and applicable U.S. EPA clean air regulations. Table 1 includes the current federal and State air quality standards and the attainment status of pollutants.

Table 1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	Federal Attainment (Y/N)	California Standard	State Attainment (Y/N)
Ozone	8-Hour	0.070 ppm	N	0.070 ppm	N
	1-Hour	-	-	0.09 ppm	N
Carbon Monoxide	8-Hour	9.0 ppm	Y	9.0 ppm	Y
	1-Hour	35.0 ppm	Y	20.0 ppm	Y
Nitrogen Dioxide	Annual	0.053 ppm	Y	0.030 ppm	Y
	1-Hour	0.100 ppm	Y	0.18 ppm	Y
Sulfur Dioxide	Annual	–	–	–	–
	24-Hour	–	–	0.04 ppm	Y
	1-Hour	0.075 ppm	Y	0.25 ppm	Y
PM_{10}	Annual	–	–	20 $\mu g/m^3$	N
	24-Hour	150 $\mu g/m^3$	Y	50 $\mu g/m^3$	N
$PM_{2.5}$	Annual	12 $\mu g/m^3$	Y	12 $\mu g/m^3$	Y
	24-Hour	35 $\mu g/m^3$	Y	–	–
Lead	30-Day Average	–	–	1.5 $\mu g/m^3$	Y
	3-Month Average	0.15 $\mu g/m^3$	Y	–	–

Notes: Y = yes, N = no, ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter
Source: CARB 2017a and VCAPCD 2017

Ambient Air Quality

To identify ambient concentrations of criteria pollutants, VCAPCD operates eight air quality monitoring stations throughout the County. The monitoring station located closest to the project site and most representative of air quality within the City of Oxnard is the El Rio monitoring station, which is located on the campus of Rio Mesa High School at 545 Central Avenue, approximately 1.75 miles to the north of

the project site. Table 2 summarizes the annual air quality data over the past three years of available data for the local airshed (data from 2018 is not yet available).

Table 2 Ambient Air Quality Data at the El Rio Monitoring Station

Pollutant	2015	2016	2017
Ozone, 8-Hour, ppm			
Number of days of State exceedances (> 0.09 ppm)	0	1	1
Number of days of Federal exceedances (> 0.075 ppm)	0	1	1
Nitrogen Dioxide, ppm – Worst Hour			
Number of days of State exceedances (> 0.18 ppm)	0	0	0
Particulate Matter, < 10 microns, µg/m^3			
Number of samples of State exceedances (> 50 µg/m^3)	6	14	29
Number of samples of federal exceedances (> 150 µg/m^3)	0	0	1
Particulate Matter, < 2.5 microns, µg/m^3			
Number of samples of federal exceedances (> 35 µg/m^3)	0	0	4

Notes: ppm = parts per million, µg/m^3 = micrograms per cubic meter
Source: CARB 2017b

1. According to the Ventura County Air Quality Assessment Guidelines (VCAPCD 2003), a project must conform to the local general plan and must not result in or contribute to an exceedance of the County's projected population growth forecast in order to be consistent with the AQMP. According to the California Department of Finance (DOF) population and housing estimates, the City had a total population of 209,879 people and an average household size of 3.97 persons in January 2019. Using the average household size, the 167 proposed condominiums included in the project would accommodate approximately 663 people. This would result in a total population of 210,542 people in the City upon project implementation. VCAPCD's AQMP considers regional population forecasts developed by the Southern California Association of Governments (SCAG). SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy growth forecast projects a population of 237,300 people in the City in the year 2040. The total population in the City with implementation of the project is within SCAG's most recent growth projections for the City. As such, the growth forecast is also within the population growth parameters considered in the AQMP, which is updated by the VCAPCD to manage air emissions in the County of Ventura in accordance with local, State, and federal standards. Therefore, development of the project would not obstruct implementation of the AQMP or attainment of State or federal air quality standards resulting in a less than significant impact.

2. Construction emissions would be temporary in nature and would occur within the project area. The primary source of reactive organic gases (ROG), nitrogen oxides (NO_X), CO, and sulfur oxides (SOX) emissions is from internal combustion of construction equipment exhaust and on-road haul-truck trips, while the majority of particulate matter emissions would occur as a result of fugitive dust emissions generated during grading and excavation activities. Primary sources of PM_{10} and $PM_{2.5}$ emissions would be clearing activities, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth surfaces. As detailed in the Air Quality Study for the project, VCAPCD's Air Quality Assessment Guidelines recommend significance

thresholds for projects proposed in Ventura County. Under these guidelines, projects that generate more than 25 pounds per day (lb/day) of ROG or NO_X are considered to individually and cumulatively jeopardize attainment of the federal ozone standard and thus have a significant adverse impact on air quality. However, VCAPCD's 25 lb/day threshold for ROG and NO_X do not apply to construction emissions because construction emissions are not permanent. Nevertheless, for construction impacts, the VCAPCD recommends imposition of mitigation if emissions of either pollutant exceed 25 lb/day. The VCAPCD requires minimizing fugitive dust through various dust control measures as documented in Rule 55.

As detailed in the Air Quality Study, project construction would generate up to 80.2 lb/day of ROG and 130.2 lb/day of NO_X. The Air Quality Study assumed development of 182 dwelling units, 15,100 square feet of office space, and 463 parking spaces on the project site. The updated project, as proposed, would result in 15 fewer dwelling units and 32 fewer parking spaces than anticipated in the Air Quality Study. Therefore, the emissions estimates therein are considered a conservative estimate for the project as proposed. The project would be required to implement all applicable standard VCAPCD emissions control measures including dust control measures, such as watering graded areas, covering trucks hauling excavated soil, soil stabilization methods, and street sweeping; and construction equipment controls, such as minimizing idle time, maintaining equipment engines, using alternatively fueled equipment, and minimizing the number of pieces of equipment operated simultaneously. Additionally, all construction activities would be required to adhere to the VCAPCD Rule 50 for Opacity, Rule 51 for Nuisance, and Rule 55 for Fugitive Dust. Compliance with these measures would result in less than significant impacts to air quality associated with project construction emissions.

As detailed in the Air Quality Study, operational emissions associated with the project would be generated by both stationary and mobile sources as a result of normal day-to-day use of the proposed residential units and office facilities. Stationary emissions would be generated by the consumption of natural gas for space and water heating equipment. Mobile emissions would be generated by vehicles traveling to and from the project site. Project-generated operational emissions were estimated based on the proposed land use assumptions and vehicle emissions factors using the California Emissions Estimator Model (CalEEMod). According to the CalEEMod data output for the project (included in Appendix A of the Air Quality Study), project operations would generate up to 12.4 lb/day of ROG and 6.8 lb/day of NO_X. As discussed above, these emissions estimates are conservative as the project would result in development of fewer dwelling units and parking spaces than development assumed in the Air Quality Study for the project. Furthermore, these emissions would not exceed the VCAPCD significance thresholds of 25 lb/day. Therefore, impacts to air quality associated with new stationary sources of emissions and increased vehicle trips in the area as a result of the project would be less than significant.

3. The SCCAB is currently a nonattainment area for both the federal and State standards for ozone and the State standard for PM_{10}. With regard to determining the significance of the project's contribution to air quality violations, the VCAPCD neither recommends quantified analyses of cumulative operational emissions nor provides methodologies or threshold of significance to be used to assess cumulative construction or operational impacts. Instead, the VCAPCD recommends

that a project's contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project specific impacts. Therefore, if implementation of the project would generate operational emissions that exceed the VCAPCD-recommended daily thresholds for project-specific impacts, then the project would also cause a cumulatively considerable increase in emissions for those pollutants for which SCCAB is in nonattainment. As previously discussed, operational daily emissions associated with the project would not exceed VCAPCD significance thresholds. Therefore, cumulative impacts to air quality would be less than significant.

4. Neither the State of California nor the VCAPCD has developed a quantitative threshold for the purposes of evaluating the health impacts on residential developments from exposure to Toxic Air Contaminants (TAC) emissions associated with a nearby freeway or high-volume roadway. However, in absence of a threshold specific to assessing health impacts from a freeway, the State's significant risk for exposures to carcinogens thresholds of 10 per one million for cancer risk and 1 for hazard index (HI) were determined to be the most appropriate thresholds for use in this HRA analysis for the project. The analysis in the HRA found that the maximum cancer risk at the project site from DPM emissions generated by diesel-vehicle travel along U.S. 101 is 1.06 per 100,000 or 10.6 per one million, exceeding the State significance criteria. Additionally, the maximum non-cancer HI for the project's residents would be 0.18, which would not exceed the State significance criteria.

   Project construction would result in short-term emissions of diesel particulate matter (DPM), which consists of exhaust $PM_{2.5}$ and PM_{10} and is a TAC. The project would be required to comply with the CARB Airborne Toxic Control Measures' anti-idling measure, which limits idling to no more than five minutes at any location for diesel-fueled commercial vehicles, as well as the required and applicable Best Available Control Technology and the In-Use Off-Road Diesel Vehicle Regulation to avoid and/or reduce emissions of DPM associated with project construction to the maximum extent possible.

   During long-term project operations, TACs could be emitted as part of periodic maintenance operations, cleaning, and painting, and from periodic delivery trucks and service vehicles onsite. However, these uses are expected to be occasional and result in minimal exposure to on- and off-site sensitive receptors. Given that the project consists of residential and office uses, the project would not include sources of substantive TAC emissions identified by the VCAPCD- or CARB-siting recommendations.

   Therefore, with implementation of the required CARB DPM control measures and minimal sources of TAC emissions associated with project operations, the project would not expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for TACs and would not exacerbate existing environmental conditions associated with DPM emissions at the site from U.S. 101. Impacts would be less than significant.

5. Land uses likely to produce objectionable odors include agriculture, chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants. The project would not involve development or operation of any of these types of uses. Potential activities that may emit odors during project construction activities include the use of architectural coatings and solvents and the combustion of diesel fuel in on- and

off-road equipment. VCAPCD Rule 74.2 would limit the amount of ROGs in architectural coatings and solvents. In addition, project construction activities would be required comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Through mandatory compliance with VCAPCD rules and CARB idling limitation, construction activities would not create objectionable odors affecting a substantial number of people. This impact would be less than significant.

Cumulative Impact Analysis: The project's contribution to cumulative impacts to air quality is evaluated under issue 3. As previously discussed, air pollutant emissions would be generated by the consumption of natural gas for space and water heating equipment and by vehicles traveling to and from the project site. These emissions would not exceed the VCAPCD significance thresholds of 25 lb/day at the project level and, therefore, were determined to result in a less than significant cumulative impact to air quality.

IV. BIOLOGICAL RESOURCES	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
2. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations adopted by the California Department of Wildlife and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	■
3. Would the project have a substantial adverse effect on federally protected waters of the U.S. as defined by Section 404 of the federal Clean Water Act or protected waters of the state as defined by Section 1600 et seq. of the California Fish and Game Code (including, but not limited to, marshes, vernal pools, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	■
4. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
5. Would the project conflict with any local policies or ordinances protecting biological resources?	☐	■	☐	☐

6. Would the project conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

The project site is located in a commercial and urban area dominated by ornamental and ruderal vegetation communities. There are no areas with strictly native vegetation and no drainages or waterways are present on the site. The elevation of the site is approximately 90 feet above mean sea level. The entire property had been previously graded and the terrain is flat.

A Biological Assessment Report (BA) was prepared for the project by BioResource Consultants, Inc. in July 2017 and is included as Appendix C. The BA document describes the existing conditions of biological resources on the project site and provides an analysis of biological resources, including the potential occurrence of special-status species and their habitats, on the site.

1. A large portion of the project site is paved and built out with buildings from the former El Rio Elementary School campus. Vegetation on the site consists mainly of ruderal fields. Ornamental shrubs border most fence lines, buildings, and parking lots on the developed portion of the site. The remainder of the site is also bordered by ornamental trees and shrubs. There are three Heritage trees, as defined by the Ventura County Tree Protection Ordinance, in the more central areas of the site. Heritage trees can be a tree of any species that is 90 inches in circumference for a single trunk. Heritage trees on the project area include a single coast live oak (*Quercus agrifolia*) and two velvet ash (*Fraxinus velutina*). All three of these trees are native and provide nesting habitat for birds. During a site visit for the BA, northern mockingbird (*Mimus polyglottos*) fledglings as well as many other adult birds were observed foraging in two of the Heritage trees. Throughout the area of the site with existing school buildings, house sparrows (*Passer domesticus*) were observed nesting. These birds are not protected by the Migratory Bird Act and commonly harass native birds and take over their active nests. Additionally, an inactive American crow (*Corvus brachyrhynchos*) nest was observed in the larger Heritage velvet ash tree. Courting behavior was observed in the field by Anna's hummingbirds (*Calypte anna*) and Cassin's kingbirds (*Tyrannus vociferans*). Although nesting habitat occurs where tall, dense vegetation occurs on the property, high disturbance in this urban area and disconnect of this property from any wildlife corridors results in low likelihood that a special-status bird would be nesting in marginal habitat on site. Nesting raptors could occur adjacent to the property in eucalyptus trees along Rio School Lane on the northeast border.

   The Federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (FGC; §§ 3503, 3503.5, 3511, 3513, and 3800) protect most native birds. In addition, the federal and state endangered species acts protect some bird species listed as threatened or endangered. FGC § 3513 relies on the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds, except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, FGC (§§ 3503, 3503.5, 3511, and 3800) further protects nesting birds, including passerine birds, raptors, and state "fully protected" birds. These regulations generally apply during the breeding season, because unlike adult birds, eggs and chicks are unable

to escape impacts. FGC § 3503.5 protects birds of prey, and their nests and eggs against take, possession, or destruction.

According to the BA, the project site is not located within any United States Fish and Wildlife Service (USFWS)-designated critical habitat. A review of the California Natural Diversity Database (CNDDB) and other existing records within the vicinity of the site showed 116 species having previously been reported in the area. Of these 116 species, two species, Davidson's saltscale (*Atriplex serenana var. davidsonii*) and Monarch butterflies (*Danaus plexippus* pop. 1), have marginal habitat on the project site. However, due to the high level of disturbance and existing development, these species are unlikely to occur onsite. Therefore, the project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or USFWS, because no listed species are expected to occur at the project site. Additionally, Heritage trees onsite would be required to be protected in compliance with 2030 General Plan Policy ER-10.2, which is intended to protect certain significant trees on private and public property through replacement or transplantation, as well as the City's Landscape Standards general requirements for the preservation of existing trees. Nevertheless, construction of the project could result in potential impacts to raptors and protected nesting birds located in Heritage trees on the site and in trees near the northeaster boundary of the site. Compliance with mitigation measure BIO-1 would ensure impacts are less than significant.

Mitigation Measure

The following mitigation measures would reduce impacts to a less than significant level.

BIO-1 Nesting Bird and Raptor Survey and Avoidance. In the event that the proposed action is planned to occur within the general bird nesting season, a pre-construction nesting bird survey shall be conducted by a qualified biologist. The nesting season is generally considered February 1 through August 31, with a peak from March to June; however, these dates vary by year depending on prey availability, weather, and other factors. In the event an active bird is observed in the habitats to be removed or in other habitats within 100 feet for songbirds and 500 feet for raptors of the construction work areas, all construction work in the suitable habitat or within 100 feet/500 feet of the suitable habitat must be delayed until after September 1st, or surveys must be continued in order to locate any nests. If an active nest is found, clearing and construction within 100 feet/500 feet of the nest shall be postponed until the nest is vacated and juveniles have fledged, and until there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest site shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the ecological sensitivity of the area.

2. A large portion of the project site is paved and built out with buildings from the former El Rio Elementary School campus, and the entire property had been previously graded and the terrain is flat. Riparian vegetation or other sensitive natural community types do not occur on the project site or within the project vicinity. There are no sensitive natural communities identified in plans,

regulations, or by regulatory agencies within the project site. The proposed project would have no impact to riparian habitat or other sensitive natural communities.

3. According to the USFWS National Wetlands Inventory Wetlands Mapper database, no wetlands or other surface waters exist on the project site. Therefore, the project would not result in any impacts to State or federally protected waters.

4. The project site would not be expected to support wildlife movement due to the disturbed nature of the project site, adjacent urban development, and disconnect from any wildlife corridors. Additionally, the project would be required to comply with the provisions of the MBTA to avoid potential impacts to migratory birds. Therefore, the project would result in less than significant impacts associated with wildlife migration and use of nursery sites.

5. As previously discussed, the project would be required to ensure that on-site Heritage tree protection occurs in compliance with the requirements of the 2030 General Plan Policy ER-10.2 and the City's Landscape Standards. Therefore, with implementation of the requirements of the Tree Protection Ordinance, the project would result in a less than significant impact associated with conflicts with local policies or ordinances protecting biological resources.

6. According to the Environmental Impact Report for the City of Oxnard 2030 General Plan (2009), no established or planned Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan exists in the City Planning Area, which includes the project site. Therefore, the project would not result in any impact associated with conflict with the provisions of such plan.

Cumulative Impact Analysis: Impacts to biological resources in the Planning Area were analyzed by the 2030 General Plan EIR at a programmatic level, including all development facilitated by the 2030 General Plan, and found to be less than significant with implementation of uniformly applied development policies and regulations. The proposed project would have less than significant impacts with respect to biological resources and would be subject to the City's uniformly applied development policies and regulations. Therefore, the project would not contribute to or result in significant cumulative impacts to biological resources.

V. Climate Change and Greenhouse Gas Emissions	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
2. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases or otherwise conflict with the state goal or reducing greenhouse gas emissions in California?	☐	☐	■	☐
3. Would the project contribute or be subject to potential secondary effects of climate change (e.g., sea level rise, increase fire hazard)?	☐	☐	■	☐

A Climate Change and Greenhouse Gas (GHG) Study was prepared for the project by Meridian Consultants, LLC. in August 2017 and is included as Appendix D. The GHG Study assesses and discusses the potential GHG impacts that may occur with implementation of the project. The analysis in the GHG Study estimates future emission levels at surrounding land uses resulting from construction and operation of the project, and identifies the potential impacts. The findings of the GHG Study are summarized in this section.

Setting

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34 degrees Celsius (°C) cooler (CalEPA 2006). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the GHGs that are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion. CH_4 results from fossil fuel combustion as well as off-gassing associated with agricultural practices and landfills. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes.

Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. According to the CalEPA 2010 Climate Action Team Biennial Report, potential impacts of climate change

in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA 2010). While these potential impacts identify the possible effects of climate change at a global and potentially statewide level, current scientific modeling tools are generally unable to predict what impacts would occur locally with a similar degree of accuracy.

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels), and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, CARB approved a 1990 statewide GHG level and 2020 limit of 427 million metric tons of CO_2 equivalents (MMT CO_2e). The Scoping Plan was approved by CARB on December 11, 2008, and includes GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

In May 2014, CARB approved the 2013 Scoping Plan, the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan defines CARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in Executive Order (EO) S-3-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also illustrates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (CARB 2014).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. As with the 2013 Scoping Plan, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017c).

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

1. According to the GHG Study for the project, CARB, VCAPCD, and the City of Oxnard have not adopted a numerical GHG significance threshold for land use development projects (e.g., residential/commercial projects). Ventura County is adjacent to the South Coast Air Quality Management District (SCAQMD) jurisdiction and is part of the Southern California Association of Governments (SCAG) region. Given the lack of an adopted VCAPCD numerical significance threshold applicable to this project, the significance of the project is evaluated based on the proposed screening level of 3,000 MT CO_2e per year established by the adjacent SCAQMD. The GHG Study for the project found that the total project construction emissions would be approximately 713.5 MT CO_2e per year and construction emissions amortized over 30 years would be approximately 23.8 MT CO_2e per year. The GHG Study also found that the GHG emissions associated with the project operations would result in 2,184.7 MT CO_2e per year. The GHG Study assumed development of 182 dwelling units, 15,100 square feet of office space, and 463 parking spaces on the project site. The updated project, as proposed, would result in 15 fewer dwelling units and 32 fewer parking spaces than anticipated in the GHG Study. Therefore, the emissions estimates therein are considered a conservative estimate for the proposed project. GHG emissions associated with project construction and operations would not exceed the screening threshold of 3,000 MT CO_2e per year and impacts would be less than significant.

2,3. The California Air Pollution Control Officers Association (CAPCOA) suggests making significance determinations on a case-by-case basis when no significance threshold have been formally adopted by a lead agency. This includes evaluating a project's sources of GHG emissions and considering project consistency with applicable emission reduction strategies and goals. As detailed in the GHG Study, the project would be consistent with the policies identified in the City's 2030 General Plan for addressing energy issues of climate change mitigation and adaptation, sea level rise, and energy conservation and generation by incorporating solar panels and implementing features consistent with the latest requirements of the 2016 California Green Building Code. Additionally, as detailed in Table 7 of the GHG Study, the project would be consistent with recommendations presented in the California Climate Action Team Report and the project's post-2020 GHG emissions trajectory is expected to follow a declining trend, consistent with the State's 2030 and 2050 targets. Furthermore, the GHG Study determines that the project would be consistent with the goals of AB 32. The Project would incorporate energy reduction and water conservation measures, identified in the City's 2030 General Plan, that reduce GHG emissions compared to a conventional project of similar size and scope. Additionally, GHG emissions reductions would be achieved through energy-efficient lighting, installation of low-flow appliances, and water conservation.

   In summary, the project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs or otherwise conflict with the state goal or reducing GHGs in California. The GHG reduction strategies incorporated into the project would ensure that the project would not contribute to or be subject to potential secondary effects of climate change. Impacts would be less than significant.

Cumulative Impact Analysis: Development facilitated by the 2030 General Plan would increase overall GHG emissions generated within the City. Analyses of GHG emissions and climate change are cumulative in nature, as they affect the accumulation of GHGs in the atmosphere. Projects that exceed the

thresholds discussed above would have a significant impact on GHG emissions and climate change, both individually and cumulatively. As indicated in issue 1, GHG emissions associated with the project would be less than significant. As a result, the project's contribution to cumulative levels of GHGs would not be cumulatively considerable and cumulative impacts to climate change would be less than significant.

VI. CULTURAL AND TRIBAL CULTURAL RESOURCES	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	■	☐
2. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to State CEQA Guidelines Section 15064.5?	☐	■	☐	☐
3. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	■	☐
4. Would the project disturb any human remains, including those interred outside of formal cemeteries?	☐	■	☐	☐

A Phase I Cultural Resource Assessment (Phase I) report was prepared by Applied Earthworks, Inc. in August 2017 and is included in Appendix E. The assessment consisted of records searches, Native American coordination, a Phase I survey, and documentation and evaluation of the project site, formerly the El Rio Elementary School campus, to identify any cultural resources present. A Paleontological Resource Assessment technical memorandum (memo) was also prepared by Applied Earthworks, Inc. in August 2017 for the site and is also included in Appendix E. The assessment consisted of a museum records search, a literature and geologic map review, and preparation of the memo, to identify any paleontological resources present on the project site.

1. Generally, a cultural resource is considered historically significant if it is 45 years old or older, meets the requirements for listing on the California Register of Historic Resources (CRHR) under any one of the criteria defined in 14 CCR Section 15064.5, and possesses integrity of location, design, setting, materials, workmanship, feeling, and association. According to the Phase I for the project, one potentially historical cultural resource, the former El Rio Elementary School campus, was identified and documented on the project site. However, based on an evaluation of the school site in the Phase I, the El Rio Elementary School campus meets none of the CRHR significance criteria and is not considered a historical resource under CEQA. Therefore, the project would result in less than significant impacts to historical resources because no historic resources are present on the project site.

2, 4. The intensive pedestrian survey conducted for the Phase I failed to identify any prehistoric or historic archaeological resources on the project site. The records search for the Phase I indicated that an isolated, partial prehistoric Native American burial was uncovered while excavating for a storm drain adjacent to Vineyard Avenue less than a quarter mile from the project site. Therefore, there is potential to encounter subsurface cultural deposits during project construction activities and grading and impacts to such resources would be potentially significant. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonable suspected to overlie adjacent remains until the Ventura County Coroner has determined whether or not the remains are subject to the Coroner's authority, pursuant to Section 7050.5 of the California Health and Safety Code. If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of identification. The NAHC will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Under certain circumstances, as stipulated by CEQA Guidelines Section 15064.5, the lead agency or applicant must develop an agreement with the Native Americans for the treatment and disposition of the remains. Additionally, compliance with mitigation measure CUL-2 would be required to ensure impacts are less than significant.

Mitigation Measure

The following mitigation measure would reduce impacts to a less than significant level.

CUL-2 A qualified archaeologist shall monitor all project-related ground-disturbing activities. In the unlikely event that potentially significant archaeological materials are encountered during construction, the applicant must comply with State regulations and City's standard condition of approval for handling such resources.

3. Based on the literature review and museum records search results for the Paleontological Resource Assessment for the project, the paleontological sensitivity of the site was determined in accordance with the Society of Vertebrate Paleontology (SVP; 2010) sensitivity scale. The Quaternary alluvium mapped at the surface of the project site was determined to have a low paleontological resource potential because the deposits are likely too young to contain fossilized material. Project-related ground disturbing activities would primarily disturb surface deposits and, therefore, would not result in impacts to paleontological resources. This impact would be less than significant.

Cumulative Impact Analysis: Impacts to cultural resources in the Planning Area were analyzed by the 2030 General Plan EIR at a programmatic level, including all development facilitated by the 2030 General Plan, and found to be less than significant with implementation of the City's resource protection policies and regulations. With implementation of mitigation measure CUL-2, the project would have less than significant impacts with respect to cultural resources and tribal cultural resources and would be subject to the City's uniformly applied resource protection policies and regulations. Therefore, the project would not contribute to or result in significant cumulative impacts to cultural resources or tribal cultural resources.

VII. GEOLOGY AND SOILS	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist or based on other substantial evidence of a known fault?	☐	☐	☐	■
b. Strong seismic groundshaking that cannot be addressed through compliance with standard Code requirements?	☐	☐	■	☐
2. Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse that cannot be addressed through compliance with standard Code requirements?	☐	☐	■	☐
3. Would the project be located on expansive soil, creating substantial risks to life or property that cannot be addressed through compliance with standard Code requirements?	☐	☐	■	☐
4. Would the project expose people or structures to inundation by seiche or tsunami?	☐	☐	☐	■
5. Would the project rely on dredging or other maintenance activity by another agency that is not guaranteed to continue?	☐	☐	☐	■

1a. The Alquist-Priolo Earthquake Fault Zoning Act (1972) requires the delineation of zones along active faults in California in order to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces. According to the City of Oxnard General Plan Background Report (2006), the General Plan Area, including the project site, is not located within an Alquist-Priolo zone. Therefore, the project would not expose people or structures to potential substantial adverse effects involving the rupture of a known Alquist-Priolo earthquake fault. There would be no impact.

1b.-3. The project site is located in a highly active earthquake region of Southern California and thus is subject to various seismic and geologic hazards, including ground shaking, landslide, lateral spreading, subsidence, liquefaction, or collapse. Seismically induced hazards cover a wide area and are greatly influenced by the distance of a site to the seismic source, soil conditions, and depth to groundwater. As with any location in Southern California, in the event of a strong earthquake (magnitude 6.0 to 7.5) originating near the site or a major earthquake (8.0 magnitude) along the San Andreas Fault, damage to onsite structures associated with these hazards could be severe and loss of life could occur.

According to the City of Oxnard General Plan Background Report (2006), there are no known earthquake faults in the City area. However, active and/or potentially active faults are present in the surrounding region, and some of these may extend into the subsurface beneath the General Plan Planning Area that generally extends from Point Mugu to Wells Road.

As part of the Community Development standard permitting procedure and uniformly applied development conditions, the project applicant and/or their contractors shall submit a site-specific soils investigation prepared by a licensed geotechnical engineer. At a minimum, the study shall include liquefaction and compressible soils characteristics on-site and shall identify any necessary construction techniques or other mitigation measures to prevent significant liquefaction/compressible soils impacts on the proposed project. All recommendations of the report shall be incorporated into the project as conditions of approval. The report shall be submitted concurrently with plans submitted for review by the Building Official. Additionally, the project would be required to comply with local policies and state regulations regarding building standards, hazard mitigation and seismic safety that would minimize risk and exposure to adverse effects of seismic events. Therefore, with compliance with local and State standards and the application of uniformly applied development conditions and standards, the project would have a less than significant impact associated with hazards of existing geological and soil conditions.

3. Expansive soils are generally clayey causing them to swell when wetted and shrink when dried. Wetting can occur naturally in a number of ways (e.g., absorption from the air, rainfall, groundwater fluctuations, lawn watering, and broken water or sewer lines). In hillside areas, as expansive soils expand and contract, gradual downslope creep may occur, eventually causing landslides. Clay soils also retain water and may act as lubricated slippage planes between other soil/rock strata, also producing landslides, often during earthquakes or when caused by unusually moist conditions.

Expansive soils are also often prone to erosion. Foundations of structures placed on expansive soils may rise during the wet season and fall during the succeeding dry season. Expansive soils can act as

a lubricant when between differing soil/rock strata, which can facilitate movement triggered during heavy rains or earthquakes. According to the County of Ventura Expansive Soils Map, the project site is located in a low expansive soil potential area of Oxnard (Ventura County Resource Management Agency 2010). According to Figure 5-12 of the City of Oxnard General Plan Background Report (2006), the project site is located in an area of low susceptibility to erosion. Therefore, the project would not create substantial risks to life or property due to expansive soils that cannot be addressed through compliance with standard Code requirements and this impact would be less than significant.

4. Seiches are seismically induced waves that occur in large bodies of water, such as lakes and reservoirs. According to the City of Oxnard General Plan Background Report (2006), the City's Channel Islands Harbor and Mandalay Bay could be potentially impacted by seiches. The project site is not in proximity to either of these areas and, therefore, new development and residents on the site would not be at risk of exposure to inundation by seiche. There would be no impact.

   A tsunami is a tidal wave produced by off-shore seismic activity. The project site is not located in a tsunami inundation area as shown on the Tsunami Inundation Map of the Oxnard Quadrangle. Therefore, new development and residents on the site would not be at risk of exposure to inundation by tsunami. There would be no impact.

5. As a typical office and residential development on previously developed, flat site, the project would not require dredging or other maintenance activity that is not guaranteed to continue. There would be no impact.

Cumulative Impact Analysis: Impacts associated with geology and soils in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regards to geology and soils on and in the vicinity of the project site and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with geology and soils.

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VIII. HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
2. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
3. Would the project emit hazardous substances or involve handling hazardous or acutely hazardous substances, or waste within one-quarter mile of an existing or proposed school in quantities or a manner that would create a substantial hazard?	☐	☐	☐	■
4. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a substantial hazard to the public or environment?	☐	☐	■	☐
5. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐

1,2. The project would use normal and nominal amounts of hazardous materials during construction of the project as well as using household cleaners in during operation of the development with use of normal amounts of hazardous materials for maintenance of machinery used onsite, such as forklifts and trucks. No routine disposal of hazardous materials is proposed. Therefore, the project would not create a significant hazard to the public or the environment through a foreseeable upset or accident, or the routine transport, use, or disposal of hazardous materials and impacts would be less than significant.

3. The project site currently contains facilities of the former El Rio Elementary School. However, the school has not been in operation for a number of years and these facilities would be demolished as part of the project. The nearest operational school to the project site is Rio del Mar Elementary School, located at 3150 Thames River Drive, approximately one-half mile north of the project site. Therefore, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste in one-quarter mile of an existing or proposed school, and there would be no impact.

4. In order to evaluate hazardous materials records located on the project site or adjacent to the project site, the State Water Resources Control Board GeoTracker database, and the Department of Toxic Substances Control EnviroStor database and Cortese List were reviewed in May 2018. Review of these resources indicates that the project site is not located in a site that is considered to contain hazardous materials pursuant to Government Code Section 65962.5. Two leaking underground storage tank (LUST) cleanup sites (T.W. Brown Oil Co [T0611100270] and Rio School Dist-Maintenance Yd [T0611101240]) are identified on East Vineyard Avenue, adjacent to the western boundary of the project site. However, the T.W. Brown Oil Co site has a Completed- Case Closed as of 8/29/1989 status and the Rio School Dist-Maintenance Yd site has a Completed- Case Closed as of 1/16/2001 status. Therefore, these sites would not present a substantial hazard to the public or environment and this impact would be less than significant.

5. The project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The design of new access points would be reviewed and approved by the City of Oxnard Fire Department to ensure that emergency access meets City standards. Therefore, impacts would be less than significant.

Cumulative Impact Analysis: Impacts associated with hazards and hazardous materials in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regards to hazards and hazardous materials and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with hazards and hazardous materials.

IX. HYDROLOGY AND WATER QUALITY	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause a violation of any adopted water quality standards or waste discharge requirements?	☐	☐	■	☐
2. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	■	☐	☐
3. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in on- or off-site flooding or exceed the capacity of existing or planned stormwater drainage systems?	☐	☐	■	☐
4. Would the project place new structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	■	☐
5. Would the project impede or redirect flood flows such that it would increase on- or off-site flood potential?	☐	☐	■	☐
6. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	■	☐
7. Would the project be exposed to a substantial risk related to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	■

1. The Ventura County Watershed Protection District, County of Ventura, and the cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks have joined together to form the Ventura Countywide Stormwater Quality Management Program and are named as co-permittees under a revised countywide municipal NPDES permit for stormwater discharges issued by the Regional Water Quality Control Board in 2010 (Order R4-2010-0108). Under Order R4-2010-0108, the co-permittees are required to administer, implement, and enforce a Stormwater Quality Management Program to reduce pollutants in urban runoff to the maximum extent practicable. Accordingly, the project would be required by uniformly applied regulations and conditions of approval to comply with Clean Water Act National Pollutant Discharge Elimination System (NPDES) requirements. Compliance with the Oxnard building permit would require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMP). The BMPs would include measures that would be implemented to prevent discharge of eroded soils from the construction site and sedimentation of surface waters offsite. The BMPs would also include measures to quickly contain and clean up any minor spills or leaks of fluids from construction equipment. Given the relatively flat topography of the site, distance from surface waters, the minimal grading and excavation required for construction, and implementation of the required SWPPP, construction of the project would not violate any water quality standards or waste discharge requirements. This impact would be less than significant.

2. As with the existing school district facilities on the site, the proposed development would include a connection to the municipal water supply system to provide potable water to the residential and office uses within the project. The following paragraphs provide a brief summary of groundwater resources and their regulation in the area. More detail regarding the planning and regulation of water service, is provided below in Section XVI Utilities and Energy.

   Groundwater within the Oxnard Plain and throughout the region is under the management of the Fox Canyon Groundwater Management Agency (FCGWMA). The FCGWMA was created in 1982 by the California Legislature via the Fox Canyon Groundwater Management Agency Act [AB-2995] for the express purposes of regulating, conserving, managing, and controlling the use and extraction of groundwater to help preserve resources, and to counter seawater intrusion beneath the Oxnard Plain. The regulations of FCGWMA, which restrict groundwater withdrawals, apply to all groundwater users within its jurisdiction. These users include agricultural activities, industrial users, and municipal governments such as the City of Oxnard. The City will provide water to the proposed Rio Urbana development, and approval of the project will be subject to the provisions of the City of Oxnard Municipal Code Chapter 22: Water, as well as to the FCGWMA and other requirements. The City has a “net-zero” policy with respect to new development, which requires a proposed development to provide and transfer any necessary groundwater allocation to the City (subject to FCGMA approval) or contribute to City programs designed to offset potable water use. This policy was confirmed in a report to the City Council on October 19, 2009, and is incorporated into the City’s Urban Water Management Plan (UWMP; Oxnard 2016:Section 8.4.1), and other plans. Section XVI Utilities and Energy provides more detail regarding the provision of water service; and the key conclusion from that discussion is that the identified mitigation measures, which would implement

these existing requirements, would serve to mitigate the potential effects of the project on regional groundwater supplies.

With respect to potential localized effects on groundwater, Section 22-100 of the Oxnard Municipal Code requires that any existing water rights; groundwater pumping allocations from FCGWMA; and all wells, mains, easements and water production equipment or facilities, be assigned and transferred to the City of Oxnard. In addition, provisions of Article VII of the Municipal Code (starting at Section 22-110) regulate all well operations and require the destruction of any abandoned wells (Section 22-123). Because of these requirements, any wells that exist on the property and which may have been used in the past to serve the school facilities could not be used to serve the proposed development directly. For this reason, the project would not have any localized effects on groundwater withdrawals and would not adversely affect any other wells in the vicinity.

3. During operations of the project, surface water discharge would include minimal amounts of stormwater runoff generated during precipitation events. However, according to a letter prepared by Jensen Design & Survey, Inc. in January 2017 assessing required Ventura County Municipal Separate Storm Sewer Systems (MS4) permit compliance and on-site drainage, the project would increase stormwater flows on the project site. The MS4 compliance and drainage letter was revised on March 25, 2019, and is included in Appendix F of this Initial Study.

   Given the nearly flat topography of the site, and landscaped and open space areas incorporated into the project design, precipitation would be expected to infiltrate or evaporate onsite more so than sheet flow over land and discharge offsite at substantial rates or volumes. The project would continue to use the existing stormwater system that is connected to the city's storm sewer system and consistent with applicable development standards and permits. The project would be subject to the requirements of a Ventura County MS4 permit. Site-specific BMPs would be designed by the contractor in compliance with all applicable regulations and conditions of the MS4 permit. More specifically, stormwater runoff would be directed to multiple inlets throughout the project site that connect to the onsite drainage system. The two proposed parcels (residential and office) would have individual drainage systems, a pollutant trap and separation unit, and an infiltration basin. Low flows entering the inlets would be routed through the separation unit before entering an infiltration basin. High flows that exceed the required volume of infiltration would be routed through the infiltration basin and released to the 54-inch City storm drain located in Vineyard Avenue. According to the MS4 compliance and drainage letter prepared for the project, this drain currently possesses excess capacity that would be sufficient to accommodate increased stormwater flows as a result of the project. The project would not include any unique components that would impact stormwater runoff quality. The project would also be required to comply with all standards for a watercourse permit for potential project drainage effects on flows in the El Rio Drain, as implemented by the Ventura County Watershed Protection District, County of Ventura, and the City.

   The County standard would require that the project not increase peak flows from 10-year, 25-year, and 100-year storms in the El Rio Drain. Section 202 of County Ordinance WP-2 requires County review and permit approval for any alteration in the characteristics of flow in channels under the County jurisdiction. Evidence of County review and issuance of written permission in compliance

with County Ordinance WP-2 will be required by the City prior to final approval of the project. Appendix F contains the updated drainage memo for the project prepared by Jensen Design & Survey, Inc., dated March 25, 2019. This study describes the combination of separation structures and infiltration systems that will keep peak flows from the developed project within current values and within the capacity of downstream drainage structures, consistent with requirements of both the City and the County of Ventura. Operation of the project would not be expected to violate any water quality standards or waste discharge requirements. The project would have less than significant impacts on water quality standards and discharge requirements.

4,5. The project site is located in an area mapped by the Federal Emergency Management Agency (FEMA) as Zone X, Area of Minimal Flood Hazard. The project site is not located in a 100-year flood hazard area. Additionally, the project site is an already developed site with existing structures. Redevelopment of the site for the project would not introduce any features or components that would impede or redirect flood flows such that it would increase on- or off-site flood potential. Impacts would be less than significant.

6. According to the Safety and Hazards chapter of the City of Oxnard General Plan Background Report (2006):

   "Several dams are located at least 35 miles to the east and northeast of the city of Oxnard within Ventura and Los Angeles Counties. These include the Santa Felicia Dam at Lake Piru, the Castaic Lake Dam and the Pyramid Lake Dam. The major threat to Oxnard is upstream along the Santa Clara River corridor. Although the potential for a dam failure is considered low, should one or more of these dams fail, the entire city is located within the Dam Inundation Zone, also called Dam Failure Hazard Area. Damage to the city could be in the form of a wall of fast-moving water, mud, and debris."

   While potential failure of any of these dams could cause inundation of the City, including the project site, the Ventura County Hazard Mitigation Plan (2010) states that the probability of dam failure inundation is unknown, but would be the result of certain types of extreme storm events. The project would not exacerbate the potential for levee or dam failure and project-related impacts in relation to levee or dam failure would be less than significant.

7. Seiches are seismically induced waves that occur in large bodies of water, such as lakes and reservoirs. According to the City of Oxnard General Plan Background Report, the City's Channel Islands Harbor and Mandalay Bay could be potentially impacted by seiches. The project site is not in proximity to a large body of water. Therefore, seiches are a not a risk to the project site. No impacts would occur.

   A tsunami is a tidal wave produced by off-shore seismic activity. The project site is not located in a tsunami inundation area as shown on the Ventura County Multi-Jurisdictional Hazard Mitigation Plan Update, and would not be subject to inundation by tsunami (County of Ventura 2010). No impacts would occur.

   The project site is not located in an earthquake-induced landslide zone (California Geological Survey 2002). Landslides and mud flows are most likely to occur on or near a slope or hillside area, rather

than in generally level areas, such as the project site. Mud flows would not be a risk to the project. No impacts would occur.

Cumulative Impact Analysis: Impacts to hydrology and water quality as a result of development in the City Planning Area facilitated by the 2030 General Plan were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regards to hydrology and water quality and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with hydrology and water quality.

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X. LAND USE AND PLANNING	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project conflict with an applicable land use plan, policy or regulation of the City or other agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating a significant environmental effect?	☐	☐	■	☐
2. Would the project involve land uses that are not allowed under any applicable airport land use compatibility plan?	☐	☐	☐	■
3. Would the project conflict with an applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■
4. Would the project physically divide an established community?	☐	☐	■	☐

1. The project would involve demolition of the existing campus for the former El Rio Elementary School and the construction of 167 condominium residential units and a 15,100-square-foot office building. The project site lies within the County of Ventura's unincorporated community of El Rio, which is in the City of Oxnard's Sphere of Influence (SOI). The City currently designates the project site its former for school use. The entitlements requested by the project applicants include:

    1. Annexation to the City of Oxnard (PZ 17-610-01)
    2. Oxnard General Plan Amendment (PZ 17-620-01) to change the land use designation from School to Commercial General
    3. Pre-Zoning to C-2-PD (PZ 17-560-01)
    4. Tentative Subdivision Map that creates two parcels (Parcel 1 on 1.12 acres and Parcel 2 on 9.12 acres; PZ 17-300-03) and 167 condominium parcels
    5. Special Use Permit (PZ 17-500-13) for development of an office building on Parcel 1;
    6. Special Use Permit (PZ 17-500-05) for residential use on Parcel 2
    7. Issuance of a Density Bonus for provision of three additional units and reduction in interior yard space from 30 percent to 24 percent

    The City's Commercial General land use designation allows retail centers and free-standing commercial uses along arterials, and residential uses up to 18 dwelling units per acre and office use not to exceed a floor area ratio (FAR) of 0.35 to 1. The C-2 General Commercial zoning allows for professional and business offices, with the Planned Development (PD) designation permitting the development of multifamily residential uses in conformance with the City's 2030 General Plan. Based on the area of the parcel for the residential uses (approximately 9.12 acres), the Commercial

General land use designation would permit up to 164 dwelling units. With the approval of Density Bonus for providing 17 (10 percent of units) low and 3 moderate income deed-restricted households, the project would be permitted to construct up an additional 20% or 30 units. Only 3 additional units are requested, however, for a total of 167 residential units. One additional concession, allowed by state and local codes would reduce the interior yard space from 30 percent to 24 percent on the project site. Construction of 167 residential units and a 15,100-square-foot office building as proposed by the project both would be consistent with the City's land use designation for the site if changes from SCH to Commercial General as proposed.

The project would be designed in accordance with the City's Zoning Code development standards to ensure massing and scale compatibility with surrounding uses. The office building would be two stories and consistent with the maximum building height of 35 feet, as well as with the minimum front, rear, and side setbacks permitted by the C-2 zoning designation. The residential buildings would be three stories (38 feet) in height, with review and approval of the requested Special Use Permit. The project incorporates a 30-foot landscaped setback along East Vineyard Avenue, in accordance with 2030 General Plan Policy CD-9.4, to provide a landscaped buffer along this City-designated scenic corridor. As such, implementation of the project would not conflict with the City's 2030 General Plan or zoning code. The project would introduce multifamily residential and commercial office uses that have been designed for visual compatibility and consistency with the surrounding land uses. Impacts would be less than significant.

2. The nearest airport to the project site is the Oxnard Airport, located approximately three miles southwest of the site. The Oxnard Airport Sphere of Influence (SOI) is a designated area for the coordination and review of land use proposals which may affect or be affected by the operations of the Oxnard Airport. The project site is outside of the Airport SOI. Therefore, the project would not result in any impact associated with land uses that are not allowed under an applicable airport land use compatibility plan.

3. According to the City's 2030 General Plan (2009), there is no established or planned Habitat Conservation Plan or Natural Communities Conservation Plan in or near the City's Planning Area, which includes the project site. Therefore, the project would have no impact associated with conflict with such a plan.

4. The proposed residential and office development would occur on a site developed with a former school and surrounded by residential and commercial uses. Therefore, the project would serve to extend similar surrounding uses and would not divide an established community. This impact would be less than significant.

Cumulative Impact Analysis: Impacts associated with land use and planning in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regard to land use and planning and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with land use and planning.

XI. MINERAL RESOURCES	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project result in the loss of availability of a known mineral resource of value to the region or state?	☐	☐	■	☐
2. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated in the 2030 General Plan, specific plan or other land use plan?	☐	☐	■	☐

1,2. According to the Background Report for the 2030 General Plan, important mineral/sand/gravel deposits are primarily located along the Santa Clara River channel, along the U.S. 101 corridor, and along the eastern edge of the City. The project site is located in the City's Non-designated Mineral Resource Zone-2 (MRZ-2), indicating that mineral deposits may be present in the area. However, policies in the Ventura County Mineral Resource Management Plan establishing land use controls that allow for flexibility for mineral extraction do not apply because the site is not in an officially designated MRZ-2 area. Therefore, the project would not result in the loss of availability of a known mineral resource that is of known value to the region or the State, or loss of a designated locally important mineral resource recovery site. Impacts would be less than significant.

Cumulative Impact Analysis: Impacts to mineral resources in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts to mineral resources and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts to mineral resources.

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XII. NOISE	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project generate or expose persons to noise levels in excess of standards established in the Oxnard 2030 General Plan or Noise Ordinance, or applicable standards of other agencies?	☐	■	☐	☐
2. Would the project generate or expose persons to excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
3. Would the project generate a substantial temporary or periodic increase in ambient noise in the project vicinity above levels existing without the project?	☐	■	☐	☐
4. Would the project generate a substantial permanent increase in ambient noise in the project vicinity above levels existing without the project?	☐	☐	■	☐
5. For a project located within the airport land use plan for Oxnard Airport or within two miles of Naval Base, Ventura County at Point Mugu, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■
6. Would the project expose non-human species to excessive noise?	☐	☐	■	☐

1. The Noise Study for the Rio Urbana Project (Noise Study), prepared by Meridian Consultants in May 2018, is included as Appendix G of this Initial Study. This study provides background information on noise and how it is measured and described. The Noise Study also provides quantitative estimates of potential noise effects of the proposed project based on criteria in use by the City of Oxnard. Material from the Noise Study, as well as additional information from other City documents is summarized in the following paragraphs.

   The proposed multi-family residences within the project and existing detached single family homes and mobile homes to the northeast in the Rio neighborhood are noise-sensitive land uses. The Oxnard 2030 General Plan Goals & Policies (Oxnard December 2016:Goals SH-5 and SH-6) include

the City's noise goals and policies for maintaining appropriate noise levels in residential and other land uses within the City. Two different specific standards or criteria are described in the City of Oxnard CEQA Guidelines related to acceptable noise levels in various land use types (Oxnard May 2017:Section 12.3). These noise criteria are found (1) in the Oxnard General Plan Draft Background Report and (2) in the City's noise ordinance, Section 7-185 Exterior Noise Standards.

From the General Plan Draft Background Report, the maximum Community Noise Equivalent Level (CNEL) considered "normally acceptable" for single family and mobile home land uses is 60 decibels (dBA), and for multi-family land uses the CNEL limit is 65 dBA (Oxnard April 2006:Table 6-4). CNEL is a 24-hour average noise level, and is often used interchangeably with the Day-Night Average Noise Level (Ldn). The City's use of the CNEL standards in this manner is consistent with many other agencies and local governments (see Figure 6 in the Noise Study for the Rio Urbana Project.) These limits or criteria are intended to be applied to the evaluation of noise from all sources and how it affects the various land uses. Thus, these criteria are commonly used in evaluating noise from roadways, airports and aircraft overflights, rail operations, and similar sources.

In assessing the significance of noise level increases caused by a project – such as long-term increases in noise due to project-generated traffic, the Oxnard CEQA Guidelines reference criteria used by the Federal Transit Administration. For typical urban areas where existing noise levels range from 55 to 65 dBA (measured either as Ldn or Leq), a project-generated increase of from 2-3 dBA would be considered allowable. If existing noise levels are already excessive, then a more stringent increase of 1 dBA is applied up to 74 dBA. And if existing noise levels already exceed 75 dBA, then any increase is considered a significant impact (Oxnard May 2017:Table 5).

The City's noise ordinance uses a different approach to setting noise standards for various land uses. The ordinance is part of the City's process for regulating nuisances, and applies to the generation of noise from specific activities. For residential uses, the maximum allowable exterior sound level during daytime hours (7:00 a.m. to 10:00 p.m.) is 55 dBA, and for nighttime hours (10:00 p.m. to 7:00 a.m.), the limit is 50 dBA. In this context, the stated noise levels are One-hour Equivalent Noise Levels (Leq), not 24-hour averages. The noise ordinance itself has more details, including various adjustments for the presence of impulse sound and for various short-term exceedances. The ordinance also includes several exemptions, one of which applies to construction activities as long as specific days and hours are followed. For this reason, the City of Oxnard CEQA Guidelines suggests, "…construction related noise be considered 'substantial' only in unusual circumstances…" (Oxnard May 2017:page 57).

The Noise Study also reviews California State building code requirements applicable to multi-family residential dwellings, which require that interior living spaces meet a standard of 45 dBA CNEL or less. The Noise Study for the Rio Urbana Project describes the project, addressing both construction related noise and increases in traffic noise levels after the project is completed. Construction related effects are addressed in issues 2 and 3 below.

Traffic noise levels are computed in Table 5 (existing) and Table 9 (existing plus project) of the Noise Study for the Rio Urbana Project, which is Appendix G of this Initial Study. Aspects of the presentation in Tables 5 and 9 of the Noise Study may be confusing because it lists CNEL values for "AM" and "PM" time periods. As noted above, CNEL is a 24-hour noise descriptor so it does not

apply to morning or afternoon periods – it represents the average for an entire day. The "AM" and PM" periods are identified in Table 9 because the morning and afternoon peak hour traffic volumes were used, in turn, to estimate the Average Daily Traffic (ADT) volumes for the noise model work. Thus, slightly different results of CNEL were obtained reflecting the use of either morning or afternoon peak hour volumes to estimate the ADT values used in the model work. Additionally, the noise estimates in the Noise Study are based on traffic generated by development of 182 dwelling units and 15,100 square feet of office space. The updated project, as proposed, would result in 15 fewer dwelling units, and thus fewer vehicle trips, than anticipated in the traffic and noise analyses for the project. Therefore, noise estimates herein are considered conservative estimates for the project as proposed. Excerpts from Table 9 in the Noise Study for the Rio Urbana Project are summarized here in Table 3. All of the noise levels shown in Table 3 are CNEL values computed for a distance of 75 feet from the center of the identified roadway.

Table 3 Summary of Existing Plus Project Traffic Noise Levels

Street	Intersection No. – Location of segment	Existing Noise Level	Existing Plus Project Noise Level	Change
Vineyard Ave.	1 North of E. Stroube St.	65.3 dBA	65.4 dBA	0.1 dBA
Vineyard Ave.	1 South of E. Stroube St.	65.2 dBA	65.3 dBA	0.1 dBA
Vineyard Ave	2 North of Rio School Lane	65.6 dBA	65.6 dBA	0.0 dBA
Vineyard Ave.	3 South of Rio School Lane	65.6 dBA	65.7 dBA	0.1 dBA
Stroube St.	1 East of Vineyard Ave.	49.6 dBA	49.8 dBA	0.2 dBA
Stroube St.	1 West of Vineyard Ave.	47.0 dBA	47.0 dBA	0.0 dBA
Rio School Lane	2 East of Vineyard Ave	39.9 dBA	44.4 dBA	4.5 dBA

Source: Meridian Consultants, Inc. Noise Study for the Rio Urbana Project, Table 9, May 2018. Noise levels recorded on July 6, 2017
Note from Meridian Consultants, Inc. Noise Study: Roadway noise levels are modeled 75 feet from the center of the roadway.

Most of the intersections and roadway segments analyzed in the Noise Study for the Rio Urbana Project are located at some distance from the project site itself and are not representative of the residential neighborhood generally between Rio School Lane and Stroube Street. Table 3 above includes only those intersections potentially impacted by project traffic that are located generally near existing residential neighborhoods.

For the intersections where the existing CNEL value exceeds 65 dBA, the increase due to project traffic would be much less than 1 dBA. The only substantial increase in roadway noise levels caused by the project would be along what is now Rio School Lane that would serve as the primary access to the proposed development. Although the increase in traffic noise here would be about 4.5 dBA at 75 feet, the resulting CNEL values would still be relatively low (less than 45 dBA) in areas removed from Vineyard Avenue. The actual distance from the centerline of Rio School Lane and the nearest existing house is about 30 feet. At this distance the CNEL would be about 50.4 dBA, still well below the impact threshold of 65 dBA. The existing residences on the north side of Rio School Lane closest to Vineyard Avenue are about 200 feet from the center of Vineyard Avenue. At this distance, the "Existing Plus Project" CNEL value would be reduced from 65.6 dBA to approximately 60 dBA. Areas closer to Vineyard Avenue would experience higher noise levels, but the added effect of project traffic would be much less in these areas. The primary concern in this respect would be the residences proposed within the project itself, specifically those in residential Building 2 (south of Rio

School Lane) that would be about 86 feet from the center of Vineyard Avenue. At this distance, the existing CNEL from Vineyard Avenue would be about 64.7 dBA, and the existing plus project CNEL would be 64.8 dBA. This result is right at the limit considered acceptable for multi-family residential uses, and exterior living areas would exceed 65 dBA. Although the increases in noise would be relatively minor, the proposed development would lead to small increases in traffic related noise levels in areas where existing noise levels already exceed and mitigation would be required to reduce potential impacts to nearby sensitive receptors to a less than significant level.

Mitigation Measure

The following mitigation measures would reduce potential impacts related to the exposure of people to excessive noise levels to a less than significant level. Equivalent design measures may be substituted as long as the identified performance standard is met.

N-1(a) **Building Material Guidelines.** The living areas for all residences in the project, including those adjacent to Vineyard Avenue, shall be constructed to include sufficient noise attenuation to reduce interior noise levels to a CNEL of 45 dBA, as required by California building standards. For the estimated exterior CNEL values of 65 dBA, ~~t~~This performance standard requires an exterior-to interior noise reduction of approximately 20 dBA~~ or more~~. This noise reduction is routinely achieved in residential construction that is consistent with current California energy conservation standards, and involves measures such as exterior stucco walls with a Sound Transmission Class (STC) rating of 45, double-paned windows with an STC of 37, solid core exterior doors. Building permit applications shall include documentation that the interior standard of 45 dBA CNEL will be achieved through a combination of these or other measures.

N-1(b) **Building Design.** The living areas shall contain forced air ventilation. All duct work for ventilation shall include noise louvers at the exterior outlet and/or duct outlets shall be directed either opposite to or perpendicular to Vineyard Avenue. Upper level patio/deck areas shall not be positioned facing the Vineyard Avenue for residences along the western site boundary without additional mitigation or verification that exterior CNEL values would meet the City noise standard of 65 dBA as shown in a Noise Study reviewed and approved by the Planning Manager or designee.

2. Ground vibration is discussed in the *Noise Study for the Rio Urbana Project*. The study focused on three existing residences near the project site that are representative of residences in the vicinity. Due to the relatively short distances separating these residences from the project site, construction noise levels from the proposed development would cause increases ranging from about 9 dBA to 21 dBA over short periods of time. As described above, the City of Oxnard Noise Ordinance includes an exemption for construction activities during normal working hours. Even with this exemption, the construction noise from the proposed development is considered a potential significant impact that warrants mitigation. Specific mitigation measures to reduce construction noise levels are listed below.

   No mitigation measures are necessary related to ground vibration, since the Noise Study for the Rio Urbana Project concludes that ground vibration from construction activities would remain well

below the criteria used. Specifically, the construction activities are estimated to cause peak particle velocities (PPV) of 0.021 inches per second at the nearest residences, which is well below the criterion of 0.5 inches per second for PPV.

Mitigation Measure

To reduce the effects of construction activity noise to a less than significant level, the following mitigation measure would be required:

N-2 Construction Noise Levels. For all construction-related activities, noise-attenuation techniques shall be employed as needed to ensure that noise remains as low as possible during construction, specifically at REC-1 through REC-3. The following noise-attenuation techniques shall be incorporated into contract specifications to reduce the impact of construction noise:

- Ensure that construction equipment is properly muffled according to industry standards and in good working condition.
- Place noise-generating construction equipment and locate construction-staging areas away from sensitive uses, where feasible.
- Schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses.
- Implement noise attenuation measures to the extent feasible, which may include but are not limited to temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
- All stationary construction equipment (e.g., air compressors, generators, impact wrenches, etc.) shall be operated as far away from residential uses as possible and shall be shielded with temporary sound barriers, sound aprons, or sound skins.
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes.
- Clearly post construction hours, allowable workdays, and the phone number of the job superintendent at all construction entrances to allow for surrounding owners to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

3. Temporary increases in noise levels caused by the project would occur due to construction activities. This potential impact is discussed above in issue 2.

4. The project is not expected to cause any significant permanent increases in noise levels. Increases in traffic noise levels due to the project are discussed in issue 1 above, and are considered to be a less than significant impact.

5. As discussed in the Land Use and Planning section, the project site is located outside of the Oxnard Airport Sphere of Influence. The project site is located approximately two miles from the nearest points of the 60 dBA CNEL contours associated with the Oxnard Airport (to the southwest) and about three miles from the nearest extent of the 60 dBA CNEL contour from the Camarillo Airport

(to the east-southeast) (Ventura County Department of Airports August 2004:Exhibit D-4, and Ventura County Airports Land Use Commission July 2007:Exhibit E-3). This project site is also located more than five miles from Naval Base, Ventura County at Point Mugu. Therefore, the project would not result in exposure of people residing or working in the project area to excessive noise levels associated with nearby airports. There would be no impact.

6. There are no listed endangered or threatened species within the project site, and the proposed development would not subject any sensitive biological species to noise levels beyond those common in urban neighborhoods. Additionally, the project would be required to implement mitigation measure BIO-1 to reduce and/or avoid potential impacts to nesting birds and raptors. For this reason, potential effects related to this issue would be less than significant.

Cumulative Impact Analysis: Impacts associated with noise generated by all development facilitated by the 2030 General Plan were analyzed by the 2030 General Plan EIR and found to be significant for which an overriding consideration was adopted. The project would have less than significant impacts with respect to noise with implementation of mitigation measure N-2, and would be subject to the City's uniformly applied resource protection policies and regulations. Therefore, the project would not contribute to or result in significant cumulative impacts to noise.

XIII. POPULATION, EDUCATION, AND HOUSING	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project involve a General Plan amendment that could result in an increase in population over that projected in the 2030 General Plan that may result in one or more significant physical environmental effects?	☐	☐	■	☐
2. Would the project induce substantial growth on the project site or surrounding area, resulting in one or more significant physical environmental effects?	☐	☐	■	☐
3. Would the project result in a substantial (15 single-family or 25 multi-family dwelling units – about one-half block) net loss of housing units through demolition, conversion, or other means that may necessitate the development of replacement housing?	☐	☐	☐	■
4. Would the project result in a net loss of existing housing units affordable to very low- or low-income households (as defined by federal and/or City standards), through demolition, conversion, or other means that may necessitate the development of replacement housing?	☐	☐	☐	■
5. Would the project cause an increase in enrollment at local public schools that would exceed capacity and necessitate the construction of new or expanded facilities?	☐	☐	■	☐
6. Would the project directly or indirect interfere with the operation of an existing or planned school?	☐	☐	■	☐

1,2. The project consists of the development of 167 condominium residential units and a 15,100-square-foot office building on an approximately 10.5-acre site containing the former El Rio Elementary School campus. In January 2019, the City had a total population of 209,879 people and an average household size of 3.97 persons (DOF 2019). Based on the 2019 population and household size, the

project would result in an increase of approximately 663 residents in the City, representing an increase of 0.32 percent from the January 2019 population. The proposed office uses are not likely to generate an additional population within the City because the majority of these new employees would be relocated from existing Rio School District facilities located nearby at 2500 East Vineyard Avenue.

The 2030 General Plan projects a City population within a range of 238,000 to 286,000 people, with the Southern California Association of Governments (SCAG) projecting a population of 237,300 people by 2040. The population growth facilitated by the project would represent less than one percent of these growth forecasts and would be within the predicted growth projections previously evaluated by the City's 2030 General Plan and SCAG. While the project applicant is requesting an amendment to the 2030 General Plan to annex the project site into the City limits and to change the land use designation from School to Commercial General, the project site is in a developed area of the County surrounded by various low density residential and general commercial uses. Therefore, the proposed residential and office uses would be compatible with the uses designated by the City's General Plan for the project area. Impacts would be less than significant.

3,4. The project site does not contain any existing dwelling units. Therefore, the project would not result in any loss of housing units, including affordable to very low- or low-income households, through demolition, conversion, or other means that may necessitate the development of replacement housing. There would be no impacts.

5,6. According to the DOF population and housing estimates, the City had a total population of 209,879 people and an average household size of 3.97 persons in January 2019. Using the average household size, the 167 proposed condominiums included in the project would result in an increase in the City's population of 663 people. A portion of this new population would likely be school-age and would attend local public schools including those operated by Rio School District, and Oxnard Union High School District.

At the elementary school level (grades k-5), the Rio Elementary School District is over capacity. At the time the *Facilities Master Plan* was prepared in 2014, it was predicted that only one elementary school would be under capacity by 2016 and that two schools would be over 100% utilization (Rio School District September 2014:page 5). By 2018, in the *Developer Fee Justification Study & School Facilities Needs Analysis*, the District determined that for the elementary grades K-5 it was 207 students over capacity, but for the middle school grades 6-8 is was 201 students under capacity (Rio School District October 2018:Table 2).

The projections of future development and student generation in the 2018 study included the assumption that the Rio Urbana development project would be completed (along with other projects in the City). Based on generation rates used in the 2018 study, the Rio Urbana project would generate about 29 K-5 students and 10 grade 6-8 students, or about 10% of the projected growth at the time (Rio School District 2018:Tables 4 and 5).

Oxnard Union High School District has seven existing high schools, plus an independent study school and a continuation school. Nearest to the project site are: Oxnard High School, Pacifica High School,

and Rio Mesa High School. All three of these high schools have student enrollment in excess of their original facility capacity and all three use portable classrooms to accommodate part of their current enrollment. The Oxnard Union High School District has acquired land and is planning a new eighth high school southeast of N. Rose Avenue and Caesar Chavez Drive, with construction to start in 2020 (Oxnard Union High School District, October 2017 and January 2019.

To offset a project's potential impact on schools, Government Code 65995(b) establishes the base amount of allowable developer fees a school district can collect from development projects located within its boundaries. The fees obtained by the local districts are used to maintain the desired school capacity and the maintenance and/or development of new school facilities. The project proponents would be required to pay the State-mandated school impact fees. Pursuant to Section 65995(3)(h) of the California Government Code (SB 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Additionally, the project would provide new administrative office space for the Rio School District, assisting in the operation of the schools in this district. Therefore, impacts to local public schools as a result of the project would be less than significant.

Cumulative Impact Analysis: Population and housing were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts to population, education, and housing and would be required to implement the City's uniformly applied development policies and regulations. Therefore, the project would not contribute to or result in cumulative impacts to population, housing, and education.

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XIV. PUBLIC SERVICES AND RECREATION	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project increase demand for fire protection service such that new or expanded facilities would be needed to maintain acceptable service levels, the construction of which may have significant environmental effects?	☐	☐	■	☐
2. Would the project increase demand for law enforcement service such that new or expanded facilities would be needed to maintain acceptable service levels, the construction of which may have significant environmental effects?	☐	☐	■	☐
3. Would the project increase the use of existing park facilities such that substantial physical deterioration of the facilities would occur or be accelerated or that new or expanded park facilities would be needed to maintain acceptable service levels?	☐	☐	■	☐
4. Would the project increase the need for or use of existing library or other community facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	■	☐

1. Upon annexation to the City of Oxnard, the project site and proposed development would be under the jurisdiction of the Oxnard Fire Department (OFD). The OFD fire station nearest to the project site is Station 7, located approximately 0.6 mile northeast of the site at 3300 Turnout Park Circle. The project would increase development density on the project site and result in new population in the City of Oxnard resulting in a potential increase in demand for OFD services. However, the population growth facilitated by the project would not substantially affect provision of fire protection given the location of the project in an urbanized area adjacent to the City and in close proximity to existing fire stations. Additional information related to police and fire service is provided in Response 3.3 contained in Attachment 1, Responses to Comments. For clarification, that information is repeated here in the following paragraphs

In the 2018 Municipal Services Review for the City of Oxnard, LAFCO indicated that the City employed 0.67 firefighters for every 1,000 residents (up from a ratio of 0.48 in 2000). The Police Department employed one officer for each 831 residents (LAFCO 2018:pages 11-12).

With respect to fire service, the project site is less than one mile from the City of Oxnard Fire Station No. 7, located at 3300 Turnout Park Circle. The City Fire Department sets a goal of a 240 second (4 minute) travel time. Station No. 7 achieves this goal about 42% of the time. Station No. 7 is located approximately 0.7 miles to the northeast, just off of E. Vineyard Avenue. This proximity would allow a travel time well within the goal of 4 minutes. This City Fire Station No. 7 is located adjacent to the Ventura County Fire Station No. 51, located at 3302 Turnout Park Circle, which currently serves the unincorporated El Rio community (including the project site).

The City provides police services directly, including community patrol, criminal investigation, emergency communications, animal safety, and support services. The project site is located within Police Beat 14, Riverpark District. According to the LAFCO Municipal Services Review, the City of Oxnard 2017-2018 budget allowed for increased spending both for new vehicles and staffing to help maintain the police staffing ratio (Ventura LAFCO 2018:12).

The proposed development would be required to meet all fire and building code provisions to the satisfaction of the City and OFD. As such, the increase in demand for OFD services would not result in the need for new or expanded facilities to maintain acceptable service levels, the construction of which may have significant environmental effects. This impact would be less than significant.

2. Upon annexation to the City of Oxnard, the project site and proposed development would be under the jurisdiction of the Oxnard Police Department (OPD) for law enforcement protection services. OPD operates from its police station located at 251 South C Street, approximately 2.5 miles south of the project site. OPD also operates a police substation located within the Collection RiverPark center at 2751 Park View Court, less than one mile west of the project site. The City is divided into four police districts, each of which is further divided into smaller response beats. The project site is located in Beat 12, which is part of the North District. The project would increase development density on the project site and result in new population in the City of Oxnard resulting in a potential increase in demand for OPD services. However, the population growth facilitated by the project would not substantially affect provision of police protection given the location of the project in an urbanized area adjacent to the City and in close proximity to existing police stations. Additionally, construction of the project would incorporate various security features, such as fencing, surveillance cameras, and security lighting, to minimize trespassing, vandalism, and other uses that could place an additional demand on OPD. As such, the increase in demand for OPD services would not result in the need for new or expanded facilities to maintain acceptable service levels, the construction of which may have significant environmental effects. This impact would be less than significant.

3. Under the Quimby Act (California Government Code Section 66477), cities and counties in California may require that developers set aside land, donate conservation easements, or pay fees for park improvements in order to achieve a minimum of three acres per 1,000 residents. The goal of the Quimby Act is to require developers to assist in the mitigation of impacts associated with property improvements and development. According to Section 4.5.1 of the Background Report for the 2030

General Plan, the City of Oxnard operates 50 existing park facilities located in the City Planning Area. In total, the City Planning Area contains approximately 828 acres of parkland, including a 362-acre public golf course. Based on the City's January 2019 population of 209,879, the City currently possesses 3.9 acres of parkland per 1,000 residents. The project would generate approximately 663 new residents in the City of Oxnard, increasing demand on City park and recreational facilities. However, the project would provide various on-site recreational amenities, including a recreation center and activity room, tot lot, and small dog park, as well as open space areas. Therefore, the new residents generated by the project would likely use these areas for recreation before going elsewhere in the City alleviating some of the potential demand of the project on existing City park or recreational facilities. Additionally, the increase in City residents as a result of the project would not decrease the parkland to resident ratio below the requirement of three acres per 1,000 residents of the Quimby Act. The employees associated with the proposed office uses are likely to be relocated from existing Rio School District facilities and, therefore, would not result in a substantial increase in demand on existing park or recreational facilities. In accordance with the City's 2030 General Plan, the project applicant would meet any additional demand on parks and recreational facilities through payment of applicable developer fees to finance public facilities. These developer fees would be assessed and determined by the City's Community Development Department through the plan check and permitting process prior to the issuance of building permits. This impact would be less than significant.

4. The nearest library to the project site is the Albert H. Soliz Library. This library is owned and operated by the County of Ventura, but located in the City of Oxnard at 2820 Jourdan Street, approximately 350 feet north of the project site. Due to the close proximity to the project site, future residents on the site are likely to use this facility for their library needs. However, with other accessible library facilities throughout the City and County, the project would not create a substantial increase in demand for library services such that new facilities are needed. In accordance with the City's 2030 General Plan, the project applicant would meet any additional demand on library facilities through payment of applicable developer fees to finance public facilities. These developer fees would be assessed and determined by the Community Development Department through the plan check and permitting process prior to the issuance of building permits. This impact would be less than significant.

Cumulative Impact Analysis: Impacts to public services were analyzed in the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts to public services and recreation and would be required to implement the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts to public services and recreation.

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XV. TRANSPORTATION AND CIRCULATION	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections) based on adopted City of Oxnard level of service (LOS) standards?	☐	☐	■	☐
2. Would the project exceed, either individually or cumulatively, and LOS standard established by the Ventura County Congestion Management Program (CMP) for designated roads or highways?	☐	☐	■	☐
3. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	■	☐
4. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
5. Would the project result in inadequate emergency access?	☐	☐	■	☐
6. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	■	☐

1. **CONSTRUCTION**

Equipment and materials associated with project demolition and construction activities would be imported and exported from the project site and stored onsite for the duration of construction, where possible. Construction delivery and demolished materials export trips would be infrequent and short-term. The project demolition and construction workforce would likely commute to the project site in personal vehicles. The additional daily vehicle trips generated from the demolition and construction workforce would have localized impacts on Vineyard Avenue, Oxnard Boulevard, and Channel Islands Boulevard. However, the number of daily trips would be minimal in comparison

of the average daily vehicle trips on these arterial roadways of the city. All additional trips generated from the demolition and construction workforce would be temporary and short term.

OPERATION

A Revised Traffic and Circulation Study (Traffic Study) was completed for the project by Associated Transportation Engineers (ATE) on April 27, 2018 (refer to Appendix H). The Traffic Study describes the existing conditions, project trip generation rates, and the impact of the project on existing conditions. The Traffic Study also includes an analysis of the proposed and developing projects in the vicinity and the project's related impacts to traffic and circulation in a future setting.

The project site is served by a circulation system comprising arterial and collector streets. Traffic flow on urban arterials is most constrained at intersections. Therefore, a detailed analysis of traffic flows must examine the operating conditions of critical intersections during peak travel periods. Levels of Service (LOS) A through F are used to rate intersection operations, with LOS A indicating free flow operations and LOS F indicating congested operations. In the City of Oxnard LOS C is the acceptable operating standard for intersections.

Existing Conditions

The existing a.m. and p.m. peak hour traffic volumes at the study area intersections were collected by ATE in March of 2016, and March and June of 2017. Existing LOS for the study area intersections were calculated using the Intersection Capacity Utilization (ICU) methodology as required by the City of Oxnard. Table 4 below lists the existing LOS for study area intersections during the a.m. and p.m. peak hour periods.

Table 4 Existing Peak Hour Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		ICU	LOS	ICU	LOS
Vineyard Avenue/Stroube Street	Signal	0.56	A	0.55	A
Vineyard Avenue/Rio School Lane	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Sycamore Street	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Riverpark Boulevard	Signal	0.55	A	0.56	A
U.S. Highway 101 NB ramps/Vineyard Avenue	Signal	0.50	A	0.52	A
U.S. Highway 101 SB ramps/Vineyard Avenue	Signal	0.53	A	0.55	A
Vineyard Avenue/Esplanade Drive	Signal	0.56	A	0.63	B
Rose Avenue/Stroube Street	STOP-Sign	15.3 sec.	C	12.3 sec.	B
Rose Avenue/Auto Center Drive	Signal	0.55	A	0.77	C
U.S. Highway 101 NB ramps/Rose Avenue	Signal	0.42	A	0.47	A
U.S. Highway 101 SB ramps/Rose Avenue	Signal	0.61	B	0.69	B

Source: ATE Revised Traffic and Circulation Study, Table 1, April 2018.

As shown in Table 4, the study area intersections currently operate at LOS C or better during the a.m. and p.m. peak hour periods, which meets the City's LOS C standard.

Project Trip Generation

Trip generation estimates were calculated for the project based on Residential Condominiums (Land-Use Code #230) and Single Tenant Office Buildings (Land Use Code #715) rates presented in the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition. The trip generation estimates in the Traffic Study are based on development of 182 dwelling units and 15,000 square feet of office space. The updated project, as proposed, would result in 15 fewer dwelling units, and thus fewer trips, than anticipated in the Traffic Study. Therefore, trip generation estimates herein are considered conservative estimates for the project as proposed. Table 5 summarizes the average daily, a.m., and p.m. peak hour trip generation estimates for the project.

Table 5 Project Trip Generation

Intersection	Size	ADT		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
Condominium	182 units	5.81	1,057	0.44	80 (14/66)	0.52	95 (64/31)
Office	15,000 sq.ft.	11.65	175	1.80	27 (24/3)	1.74	26 (4/22)
	Total Project Trip Generation:		**1,232**		**107 (38/69)**		**121 (68/53)**

Source: ATE Revised Traffic and Circulation Study, Table 2, April 2018.

The data presented in Table 5 show that the project would generate a total of 1,232 average daily trips (ADT), 107 a.m. peak hour trips, and 121 p.m. peak hour trips.

Project Trip Distribution and Assignment

The project-generated a.m. and p.m. peak hour traffic volumes were distributed and assigned to the study area intersection based on travel data derived from the existing traffic volumes as well as general knowledge of the population, employment, and commercial centers in the Oxnard/Ventura area.

Project-Specific Impacts

LOS were calculated for the study area intersection assuming the Existing + Project traffic volumes. Table 6 shows the results of the calculations and identifies the project's impacts based on City of Oxnard thresholds.

Table 6 Existing plus Project Peak Hour Levels of Service

Intersection	Existing		Existing plus Project		Change	Impact?
	ICU/Delay	LOS	ICU/Delay	LOS		
A.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.56	A	0.57	A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	~~8.9~~0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.5 sec.	A	0.5 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.55	A	0.55	A	0.00	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.50	A	0.51	A	0.01	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.53	A	0.54	A	0.01	No
Vineyard Avenue/Esplanade Drive	0.56	A	0.56	A	0.00	No
Rose Avenue/Stroube Street	15.3 sec.	C	17.1 sec.	C	1.8 sec.	No
Rose Avenue/Auto Center Drive	0.55	A	0.55	A	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.42	A	0.42	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.58	A	0.58	A	0.00	No
P.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.55	A	0.56	A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.6 sec.	A	0.6 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.56	A	0.57	A	0.01	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.52	A	0.54	A	0.02	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.55	A	0.56	A	0.01	No
Vineyard Avenue/Esplanade Drive	0.63	B	0.63	B	0.00	No
Rose Avenue/Stroube Street	12.3 sec.	B	13.0 sec.	B	0.7 sec.	No
Rose Avenue/Auto Center Drive	0.77	C	0.77	C	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.47	A	0.47	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.69	B	0.69	B	0.00	No

Source: ATE Revised Traffic and Circulation Study, Tables 3 and 4, April 2018.

As shown in Table 6, the project would not generate traffic level impacts of a significant level to the study area intersections, based on the City of Oxnard's traffic impact thresholds during the a.m. or p.m. peak hour periods.

Cumulative (Existing + Approved/Pending Project) Conditions

The City of Oxnard requires that intersection operations be analyzed with the addition of traffic generated by projects that have been approved or are pending in the project study area. Trip generation estimates were used for the developments that are approved or pending near the project study area using the rates presented in the ITE, Trip Generation, 9th Edition. Table 7 summarizes the average daily, a.m., and p.m. peak hour trip generation estimates for the approved and pending projects, buildout of Riverpark Specific Plan, and third tower at Esplanade.

Table 7 Approved and Pending Projects (Cumulative Development) Trip Generation

No.	Project	Land Use	Size	ADT	A.M. Peak Hour	P.M. Peak Hour
1	Oakmont Senior Living	Assisted Living	85 units	172	5	14
2	The Village	Multi-Family Res.	88 units	580	40	51
3	The Village	Multi-Family Res.	78 units	514	36	45
4	The Village	Multi-Family Res.	144 units	949	66	84
5	Ventura/Vineyard Homes	Single Family Res.	152 units	1,447	114	152
6	River Park Senior	Senior Residential	136 units	275	8	23
7	Wagon Wheel The Village	Multi-Family Res. Retail Commercial	219 units 16,303 sq.ft.	1,443 722	101 22	127 44
8	Veranda	Single-Family Res.	95 units	904	71	95
9	Westerly River Park	Single-Family Res.	69 units	657	52	69
10	V.C. Credit Union	Bank	3,391 sq.ft.	230	0	41
11	Shoe City	Retail Commercial	17,513 sq.ft.	776	23	47
12	The Point	Retail Commercial	45,000 sq.ft.	1,922	43	167
13	Esplanade Gateway	Coffee Shop Retail Commercial	1,836 sq.ft. 5,000 sq.ft.	762	97	37
14	The Collection – River Park	Retail Commercial	40,000 sq.ft.	1,708	38	148
15	Campus at Topa Towers	Restaurant Retail Commercial	8,350 sq.ft. 15,240 sq.ft.	1,062 675	90 22	82 41
16	Third Tower	Office	300,000 sq.ft.	3,308	468	447
17	Gold Coast Transit	Trip Generation from Penfield & Smith TIA		2,263	153	78
18	Audi of Oxnard	Auto Dealership	35,064 sq.ft.	939	76	97
19	Food 4 Less Center	Retail Commercial Gas Station	75,776 sq.ft. 14 pumps	3,236 2,360	73 170	281 194
			Total Trips	**21,965**	**1,427**	**2,066**

Source: ATE Revised Traffic and Circulation Study, Table 5, April 2018.

The data presented in Table 7 indicate that the approved and pending projects would generate a total of 21,965 average daily trips, 1,427 a.m. peak hour trips and 2,066 p.m. peak hour trips. The traffic generated by the approved and pending projects was distributed and assigned to the study area intersections based on the location of each project, recent traffic studies, existing traffic patterns observed in the study area as well as a general knowledge of the population, employment and commercial centers in Oxnard and surrounding Ventura County area. The Cumulative LOS for the study area intersections are shown in Table 8.

Table 8 Cumulative Peak Hour Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		ICU	LOS	ICU	LOS
Vineyard Avenue/Stroube Street	Signal	0.58	A	0.55	A
Vineyard Avenue/Rio School Lane	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Sycamore Street	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Riverpark Boulevard	Signal	0.55	A	0.58	A
U.S. Highway 101 NB ramps/Vineyard Avenue	Signal	0.54	A	0.53	A
U.S. Highway 101 SB ramps/Vineyard Avenue	Signal	0.61	B	0.67	B
Vineyard Avenue/Esplanade Drive	Signal	0.52	A	0.66	B
Rose Avenue/Stroube Street	STOP-Sign	16.7 sec.	B	12.6 sec.	B
Rose Avenue/Auto Center Drive	Signal	0.61	B	0.83	D
U.S. Highway 101 NB ramps/Rose Avenue	Signal	0.45	A	0.53	A
U.S. Highway 101 SB ramps/Rose Avenue	Signal	0.61	B	0.74	C

Source: ATE Revised Traffic and Circulation Study, Table 6, April 2018.

The date presented in Table 8 indicate that the Rose Avenue/Auto Center Drive intersection would operate at LOS D during the p.m. peak hour period with the addition of Cumulative traffic volumes, which does not meet the City's LOS C standard. The Rose Avenue/Auto Center Drive intersection would operate at LOS B during the a.m. peak hour period and all other study intersections would operation at LOS C or better during the a.m. and p.m. peak hour periods with the addition of cumulative traffic volumes, meeting the City's LOS C standard.

Cumulative Plus Project Impacts

LOS was calculated for the study area intersections, assuming the Cumulative plus Project volumes. Table 9 shows the results of the calculations and identifies the impacts of the project, based on City of Oxnard thresholds.

Table 9 Cumulative plus Project Peak Hour Levels of Service

Intersection	Cumulative		Cumulative plus Project		Change	Project Impact Alone?
	ICU/Delay	LOS	ICU/Delay	LOS		
A.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.58	A	0.59	A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	0.00 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.6 sec.	A	0.6 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.55	A	0.56	A	0.01	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.54	A	0.55	A	0.01	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.61	B	0.62	B	0.00	No
Vineyard Avenue/Esplanade Drive	0.52	A	0.52	A	0.00	No
Rose Avenue/Stroube Street	16.7 sec.	C	19.1 sec.	C	2.4 sec.	No
Rose Avenue/Auto Center Drive	0.61	B	0.61	B	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.45	A	0.45	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.61	B	0.61	B	0.00	No
P.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.55	A	0.57	A	0.02	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.3	A	0.3	No
Vineyard Avenue/Riverpark Boulevard	0.58	A	0.59	A	0.01	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.53	A	0.55	A	0.02	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.67	B	0.68	B	0.01	No
Vineyard Avenue/Esplanade Drive	0.66	B	0.67	B	0.01	No
Rose Avenue/Stroube Street	12.6 sec.	B	13.5 sec.	B	0.9 sec.	No
Rose Avenue/Auto Center Drive	0.83	D	0.83	D	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.53	A	0.53	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.74	C	0.74	C	0.00	No

Source: ATE Revised Traffic and Circulation Study, Tables 7 and 8, April 2018.

The data presented in Table 9 indicate that the project contribution to traffic would not result in significant cumulative impacts to the study area intersections based on the City's traffic impact thresholds during the a.m. or the p.m. peak hour periods. Additionally, the project applicant would be required to pay the City's standard traffic mitigation fees to off-set any project contribution to cumulative traffic increases in the City.

2. According the County's Congestion Management Program (CMP; 2009), the minimum acceptable standard for traffic operations is LOS E. However, to avoid unfair penalization to local jurisdictions for existing congestion, CMP locations that currently operate in the LOS F range are considered acceptable.

The study area intersections along Vineyard Avenue and Rose Avenue are included in the County's CMP. These intersections would operate at LOS D or better with the addition of Cumulative plus Project peak hour volumes and, thus, would not exceed the CMP LOS E standard.

3. The project would not result in a change in air traffic patterns including either an increase in traffic levels or a change in location that results in a substantial safety risk. The project represents an infill project on a parcel that has been utilized for public school uses for a number of decades. Also, as discussed in the Land Use and Planning section, the project site is located outside of the Oxnard Airport SOI. Therefore, development on the project site would not result in substantial safety risks associated with the airport. This impact would be less than significant.

4,5. Rio School Lane would be vacated by the County of Ventura for the project, with current access and parking for adjoining properties, maintained. Access to the project site would be provided by three driveways from Vineyard Avenue. The project would also be designed to incorporate fire/emergency access and circulation throughout the proposed development. Turning radius within the proposed development would accommodate maneuverability on the site of large trucks and vehicles, including fire and solid waste collection trucks. The entrances and internal circulation routes would be designed and constructed to City of Oxnard design standards and include driveway aprons.

   Construction of the project would involve typical construction equipment and project materials that would be delivered via trucks. Large flatbed trucks, dump trucks, and water trucks would travel on Vineyard Avenue, Rio Lane, and other roads in the area while delivering supplies and equipment. Streets used to access the project site are public streets designed for use by large trucks. Therefore, the project would not substantially increase hazards due to a design feature or incompatible uses. This impact would be less than significant.

6. According to the City's Bicycle and Pedestrian Master Plan (2011) and the Ventura County Regional Bikeway Wayfinding Plan (Ventura County Transportation Commission 2017), there are no existing bicycle routes adjacent to the project site. However, according to both plans, Class II Bicycle Lanes are proposed along Vineyard Avenue adjacent to the project site. Gold Coast Transit District provides bus and paratransit services in the City of Oxnard, with Route 15 transit stops along Vineyard Avenue in close proximity to the project site. Route 15 includes eastbound stops at Vineyard Avenue/Ventura Boulevard, approximately 600 feet south of the site, and Vineyard Avenue/Collins Street, approximately 1,000 feet north of the site, and a westbound stop at Vineyard Avenue/Olive Street, approximately 230 south of the site. The project would not preclude future implementation of the City's planned bicycle facilities along Vineyard Avenue or use of existing transit services. Additionally, the project would preserve the existing public sidewalk along Vineyard Avenue and would include various new pedestrian connectivity routes throughout the project site. Therefore, the project would not conflict with adopted policies, plans, or programs supporting alternative transportation. This impact would be less than significant.

Cumulative Impact Analysis: The project's contribution to cumulative impacts to transportation and circulation is evaluated under issue 1 and would be less than significant.

XVI. UTILITIES AND ENERGY	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
With respect to Utilities:				
1. Would the project need new or expanded water supply entitlements that are not anticipated in the current Urban Water Management Plan?	☐	■	☐	☐
2. Would additional wastewater conveyance or treatment capacity be required to serve project demand and existing commitments?	☐	☐	■	☐
3. Would the project generate solid waste that would exceed the permitted capacity of a landfill serving the City?	☐	☐	■	☐
4. Would the project conflict with federal, state, or local statutes or regulations related to solid waste?	☐	☐	■	☐
With respect to Energy:				
5. Would the project involve wasteful, inefficient, or unnecessary consumption of energy during project construction, operation, maintenance, and/or removal?	☐	☐	■	☐
6. Would the project require additional energy facilities, the provision of which may have a significant effect on the environment?	☐	☐	■	☐
7. Would the project be inconsistent with existing energy standards?	☐	☐	■	☐
8. Would the project preempt future energy development or future energy conservation, or inhibit the future use of renewable energy or energy storage?	☐	☐	■	☐

A Wet Utility Preliminary Investigation was prepared by Jensen Design & Survey, Inc. in August 2017 and revised through August 6, 2018 to assess existing and proposed water usage and sewer loading associated with the project. A Domestic Water Supply and Demand memorandum was also prepared by Jensen Design & Survey, Inc. in April 2019 to provide an updated analysis of projected water demand for the project, and the proposed transfer of pumping rights to the City of Oxnard from active Rio School District groundwater wells. These reports are included in Appendix I of this Initial Study. The Wet Utility Preliminary Investigation determined that operation of the former El Rio Elementary School on the project site resulted in a historical sewer loading of 12,470 gallons per day (GPD). Past water consumption for the former El Rio Elementary School is documented by allocations by the Fox Canyon Groundwater Management Agency (FCGWMA) to three separate wells that were operated by the Rio School District. This allocation was assigned to the well onsite (Well No. 02N22W22Q05S). According to the Wet Utility Preliminary Investigation, the FCGWMA existing allocation for this well is 42.676 acre-feet per year (AFY). This allocation is based on the historic allocation dating back to 1990, as adjusted by subsequent restrictions imposed by the FCGWMA – reviewed and explained in Section 3.0 of the Wet Utility Preliminary Investigation. According to the Domestic Water Supply and Demand memorandum, FCGWMA is in process of conducting hearings to adopt an Ordinance which will require well owners to reduce groundwater pumping and reduce transferable allocation and pumping rights. Based on well pumping information provided by Rio School District and review by FCGWMA, pumping a maximum of 52.074 AFY will be allowed for development on the project site once the Ordinance is adopted. Currently, the well on Rio Urbana project site would have an allocation of 10.483 AFY per the proposed future Ordinance with the remaining amount of 41.591 AFY allocated to the other two wells to be held by the Rio School District.

The Wet Utility Preliminary Investigation determined that the proposed development would result in sewer loading of 45,717 GPD. The Domestic Water Supply and Demand memorandum determined that the proposed development would result in water demand of 40.399 AFY. This equates to a net difference, or increase of 33,247 GPD of sewer loading demand and decrease of 2.277 AFY in water demand, from existing to proposed conditions.

1. Impacts to water supply

a. Water System and Sources

The discussion below provides a brief summary of the current sources of water used in the City of Oxnard and the various government agencies and regulatory systems that control those sources. Much of the information in this discussion is based on the City of Oxnard UWMP (prepared in July 2016 and updated January 19, 2018). Documents or codes and ordinance adopted by other agencies are cited as necessary. With respect to the water demands of the proposed project itself, a Wet Utility Preliminary Investigation was prepared by Jensen Design & Survey, Inc. in August 2017, and then updated in August 6, 2018, to assess existing and proposed water usage and sewer loading associated with the project. The updated version of the report is included in Appendix I of this document. That investigation identifies the existing allocation of groundwater to the Rio School site, as well as a projection of the water demand of the proposed development and the potential for reclaimed water use in the development. The earlier version of the report also provided estimates

of actual past water use on the property. The Wet Utility Preliminary Investigation also discusses sewer service, which is the topic in Issue 2 below.

The City of Oxnard provides potable water service to the existing El Rio School District facilities on the project site, even though the land is within the unincorporated area of Ventura County, outside of the existing City limits. This water service is limited to the existing storage and maintenance uses at the school district facilities, and the property will have to be annexed to the City in order for the City to provide water for the proposed development. The following paragraphs describe the water supply of the City of Oxnard.

As of 2015, the total volume of potable water distributed by the City of Oxnard to its service area was approximately 25,806 acre-feet per year (AFY).The City uses three sources of water to make up it system supply, as described in the Oxnard UWMP (Oxnard January 19, 2018:Sections 4 and 6) and summarized as follows:

- **Imported water purchased from the Calleguas Municipal Water District (CMWD)**. Surface water imported from CMWD constitutes about 36 percent of the City water supply or 8,059 AFY in 2016. CMWD obtains the vast majority of its water (about 90,000 AFY) from the Metropolitan Water District of Southern California (MWD or Metropolitan). CMWD also participates in aquifer storage and recovery projects and other projects to recover and reclaim water, but these comprise less than 5,000 AFY (CMWD UWMP June 2016:Sections 4 and 6). The larger MWD system and the CMWD system on the regional level provide a reliable water source and an administrative structure for the management of surface water. There are, however, several constraints to this system (CMWD UWMP June 2016:Section 7.1). These include:
    - Increasing demands throughout California
    - Potential for damage to SWP system and interruption of supply due to earthquake
    - Increased demands for water to support environmental resources in San Joaquin Delta
    - Drought
    - Climate Change leading to increased variability in supply
    - Need to offset historic overdraft of groundwater

  For these reasons, an increase in water supply directly from CMWD is not likely in the future without an increase in water resources available from the larger State Water Project, through MWD.

- **Groundwater purchased from the United Water Conservation District (UWCD)**, The UWCD provides about 32 percent of the City supply (7,329 AFY in 2016). UWCD obtains water from the Santa Clara River, and diverts it to spreading basins to help replenish groundwater within the Oxnard Plain. UWCD is within, and subject to the regulations of, FCGWMA, introduced in Section IX above, Hydrology and Groundwater.

- **Groundwater pumped from a system of City-owned wells** The City of Oxnard owns 10 groundwater wells throughout the Oxnard Plain, and operates six blending stations within the City. Groundwater from City-owned wells is blended at six of these stations. These City-owned wells supply about 32 percent of the potable water distributed by the City (7,186 AFY in 2016).

As with the UWCD and all other groundwater users, the City of Oxnard is subject to the monitoring and allocation requirements of the FCGWMA to help achieve and maintain sustainable use of the groundwater resources in the region.

Other programs within the City provide additional, although smaller, volumes of water. These include the Advanced Water Purification Facility (AWPF), which is part of the City's wastewater treatment system and uses Reverse Osmosis technology to produce treated wastewater that can be recycled for irrigation and other uses to offset the demand for potable water. The Calleguas Municipal Water District (discussed above) participates in this program by conveying treated wastewater from the City of Oxnard AWPF to agricultural customers for irrigation in lieu of groundwater pumping (CMWD UWMP, June 2016:Section 6.5). As of 2015 the AWPF has the capability to produce about 7,000 AFY. This effort is part of the City's Groundwater Recovery Enhancement and Treatment (GREAT) program. In coordination with other service providers in the region (including Pleasant Valley County Water District, Port Hueneme Water Agency, and UWCD, the GREAT program is a regional effort that will assist in aquifer restoration and in achieving the groundwater allocation restrictions imposed by the FCGWMA.

Another component of the City's GREAT program is its desalinization plant, or Desalter #1. This plant treats brackish groundwater, and works in conjunction with the AWPF described above and the City's groundwater injection well as part of the larger aquifer or groundwater management system. At the present time, expansion of the desalinization program to treat seawater is not considered financially feasible.

b. Applicable Regulations and Policies

The complex water supply and delivery network summarized above is regulated through a hierarchy of codes, ordinances, plans, and agreements adopted at the state, regional, and local level. The following paragraphs summarize the applicable requirements and procedures that apply to the proposed development.

California Requirements. The California Sustainable Groundwater Management Act in 2014 resulted in the designation of the Oxnard Plain as a "high priority" groundwater basin, within which local governments and agencies are required to prepare Groundwater Sustainability Plans. Any General Plan amendments or similar actions must consider compliance with applicable Groundwater Sustainability Plan (Government Code Section 65350.5). In this region, the FCGWMA was designated as the Groundwater Management Agency.

FCGWMA Requirements. Since 1982, FCGWMA has overseen monitoring and allocation of groundwater resources in the region as part of its original responsibility and authority. These actions include the development of strict groundwater monitoring requirements, preparation of a *Groundwater Management Plan* updated in 2007 (FCGWMA May 2007), several ordinances that were consolidated and updated into a single Ordinance Code in January 2015, various annual reports, and Emergency Ordinance E. The latter ordinance was in response to the state declaration of drought in 2014, and established a Temporary Extraction Allowance for Municipal and Industrial users, such as the City of Oxnard, limited to 80 percent of their annual average use between 2003

and 2012. Ordinance E also imposes additional efficiency requirements for agricultural users. Since its designation as the Groundwater Management Agency, FCGWMA has released a draft *Sustainable Groundwater Plan for the Oxnard Plain* (FCGWMA November 2017). This draft plan describes the coordinated plans and programs in the City of Oxnard (FCGWMA November 2017:Section 1.2.6.2, pages 1-28 and 1-29)—including the City's "net-zero" policy regarding water use by new development--and would further reduce groundwater allocations to 50 percent compared to the historical averages. The goals of the plan are to restore the groundwater resources in the region, and specifically to maintain groundwater elevations near the coast for the management of seawater intrusion (page 1-30).

CMWD Requirements. The Calleguas Municipal Water District also operates under an UWMP, and also has a district Code that defines its service area and annexation requirements. All groundwater use and any reclamation and recharge programs within CMWD also occur under the umbrella of the FCGWMA plans and requirements described above. The project site is not within the CMWD but would join the CMWD through annexation to the City of Oxnard. For this reason, CMWD is listed in among other agencies that must review and approve annexation (page iv of this IS-MND). The following paragraphs, provided by CMWD, describe the district and their requirements.

> Land on which the proposed projects will be built is not presently within the boundaries of Calleguas Municipal Water District or Metropolitan Water District of Southern California. The Administrative Codes of both agencies state that water delivered by their systems may be used only within their respective service area boundaries. Calleguas purchases all of its potable water from Metropolitan. Metropolitan supplies water from the Colorado River and the State Water Project for municipal, industrial and agricultural uses within its service area. Annexation to Calleguas and Metropolitan of the land under consideration is necessary to allow annexation to and water service by the City of Oxnard.
>
> Annexation procedures for Metropolitan are defined in Section 3500 of the Metropolitan Water District Act, which are also observed by Calleguas. In addition, annexations to Calleguas are subject to Part 8 of Calleguas' Administrative Code. Annexation is also subject to approval by the Ventura Local Agency Formation Commission and any terms and conditions the Commission may apply. Pursuant to Section 56017 of Part 1, Chapter 2, of the Cortese/Knox/Hertzberg Local Government Reorganization Act of 2000, annexation means the annexation, inclusion, attachment, or addition of territory to a city or district. This action will require amendment of the Spheres of Influence of Calleguas and Metropolitan.
>
> Calleguas and Metropolitan have in place Water Standby Charges. In the course of annexation, such charges will be fixed for the subject property. Water Standby Charges are assessed to pay for the benefits that properties receive from the projects and facilities provided by Calleguas and Metropolitan, whether or not they receive water from Calleguas and Metropolitan.
>
> This administrative change in water service areas will have a less than significant impact.

City of Oxnard Requirements. The City of Oxnard Municipal Code Chapter 22 addresses water resources in all respects. As a general summary, all applicants are responsible for making

arrangements for any allocation adjustments or transfers of water rights to the City, as set forth in Article VI, Section 22-100 Water Rights and Groundwater Pumping Allocations:

> …the land owner …shall transfer or assign to the city any water rights, water wells, mains, easements, and water production equipment or facilities which may be appurtenant to such property or which may be used exclusively thereon as follows:
>
> …Any and all applicable groundwater pumping allocations and/or credits attributable to the property to be served by the city and available from the Fox Canyon Groundwater Management Agency, shall be transferred to the city by the property owner. The property owner shall be responsible for all fees and charges necessary to obtain the approval of the transfer of pumping allocations and/or credits from the Fox Canyon Groundwater Management Agency to the city;

The Rio Urbana development would be subject to other municipal code provisions that identify and prohibit wasteful use of water (Article VIII, beginning at Section 22-135)) and require conformance with water conservation measures that exist or may be declared by the City in the Future (Article IX, beginning at Section 22-150). These measures would reduce water consumption internally, but would not eliminate or necessarily guarantee a complete offset any new water use caused by the project. Therefore, additional measures would be necessary to mitigate the impact of increased water use by the project. These are discussed below under mitigation. Specifically, Mitigation W-1 addresses the provision of groundwater allocation to the City within the FCGWMA to provide for the project.

c. Project Effects and Mitigation

The Domestic Water Supply and Demand memorandum determined that the water demand for all proposed uses in the Rio Urbana project would amount to 40.399 acre-feet per year (AFY). As noted above, this memorandum also estimated that the maximum pumping allowed for the three active Rio School District wells under the current FCGWMA requirements is 52.074AFY. Therefore, without any offsets, or other mitigation measures, this estimated demand would be consistent with the City of Oxnard "net-zero" policy for water use by new development and would not be considered a significant impact.

In order to provide the necessary water supply to the City for the project, the Rio School District must arrange for an allocation and transfer of sufficient water rights to the City, consistent with the requirements and procedures of the FCGWMA.

Mitigation W-1. The applicant shall provide for the allocation of groundwater pumping rights sufficient to serve the development (40.399 acre feet per year) from the Fox Canyon Groundwater Management Agency to the City of Oxnard, consistent with the ordinances and requirements of the two agencies, prior to recording the final map for the project.

Implementation of this mitigation will ensure that the project complies with the "net-zero" water service policy in the City. Thus the potential impact on water service would be less than significant.

2. The project site is located in County Service Area (CSA) No. 34, in an area informally referred to as the El Rio community. On August 12, 1999, the Regional Water Quality Control Board (RWQCB) amended the Water Quality Control Basin Plan for the Los Angeles Region and prohibited the use of septic systems in the Oxnard Forebay, including the El Rio area. CSA No. 34 was formed in December 2005 to provide administration, operations, and maintenance of a new sewer system in the area to bring the area in compliance with the State septic system prohibition. CSA No. 34 planned and constructed a sewer collection system in phases as funding was secured. All phases of the project were completed in April 2011. Phases 1 and 5D of the Sewer System Project established sewer lines adjacent to the project sites southern, western, and northern boundaries. Waste water discharged into these lines is sent to the City's Wastewater Treatment Plant for treatment and disposal. The project site is also included in the boundary area of the City of Oxnard's Wastewater Master Plan Update (September 2008). Land use projections used for creating the Wastewater Master Plan were based on the City's adopted 2020 General Plan in which the project site was identified as a Redevelopment Area.

   Existing development on the project site currently disposes of wastewater into the existing sewer line in Rio School Lane via pump and force main. This sewer line in Rio School Lane enters the 10-inch trunk sewer line in Vineyard Avenue at a manhole near the intersection of the two roadways. There was inconclusive data in the City's Wastewater Master Plan (2008) and the City's Integrated Waste Master Plan (2015) to determine the sewer capacity of the 10-inch trunk sewer line in Vineyard Avenue at the time of project submittal. Response 3.9 in Attachment 1 provides updated information regarding sewer capacity in this line. Based on updated information in the revised 2018 Wet Utility Memo prepared for the project, the City determined that the sewer transmission capacity in this line was adequate to serve the project. The proposed development on the site would connect to the existing sewer system line in Rio School Lane. Although the project would increase the load on the sewer system, the applicant would be required to pay the City-required and CSA No. 34-required Sewer Connection Fees (SCF) and service charges that finance the operation and maintenance of the sewer system for all properties in the El Rio area. With payment of these fees, the project would not result in a significant adverse effect on the system and this impact would be less than significant.

3, 4. According to the City's 2017 CEQA Guidelines, the City's Environmental Resources Division oversees solid waste programs in the City, including residential waste collection and recycling programs. Commercial facilities in the City contract with private waste haulers. The City operates the Del Norte Regional Recycling and Transfer Station (also referred to as the Materials Recovery Facility [MRF]), which serves as the hub of the City's solid waste management system and serves as a resource for rest of the County. Solid waste that is incapable of being recycled is hauled to other landfill sites in Ventura County, primarily the Toland Road Landfill. As of 2017, the City meets or exceeds state mandated rates for diversion of solid waste from landfills via waste reduction, reuse, and recycling.

   Solid waste generated from project demolition and construction activities would be segregated for recycling, where possible. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at the Toland Road

Landfill. According to the CalEEMod output generated for the Air Quality Study for the project (Appendix A), the project would generate approximately 49.1 metric tons of solid waste per year, or 0.13 tons of waste per day. In January 2016, the total remaining capacity of the Toland Road Landfill was approximately 10.6 million cubic yards and the facility is permitted to accept up to 1,500 tons of solid waste per day (CalRecycle 2018). Using a conservative assumption that all project waste would be diverted to the landfill rather than recycled, the project would contribute less than 0.01 percent of the daily permitted capacity to the landfill. With the recycling programs in place in the City and required compliance with all federal, state, and local regulations regarding solid waste disposal, the projects contribution to the landfill would be even less. Therefore, solid waste generated by the project would have a less than significant impact on the permitted remaining capacity of the landfill.

5-8. The City's standard conditions of approval and application of uniformly applied development standards require compliance with the California Green Building Code which includes energy efficiency standards. The project would involve typical to low consumption of energy during project construction, operation, and maintenance. As descried in the GHG Study (Appendix D) for the project, the project would incorporate solar panels on the proposed office building and would implement various features consistent with the latest requirements of the 2016 California Green Building Code including, energy-efficient lighting, installation of low-flow appliances, and water conservation. Therefore, the project would not require additional energy facilities, would be consistent with existing energy standards, and would not inhibit the future use of renewable energy or energy storage. Impacts would be less than significant.

Cumulative Impact Analysis: Utilities and services were analyzed by the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations.

XVII. CUMULATIVE IMPACTS	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would cumulative impact of the project in combination with the impacts of past, present, and reasonably foreseeable future projects exceed a City significance threshold?	☐	■	☐	☐
2. If so, would the project's contribution to the significant cumulative impact be cumulatively considerable?	☐	■	☐	☐

1, 2. The proposed project would result in less than significant impacts with implementation of mitigation measures BIO-1, CUL-2, N-1(a), N-1(b), and N-2 provided herein. The proposed project is an urban infill project in an area planned for development under the 2030 General Plan. Most of the surrounding properties are currently developed, and it is therefore expected that project implementation would result in less than significant cumulative impacts. Cumulative citywide significant impacts were documented in the 2030 General Plan Program EIR and overriding considerations were adopted in 2011.

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PLANNING DIVISION
214 SOUTH C STREET
OXNARD, CALIFORNIA 93030

CITY OF OXNARD CALIFORNIA

NOTICE OF INTENT
TO ADOPT MITIGATED NEGATIVE DECLARATION NO. 2017-04

The City of Oxnard Planning Division has reviewed an application on the following proposal:

PLANNING AND ZONING (PZ) PERMIT NOS. 17-610-01 (Annexation); 17-620-01 (General Plan Amendment), 17-560-01 (Pre-Zoning), 17-300-03 (Tentative Subdivision Map for Tract No. 5998), 17-500-05 (Special Use Permit – Office), 17-500-13 (Special Use Permit - Residential), and 17-535-02 (Density Bonus): Request to annex the 10.5 acre former school parcel located at 2714 E. Vineyard Avenue (APN 145-0-232-010) to the City of Oxnard with 2030 General Plan land use and zoning designations of General Commercial, and demolish five structures, paving, vegetation, and a water well in order to subdivide and develop 1.12 acres (Parcel 1) with a two-story 15,000 square foot (sf) office building with 61 parking spaces and develop 9.1 acres (Parcel 2) with 167 one to three-bedroom attached apartment condominiums (17 low income affordable units) in eight, three-story (38 feet), structures; fitness center; recreation pavilion; four refuse structures; 169 resident garages; 163 resident parking spaces; 99 guest parking spaces; storm water retention and treatment facilities; on-site utilities and off-site connections; landscaping; seven play areas with a tot lot; and a dog run. The project includes widening of Vineyard Avenue by 23 ft.; relocating four SCE 66kV transmission poles; and maintaining parking and access to abutting properties. A Density Bonus is required for three additional units and reduction in qualifying interior yard space from 30% to 24% of the parcel area. Filed by Rio School District, 2500 E. Vineyard Ave., Oxnard, CA and The Pacific Companies, 430 E. State Street #100, Eagle, Idaho.

In accordance with Section 15070 of the California Code of Regulations, the Planning Division of the City of Oxnard has determined that with the proposed mitigations, there is no substantial evidence that the proposed project would have a significant effect on the environment, and that a mitigated negative declaration may be adopted.

The draft environmental document may be reviewed at the following City webpage: https://www.oxnard.org/city-department/community-development/planning/environmental-documents/.

The draft environmental document is also available for review at the Oxnard Planning Division office (214 South "C" Street, 8:00 a.m. to 6:00 p.m., Monday through Thursday and 9:00 a.m. to 5:00 p.m. on alternative Fridays), Oxnard Main Library, 251 South "A" Street (9:00 a.m. to 8:00 p.m., Monday through Thursday, and 9:00 a.m. to 5:30 p.m. on Saturday), and at the Albert H. Soliz Library, 2820 Jourdan Street, El Rio (call for hours of operation, 805-485-4515).

The 30-day public review period begins on July 19, 2019 and ends on August 19, 2019.

All comments should be provided in writing and received before 5:00 p.m. on Monday, August 19, 2019. Inquiries should be directed to Chris Williamson, Consultant Planner, at (805) 385-8156, or by e-mail to Chris.Williamson@oxnard.org. Written comments may be faxed to (805) 385-7417 or mailed to "City of Oxnard, Planning Division, 214 South C Street, Oxnard, CA 93030 - Attn: Chris Williamson."

7.18.19
Date

Isidro Figueroa, Acting Planning Manager

cc: - Applicant
- County Clerk
- CEQA Distribution List
- Property Owners within 300 feet

Mitigation Monitoring and Reporting Plan (MMRP)

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
Biological Resources	Potentially Significant	**BIO-1** Nesting Bird and Raptor Survey and Avoidance. In the event that the proposed action is planned to occur within the general bird nesting season, a pre-construction nesting bird survey shall be conducted by a qualified biologist. The nesting season is generally considered February 1 through August 31, with a peak from March to June; however, these dates vary by year depending on prey availability, weather, and other factors. In the event an active bird is observed in the habitats to be removed or in other habitats within 100 feet for songbirds and 500 feet for raptors of the construction work areas, all construction work in the suitable habitat or within 100 feet/500 feet of the suitable habitat must be delayed until after September 1st, or surveys must be continued in order to locate any nests. If an active nest is found, clearing and construction within 100 feet/500 feet of the nest shall be postponed until the nest is vacated and juveniles have fledged, and until there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest site shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the ecological sensitivity of the area.	Less Than Significant	Community Development
Cultural and Tribal Cultural Resources	Potentially Significant	**CUL-2** A qualified archaeologist shall monitor all project-related ground-disturbing activities. In the unlikely event that potentially significant archaeological materials are encountered during construction, the applicant must comply with State regulations and City's standard condition of approval for handling such resources.	Less Than Significant	Community Development
Noise	Potentially Significant	**N-1(a)** Building Material Guidelines. The living areas for all residences in the project, including those adjacent to Vineyard Avenue, shall be constructed to include sufficient noise attenuation to reduce interior noise levels to a CNEL of 45 dBA, as required by California building standards. For the estimated exterior CNEL values of 65 dBA, this performance standard requires an exterior-to interior noise reduction of approximately 20 dBA. This noise reduction is	Less Than Significant	Community Development

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
		routinely achieved in residential construction that is consistent with current California energy conservation standards, and involves measures such as exterior stucco walls with a Sound Transmission Class (STC) rating of 45, double-paned windows with an STC of 37, solid core exterior doors. Building permit applications shall include documentation that the interior standard of 45 dBA CNEL will be achieved through a combination of these or other measures. **N-1(b)** Building Design. The living areas shall contain forced air ventilation. All duct work for ventilation shall include noise louvers at the exterior outlet and/or duct outlets shall be directed either opposite to or perpendicular to Vineyard Avenue. Upper level patio/deck areas shall not be positioned facing the Vineyard Avenue for residences along the western site boundary <u>without additional mitigation or verification that exterior CNEL values would meet the City noise standard of 65 dBA as shown in a Noise Study reviewed and approved by the Planning Manager or designee.</u>		
Noise	Potentially Significant	**N-2** Construction Noise Levels. For all construction-related activities, noise-attenuation techniques shall be employed as needed to ensure that noise remains as low as possible during construction, specifically at REC-1 through REC-3. The following noise-attenuation techniques shall be incorporated into contract specifications to reduce the impact of construction noise: • Ensure that construction equipment is properly muffled according to industry standards and in good working condition. • Place noise-generating construction equipment and locate construction-staging areas away from sensitive uses, where feasible. • Schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses. • Implement noise attenuation measures to the extent feasible, which may include but are not limited to temporary noise barriers or noise blankets around stationary construction noise sources.	Less Than Significant	Community Development

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
		• Use electric air compressors and similar power tools rather than diesel equipment, where feasible. • All stationary construction equipment (e.g., air compressors, generators, impact wrenches, etc.) shall be operated as far away from residential uses as possible and shall be shielded with temporary sound barriers, sound aprons, or sound skins. • Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. • Clearly post construction hours, allowable workdays, and the phone number of the job superintendent at all construction entrances to allow for surrounding owners to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.		
Utilities and Energy	Potentially Significant	**W-1** The applicant shall provide for the allocation of groundwater pumping rights sufficient to serve the development (40.399 acre feet per year) from the Fox Canyon Groundwater Management Agency to the City of Oxnard, consistent with the ordinances and requirements of the two agencies, prior to recording the final map for the project.	Less Than Significant	Water Division

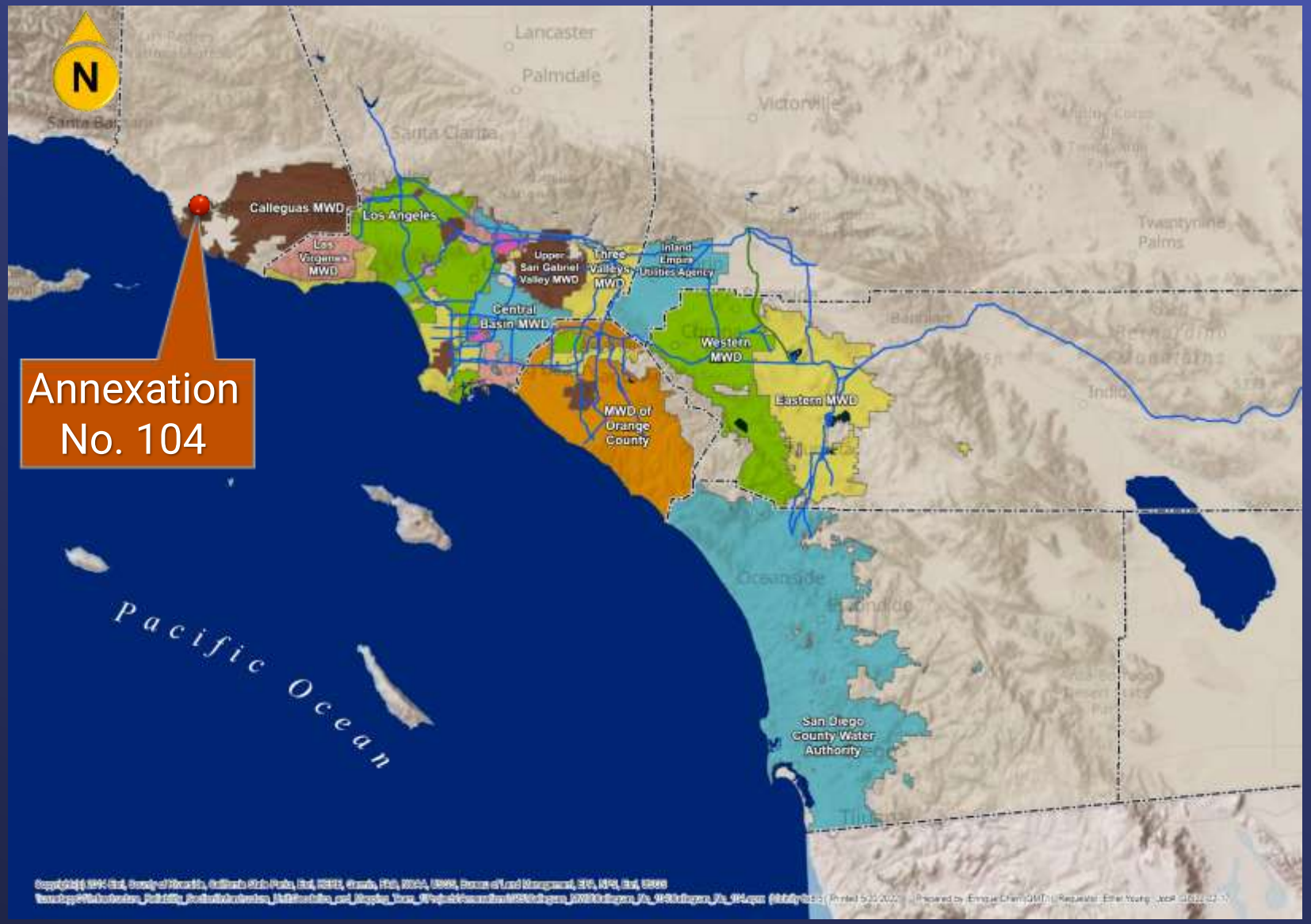
Real Property and Asset Management Committee

Adopt Resolution for Calleguas Annexation No. 104

Item 7-12

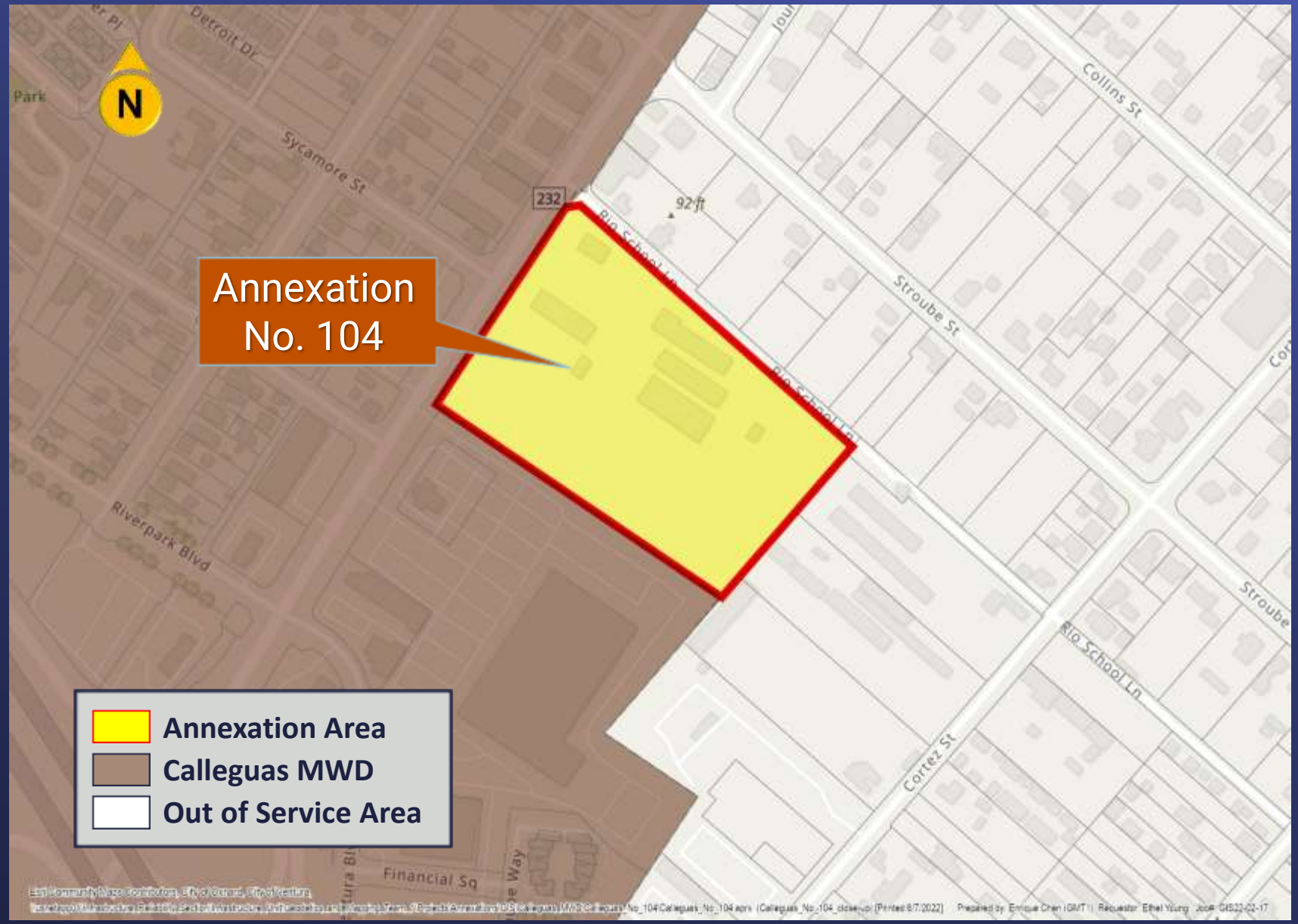
June 13, 2022

Service Area Map



Annexation Site Map

Total Area = 10.72 Acres
Public Road= 0.24 Acres
Net Area = 10.48 Acres



Key Provisions

- Annexation Area is 10.72 acres
- Total fees are $ 74,220.40
- Water use estimate is 20.20 – 24.24 AF/Y
- Annexation request is compliant with current policy and requirements

Board Options

Option 1:

- Review and Consider the Lead Agency's adopted CEQA determination and actions, and
- Adopt annexation resolution for Annexation No. 104 to Calleguas and Metropolitan

Option 2:

- Decline the Request

Board Options

Staff Recommendations

- Option 1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- **Board of Directors**
  Real Property and Asset Management Committee

6/14/2022 Board Meeting

7-13

Subject

Adopt resolution for Calleguas Annexation No. 106 to Calleguas Municipal Water District and Metropolitan; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

This action grants approval for an annexation requested by Calleguas Municipal Water District (Calleguas) and authorizes collecting Metropolitan's water standby charge and ad valorem tax. This request is compliant with current policy and requirements. This annexation request consists of approximately 6.30 acres with no public roads, leaving a net area of 6.30 acres as the basis for the annexation charge (**Attachment 1**). The new water demand from Metropolitan ranges from 21.69 to 26.01 acre-feet per year (AFY). Calleguas meets the demand management measures in the agency's Water Use Efficiency Statement of Compliance (**Attachment 2**). The charge for this annexation, if completed in 2022, is $46,618.11, which includes a $5,000 processing fee.

Details

Background

On January 19, 2022, Calleguas' board of directors adopted Resolution No. 2037, requesting formal terms and conditions for annexation and collection of a water standby charge for the proposed Calleguas Annexation No. 106. The proposed annexation would help to close a window in the service area by extending Metropolitan's and Calleguas' service area into two areas, Parcel A, a low-income housing development, and Parcel B, a neighborhood park. Parcel A is a 5.281-acre property identified as APNs: 223-0-041-020 and 223-0-090-015 located at 5536 and 5482 Cypress Road in the city of Oxnard. The affordable housing development consists of 150 residential units, with onsite amenities including a community building, learning center, centralized laundry room, community kitchen, and outdoor recreational areas for children, teens, and adults. Parcel B is an acre of land identified as APN: 223-0-090-095, located on the southernmost portion of Garden City Acres Park and is directly north of Parcel A. While a majority of the park was previously annexed, this small portion remained outside the service area.

The proposed area after annexation will be served by the city of Oxnard and will be eligible for imported water through Calleguas and Metropolitan. The charge for this annexation is $46,618.11, which includes the $5,000 processing fee collected at the time of the initial annexation request; the balance is payable prior to completion. The annexation charge is calculated based on the 2022 per-acre fee of $6,605. If the annexation is not completed in calendar year 2022, the fee would be based on the then-current annexation rate pursuant to Section 3300 of Metropolitan's Administrative Code. Pursuant to Section 3107 of Metropolitan's Administrative Code, approved November 6, 2018, Calleguas has submitted an acceptable Water Use Efficiency Statement of Compliance for this annexation project (**Attachment 2**). The projected water demand from Metropolitan is estimated to be between 21.69 and 26.01 AFY. Completion of this annexation would be subject to such terms and conditions as may be fixed by Metropolitan's Board in granting final consent to such annexation, including the Local Agency Formation Commission conditioning approval of the proposed annexation upon a requirement that all previously established and collected taxes, benefit assessments, or property-related fees or charges be established and collected on parcels being annexed to Metropolitan. This action adopts a resolution consenting to Calleguas' request for annexation with water standby charge as set forth in (**Attachment 3**). Upon completion of the annexation, the lands within Calleguas Annexation No. 106 will be subject to Metropolitan's ad valorem property

tax in the current amount of 0.0035 percent of the assessed valuation of each parcel and Metropolitan's water standby charge collected on behalf of Calleguas in the current amount of $9.58 per acre, or per a parcel of less than one acre.

Policy

Metropolitan Water District Administrative Act Section 350: Annexation of Corporate Area of Agency

Metropolitan Administrative Code Section 3100: Request for Annexation

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Pursuant to the provisions of CEQA and the State CEQA Guidelines, Calleguas, acting as the Lead Agency, prepared and processed a Notice of Exemption (NOE) for the infill development (affordable housing on 5.281 acres), finding this portion of the project categorically exempt. The NOE was filed on February 8, 2022. The environmental documentation is included as **Attachment 4**.

Metropolitan, acting as the Responsible Agency, has independently determined that the proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action involves the annexation process on the property known as the 5536 and 5482 Cypress Road (i.e., Cypress Place at Garden City) and 5302 Cypress Road (i.e., Garden City Acres Park) property into Metropolitan and Calleguas' service areas. Metropolitan finds that this land is an infill development and is consistent with the applicable general plan designation and policies, as well as with applicable zoning designation and regulations, and involves annexation of individual small parcels of the minimum size. Additionally, the proposed action qualifies as 100 percent affordable housing development and meets the requirements of Senate Bill 35 and Government Code Section 65913.4 as a Streamlined Infill Project. Accordingly, the proposed action is categorically exempt and qualifies under Class 19 and Class 32 Categorical Exemptions (Sections 15319 and 15332 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt resolution for Calleguas Annexation No. 106 concurrently to Calleguas and Metropolitan

Fiscal Impact: Receipt of annexation fee of $46,618.11 for the annexation area and water sales revenue from the newly annexed territory.

Business Analysis: This annexation will provide the ability for water service and associated benefits to the property owners. The initial fixed and variable costs will be borne by the local water supplier and property owners, including processing, infrastructure, and the cost of raw and treated water. This annexation helps to meet Metropolitan's member agency request.

Option #2

Decline the request for the proposed Calleguas Annexation No. 106.

Fiscal Impact: Unrealized annexation fee and water sales revenue from non-annexed areas.

Business Analysis: The subject area will not receive the direct benefits of water supplied through Calleguas and Metropolitan.

Staff Recommendation

Option #1

5/23/2022

Lilly L. Shraibati *Date*
Manager, Real Property Group

5/24/2022

Adel Hagekhalil *Date*
General Manager

Attachment 1 – Annexation No. 106 Map and Legal Description

Attachment 2 – Annexation No. 106 Water Use Efficiency Statement of Compliance

Attachment 3 – Annexation No. 106 Resolution

Attachment 4 – Annexation No. 106 Environmental Documentation

Ref# rpdm12687316

EXHIBIT A

CALLEGUAS MUNICIPAL WATER DISTRICT ANNEXATION (CALLEGUAS ANNEXATION NO. 106)

Portions of Lots 12 and 13, and Ventura County Ditch, in the City of Oxnard, County of Ventura, State of California, as shown on the map of Garden City Acres Tract, filed in Book 11, Page 105 of Miscellaneous Records (Maps), described as follows:

PARCEL A

BEGINNING at a point in the westerly line of said Lot 12, said point being the southerly terminus of the 11th course of Parcel No. 3 of Annexation No. 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water District, as described in Certificate of Filing recorded on November 13, 1969 in the Office of said County Recorder in Book 3579, Page 129 of Official Records of said County; thence, along the west line of said Lots 12 and 13, said west line also being the existing Calleguas Municipal Water District boundary,

1st - North 0°02'00" West 300.13 feet to the Point of Beginning of Parcel A described in Instrument No. 20201015-00170280-0 of Official Records of said County; thence leaving said existing district boundary and along the 1st, 2nd, and a portion of the 3rd course of said Parcel A, the following three courses,

2nd - North 89°53'00" East 51.00 feet; thence,

3rd - North 0°01'00" West 51.00 feet to a point in the north line of said Lot 12; thence,

4th - North 89°53'00" East 78.99 feet to the southwesterly corner of Parcel B described in said Instrument No. 20201015-00170280-0 of Official Records; thence, leaving said 3rd course of Parcel A and along the northwesterly line of said Parcel B the following four courses,

5th - North 0°02'00" West 89.31 feet; thence,

6th - North 89°53'00" East 170.00 feet; thence,

7th - North 0°02'00" West 50.00 feet; thence,

8th - North 89°53'00" East 324.91 feet to the northeasterly corner of said Parcel B; thence, continuing along the easterly prolongation of the previously described course,

9th - North 89°53'00" East 10.00 feet to the east line of said Ventura County Ditch, 10.00 feet wide, said east line being also the westerly line of Parcel No. 57 of said Annexation No. 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water District, and also being the existing boundary of said Calleguas Municipal Water District; thence, along said east line and the existing boundary of said Calleguas Municipal Water District,

10th - South 0°01'00" East 192.65 feet to the northwesterly line of Parcel No. 5 of said Annexation No. 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water

EXHIBIT A

District; thence, continuing along the existing boundary of said Calleguas Municipal Water District and said northwesterly line, the following two courses,

11th - South 49°32'00" West 434.59 feet to the beginning of a tangent curve concave southeasterly, having a radius of 2939.40 feet; thence,

12th - Southwesterly along said tangent curve through a central angle of 0°29'30", an arc length of 25.22 feet to the easterly terminus of the 12th course of said Parcel No. 3 of Annexation 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water District; thence leaving said northwesterly line and along said 12th course and the existing boundary of said Calleguas Municipal Water District,

13th - South 89°53'00" West 284.93 feet, more or less, to the **POINT OF BEGINNING**.

Parcel A containing 5.281 acres, more or less.

PARCEL B

COMMENCING at a point in the westerly line of said Lot 12 of said Garden City Acres Tract, said point being the southerly terminus of the 11th course of Parcel No. 3 of Annexation No. 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water District, as described in Certificate of Filing recorded on November 13, 1969 in the Office of said County Recorder in Book 3579, Page 129 of Official Records of said County; thence, along the west line of said Lots 12 and 13, said west line also being the existing Calleguas Municipal Water District boundary, thence, North 0°02'00" West 300.13 feet to the Point of Beginning of Parcel A described in Instrument No. 20201015-00170280-0 of Official Records of said County; thence leaving said existing district boundary and along the 1st, 2nd, and a portion of the 3rd course of said Parcel A, the following three courses, thence, North 89°53'00" East 51.00 feet; thence, North 0°01'00" West 51.00 feet to a point in the north line of said Lot 12; thence, North 89°53'00" East 78.99 feet to the southwesterly corner of Parcel B described in said Instrument No. 20201015-00170280-0 of Official Records; thence, leaving said 3rd course of Parcel A and along the northwesterly line of said Parcel B the following four courses, North 0°02'00" West 89.31 feet; thence, North 89°53'00" East 170.00 feet; thence, North 0°02'00" West 50.00 feet, to the **POINT OF BEGINNING**, thence,

1st - North 89°53'00" East 324.91 feet to the northeasterly corner of said Parcel B; thence, continuing along the easterly prolongation of the previously described course,

2nd - North 89°53'00" East 10.00 feet to the east line of said Ventura County Ditch, 10.00 feet wide, said east line being also the westerly line of Parcel No. 57 of said Annexation No. 7 (Oxnard Second Fringe Area) to the Calleguas Municipal Water District, and also being the existing boundary of said Calleguas Municipal Water District; thence, along said east line and the existing boundary of said Calleguas Municipal Water District,

3rd - North 0°01'00" West 70.00 feet to the easterly terminus of the 6th course of Parcel A of Annexation No. 85 (Cypress No. 1) to the Calleguas Municipal Water District, as described in Certificate of Completion recorded on January 3, 2006 in the Office of

EXHIBIT A

said County Recorder as Instrument No. 20060103-0000853 of Official Records of said County; thence, continuing along the existing boundary of said Calleguas Municipal Water District, said 6th course of Parcel A, and the 7th course of said Parcel A, the following three (3) courses,

4th - South 89°53'00" West 10.00 feet to the westerly line of said Ventura County Ditch, 10.00 feet wide, thence,

5th - South 89°53'00" West 624.93 feet, to the easterly line of Cypress Road, 50.00 feet wide, thence along said easterly line,

6th - South 00°02'00" East 70.00 feet to the easterly prolongation of the north line of said Parcel B, thence leaving said easterly line, along said prolongation,

7th - North 89°53'00" East 300.00 feet, more or less, to the **POINT OF BEGINNING**.

Parcel B containing 1.020 acres, more or less.

All as shown on EXHIBIT B attached hereto and made a part hereof.

Disclaimer: for assessment purposes only. This description of land is not a legal property description as defined in the subdivision map act and may not be used as the basis for an offer for sale of the land described.

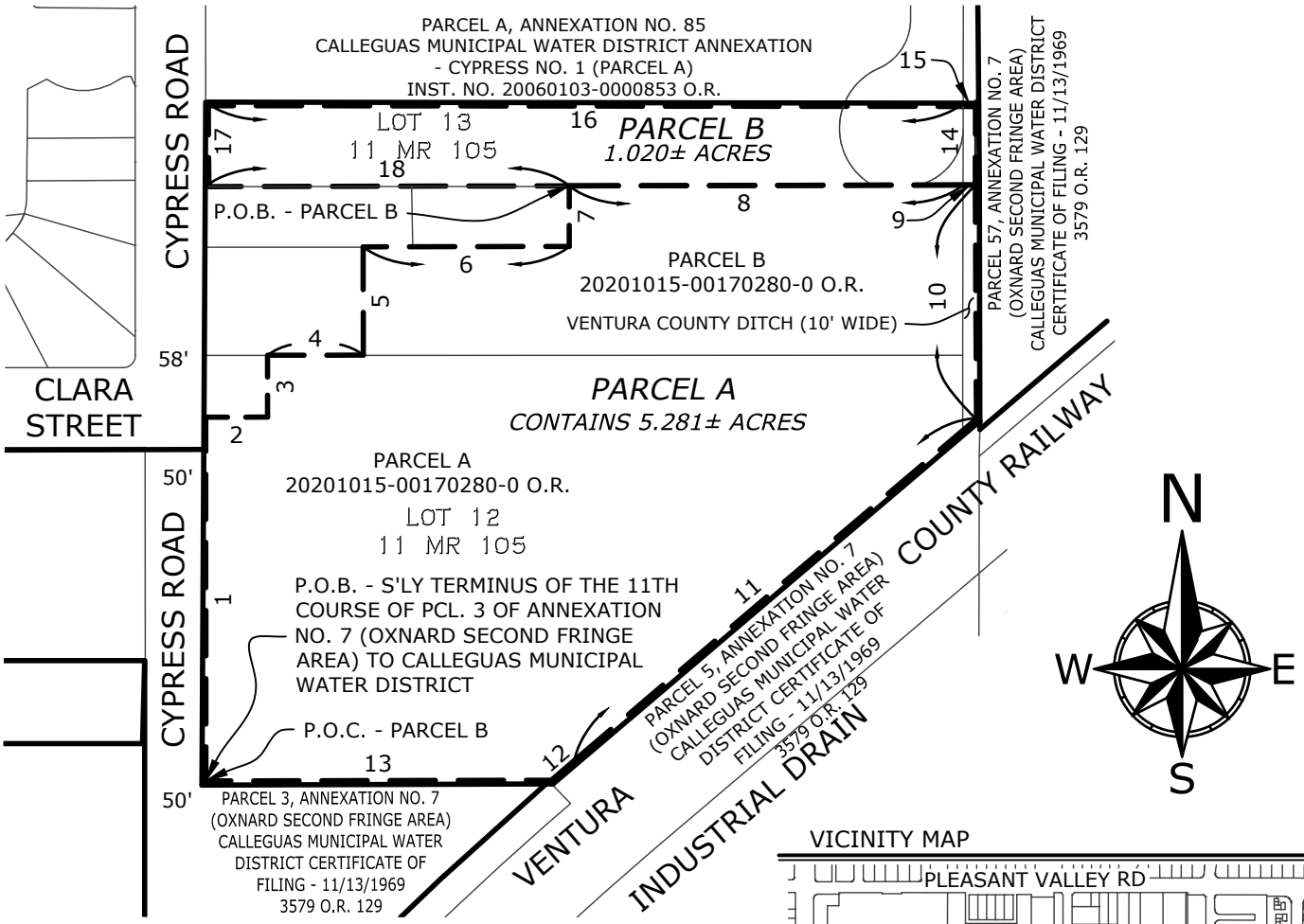
1/20/2022

Benjamin P. Hardin, PLS 8552 Date

The Metropolitan Water District
of Southern California
Geodetics & Mapping Team
ANNEXATION - CONDITIONAL REV
Reviewer: B.G. Date: 01/24/22

EXHIBIT B

THIS EXHIBIT IS TO BE ATTACHED TO THE LEGAL DESCRIPTION

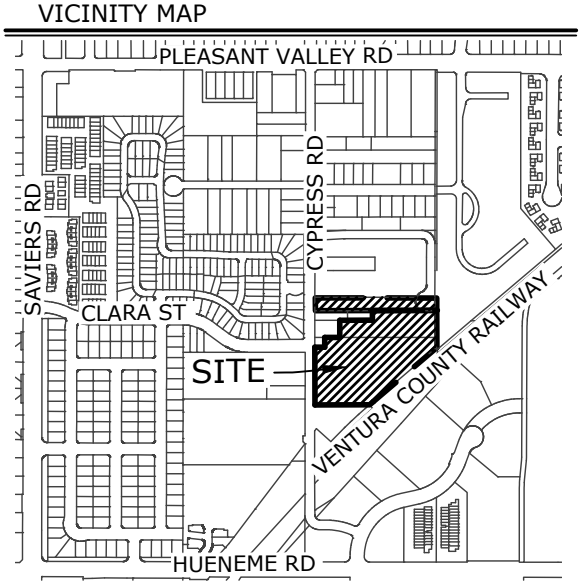


EXISTING CALLEGUAS MUNICIPAL WATER DISTRICT BOUNDARY

PROPOSED ANNEXATION BOUNDARY

NOTE: SEE SHEET 2 FOR LINE AND CURVE TABLE

VICINITY MAP



The Metropolitan Water District
of Southern California
Geodetics & Mapping Team
ANNEXATION - CONDITIONAL REV
Reviewer: B.G. Date: 01/24/22

PROFESSIONAL LAND SURVEYOR
BENJAMIN P. HARDIN
NO 8552
STATE OF CALIFORNIA

1/20/2022

BENJAMIN P. HARDIN, PLS 8552 DATE

CALLEGUAS MUNICIPAL WATER DISTRICT ANNEXATION
(CALLEGUAS ANNEXATION NO. 106)
PARCELS A AND B

PORTIONS OF LOT 12 AND 13 OF THE GARDEN CITY ACRES TRACT, BEING A PORTION OF SUBDIVISION NO. 83 OF RANCHO EL RIO DE SANTA CLARA O'LA COLONIA, IN THE CITY OF OXNARD, COUNTY OF VENTURA, STATE OF CALIFORNIA, PER 11 MR 105

ECG Encompass Consultant Group

SCALE: 1"=150'

0 150 300

0467 0467LAFCO 1" = 150'

SHEET 1 OF 2

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DISCLAIMER: FOR ASSESSMENT PURPOSES ONLY. THIS DESCRIPTION OF LAND IS NOT A LEGAL PROPERTY DESCRIPTION AS DEFINED IN THE SUBDIVISION MAP ACT AND MAY NOT BE USED AS THE BASIS FOR AN OFFER FOR SALE OF THE LAND DESCRIBED.

EXHIBIT B

THIS EXHIBIT IS TO BE ATTACHED TO THE LEGAL DESCRIPTION

ANNEXATION LINE/CURVE TABLE			
LINE/CURVE	LENGTH	DIRECTION/DELTA	RADIUS
1	300.13	N00°02'00"W	-
2	51.00	N89°53'00"E	-
3	51.00	N00°01'00"W	-
4	78.99	N89°53'00"E	-
5	89.31	N00°02'00"W	-
6	170.00	N89°53'00"E	-
7	50.00	N00°02'00"W	-
8	324.91	N89°53'00"E	-
9	10.00	N89°53'00"E	-
10	192.65	S00°01'00"E	-
11	434.59	S49°32'00"W	-
12	25.22'	00°29'30"	2,939.40'
13	284.93	S89°53'00"W	-
14	70.00	N00°01'00"W	-
15	10.00	S89°53'00"W	-
16	624.93	S89°53'00"W	-
17	70.00	S00°02'00"E	-
18	300.00	N89°53'00"E	-

CALLEGUAS MUNICIPAL WATER DISTRICT ANNEXATION
(CALLEGUAS ANNEXATION NO. 106)
PARCELS A AND B

PORTIONS OF LOT 12 AND 13 OF THE GARDEN CITY ACRES TRACT, BEING A PORTION OF SUBDIVISION NO. 83 OF RANCHO EL RIO DE SANTA CLARA O'LA COLONIA, IN THE CITY OF OXNARD, COUNTY OF VENTURA, STATE OF CALIFORNIA, PER 11 MR 105

Encompass Consultant Group

0467 0467LAFCO 1" = 150'

SHEET 2 OF 2

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Documentation for Annexation of Territory to
The Metropolitan Water District of Southern California (MWD)

Water Use Efficiency Compliance Statement

Calleguas Municipal Water District Annexation 106 – Cypress Place at Garden City/Garden City Acres Park

A. General Information

Description of Annexing Area	Member Agency: Calleguas Municipal Water District Annexation Name: Annexation 106 – Cypress Place at Garden City/Garden City Acres Park Water Use: CMWD CY 2021 (Imported Demands – Sales to Other Agencies): 92,923 AF Annexing Water Demand (Parcel A: Cypress Place at Garden City): 37.79 AFY Imported Water Demand (Parcel A: Cypress Place at Garden City): 18.90-22.67 AFY Annexing Water Demand (Parcel B: Garden City Acres Park)*: 5.57 AFY Imported Water Demand (Parcel B: Garden City Acres Park)*: 2.79-3.34 AFY TOTAL Annexing Water Demand: 43.36 AFY TOTAL Imported Water Demand: 21.68-26.02 AFY Percent MWD Supplied: 50-60% *Amount used to irrigate the entire Garden City Acres Park, the majority of which is already within the service area; the annexing parcel is a subset of this total Parcel A Development Plans: Residential Low-Medium (City of Oxnard) Parcel A Zoning: Multiple-Family AAHOP [R2-AH] (City of Oxnard) Parcel B Development Plans: Park (City of Oxnard) Parcel B Zoning: Community Reserve [CR] (City of Oxnard) Address: Cypress Place at Garden City: 5536 and 5482 Cypress Road, Oxnard, 93033 (APN: 223-0-041-020 and APN: 223-0-090-015 Garden City Acres Park: 5302 Cypress Road, Oxnard, 93033 (APN: 223-0-090-095) Additional Water Agencies Involved in Annexation: 1. City of Oxnard

B. Member Agency Water Use and Efficiency Plans

(1) Annual Water Use.

1. Does your agency minimize annual water demand and peak demands by incorporating water conservation measures throughout the service area? Please describe such conservation measures in the service area. **MWD Administrative Code § 3107 (a)(1)(i)**	Member Agency Response: **Yes** Description: ▪ CMWD contributes cash incentives beyond MWD rebates in the amount of $25 per device for high efficiency clothes washers, premium high efficiency toilets, weather-based irrigation controllers and soil moisture sensor systems. Effective September 1, 2021, Calleguas also adds a $1 supplement per square foot to MWD's turf rebate, for a total of $3/square foot for Calleguas customers. It does this in conjunction with participation by member purveyors. ▪ Calleguas' staff includes a Principal Resource Specialist who actively promotes and coordinates Metropolitan and Calleguas conservation programs. Activities include direct contact with builders, dissemination of literature, and presentations to public and industry groups.

	▪ Calleguas relies on its Member Purveyors to enforce compliance with mandated conservation measures at the local level as part of the project approval process. ▪ Newly annexing territory is conditioned to be compliant with: Metropolitan Water District of Southern California Administrative Code 3107 (as amended over time), California Water Code Sections 13550-13557, Calleguas Resolution No. 903 and Calleguas Ordinance No. 17. Reporting on compliance is required by the Member Purveyor and the property owner through provisions of Exhibit 'C' attached to Calleguas annexation resolutions. Supporting Documentation: Please refer to: 1) CMWD 2020 Urban Water Management Plan Pages 9-1 through 9-4. 2) CMWD Resolution 1964 - Attachment C (pg. 50-51)
2. Does your service area maximize use of groundwater, local surface water, and recycled waste water supplies to minimize annual water demand on MWD? Please describe such maximizing uses in the service area. **MWD Administrative Code § 3107 (a)(1)(ii)**	Member Agency Response: **Yes** Description: CMWD member agencies produce and distribute approximately 40,000 to 50,000 AF of water from local sources annually. Sources include imported surface water supplied to the City of Oxnard by United Water Conservation District, groundwater, and recycled water. The Regional Salinity Management Program involves construction of a pipeline to dispose of brine concentrates and thereby facilitate the use of high-salinity groundwater and recycled wastewater in the Calleguas watershed. 16.7 miles of the pipeline and the ocean outfall are complete. Ultimately it will extend from the outfall 32 miles inland to Simi Valley. When complete and fully utilized by CMWD member agencies, the pipeline will substantially increase local water supplies. Working with its member purveyors, CMWD has identified several other potential projects for recovering low quality groundwater and recycling. The program has the potential of providing 40,000 AF of potable water annually directly offsetting demand on MWD. Supporting documentation: Please visit smp.calleguas.com
3. Does your service area construct and operate local storage and groundwater production facilities as required by California Water Code Sections 10700-10710 (Groundwater Resources)? Please describe such construction and operations in the service area. **MWD Administrative Code § 3107 (a)(1)(iii)**	Member Agency Response: **Yes** Description: Member purveyors with groundwater pump more heavily in summer months. In addition, the District operates ten reservoirs with a combined capacity of 63 million gallons to reduce daily peaking. CMWD Ordinance No. 12 penalizes member purveyors for extremes of high and low flow and imposes the Capacity Reservation Charge on member purveyors as an incentive to reduce peaking. Calleguas itself also maintains groundwater facilities in the Las Posas Basin. Groundwater supplies in the Las Posas Valley Groundwater Basin may be utilized in the event of an emergency. Supporting Documentation: Please see: 1) Calleguas Urban Water Management Plan 2020, Chapter 6; 2) Calleguas 2017 Potable Water Master Plan Executive Summary Pages 9-14 and 25-27; 3) Calleguas Ordinance No. 12, Page 2
4. Does your agency condition all new territory to be consistent with all applicable city, county, and state laws? **MWD Administrative Code § 3107 (a)(1)(iv)**	Member Agency Response: **Yes** Description: ▪ Newly annexing territory is conditioned to be compliant with: Metropolitan Water District of Southern California Administrative Code 3107 (as amended

	over time), California Water Code Sections 13550-13557, Calleguas Resolution No. 903 and Calleguas Ordinance No. 17. Reporting on compliance is required by the Member Purveyor and the property owner through provisions of Exhibit 'C' attached to Calleguas annexation resolutions. ▪ Further, 'Exhibit C' of CMWD Resolution 1964 captures compliance with the Model Water Efficient Landscape Ordinance, known as 'MWELO', by conditioning newly annexed territory to be compliant with the City of Oxnard Municipal Code (Chapter 22), which contains MWELO provisions as specified in Article XIII. Landscape Water Conservation Standards. ▪ Calleguas relies on its Member Purveyors to enforce compliance with mandated conservation measures at the local level as part of the project approval process. Supporting Documentation: Please refer to: 1) CMWD Resolution 1964 - Attachment C (pg. 50-51)

(2) Recycled Water.

5. Does your service area use recycled water in accordance with California Water Code Sections 13550-13557 (Water Reuse)? Please describe such recycled water use in the service area. **MWD Administrative Code § 3107 (a)(2)**	Member Agency Response: **Yes** Description: ▪ Calleguas supports the use of recycled water in accordance with Water Code Sections 13550-13557 wherever it is feasible to do so within its service area. ▪ In recent years, the City of Oxnard delivered highly treated wastewater through the CMWD Salinity Management Pipeline for delivery to CII users. However, this operation will be not be feasible when the City of Camarillo's North Pleasant Valley Desalter begins its discharge to the SMP (estimated in 2022). ▪ The City of Oxnard continues to study maximizing production from its Advanced Water Purification Facility (AWPF). The City of Oxnard is currently planning for an Indirect Potable Reuse (IPR) project that began pilot testing in 2020. ▪ Calleguas built three pipelines to facilitate distribution of recycled water by its member purveyors. In 2017 these pipelines delivered 1,655 Acre-feet of recycled water. In May of 2017 two of the recycled pipelines were sold to Triunfo Water & Sanitation District, which continues to operate them. Today, Calleguas owns a small pipeline that provides recycled water to the City of Simi Valley (VCWWD No. 8). In the future, it is expected that the City of Simi Valley will take ownership, operation, and maintenance of this delivery facility. Additional AF of recycled water are distributed for M and I use by CMWD purveyors. Most of these deliveries are used for landscape irrigation and directly offset potable demand. Supporting Documentation: Please see: 1) Calleguas 2020 Urban Water Management Plan Page 4-4, Pages 6-8 to 6-10; 2) Calleguas 2017 Potable Water Master Plan Executive Summary Pages 11. 3) Regional Salinity Management Program Brochure 4) City of Oxnard Recycled Water Webpage. 5) Oxnard IPR Program

(3) Local Resources.

6. Has your agency established measures to sustain a seven-to 21-day interruption in service, as required by MWD Administrative Code Section 4503(b)?	Member Agency Response: **Yes** Description: ▪ Calleguas can call on multiple sources of water to sustain service through a 7-day interruption of supplies from Metropolitan. Lake Bard has usable storage capacity of 7,500 AF as a potable supply. The Lake Bard Water Filtration Plant can produce 90 cubic feet per second (CFS). Additionally, Calleguas presently holds the right to roughly 95,000 AF of groundwater.

MWD Administrative Code § 3107 (a)(3)	During a shutdown, Calleguas can produce 55 CFS from its Las Posas ASR Project. Other Calleguas groundwater supplies can by agreement be extracted by its member purveyors. These supplies are sufficient to meet demand in the Calleguas service area in winter and spring months. In addition, interconnections with the City of Ventura and Las Virgenes MWD are currently in the planning phase and construction phase, respectively. ▪ Calleguas' staff includes an Emergency Response Coordinator. This position leads the District's disaster management programs. ▪ Calleguas' member purveyors can augment these supplies during such short-term interruptions with increased groundwater pumping and other regional resources so that summer demand can be largely satisfied with minimal delivery curtailment. ▪ The District would heavily emphasize water conservation and a message of "NO OUTDOOR IRRIGATION" should Calleguas face a prolonged interruption in service from MWD. ▪ Calleguas is in the process of finalizing a Water Supply Alternatives Study (WSAS) that examines more than 90 projects that could increase the District's reliability (& redundancy) at least cost. This is a long-range planning document. Supporting Documentation: Please refer to: 1) Calleguas 2020 Urban Water Management Plan Chapter 8 (Water Shortage Contingency Planning) and Appendix K (Water Shortage Continency Plan); and 2) Imported Water Outage Planning

C. Reporting to the District

7. Has your agency incorporated conservation measures in the new territory? Please describe such measures. **MWD Administrative Code § 3107(b)(1)**	Member Agency Response: **Yes** Description: ▪ Newly annexing territory is conditioned to be compliant with: Metropolitan Water District of Southern California Administrative Code 3107 (as amended over time), California Water Code Sections 13550-13557, Calleguas Resolution No. 903 and Calleguas Ordinance No. 17. Reporting on compliance is required by the Member Purveyor and the property owner through provisions of Exhibit 'C' attached to Calleguas annexation resolutions. ▪ Calleguas relies on its Member Purveyors to enforce compliance with mandated conservation measures at the local level as part of the project approval process. Supporting Documentation: Please refer to: 1) CMWD Resolution 1964 - Attachment C (pg. 50-51)
8. What is your agency's total annual production of local water supplies including, but not limited to, recycled water, groundwater, and local surface water use? **MWD Administrative Code § 3107(b)(2)**	Member Agency Response: ▪ Per CY 2020 reconciliation (Local Production All Sources): 43,327.7 AF ▪ Per CY 2020 reconciliation (CMWD Imported Sales): 89,631.5 AF ▪ CY 2021 reconciliation will occur when prompted by MWD WRM staff.
9. Has your agency established resources to sustain a seven-to 21-day interruption in service, as required by MWD Administrative	Member Agency Response: **Yes** Description: ▪ Calleguas can call on multiple sources of water to sustain service through a 7-day

Code Section 4503(b)? Please describe such resources, as applicable to your agency's facilities, as specified in MWD Administrative Code §§ 3107(b)(3). **MWD Administrative Code § 3107(b)(3)**	interruption of supplies from Metropolitan. Lake Bard has usable storage capacity of 7,500 AF as a potable supply. The Lake Bard Water Filtration Plant can produce 90 cubic feet per second (CFS). Additionally, Calleguas presently holds the right to roughly 95,000 AF of groundwater. During a shutdown, Calleguas can produce 55 CFS from its Las Posas ASR Project. Other Calleguas groundwater supplies can by agreement be extracted by its member purveyors. These supplies are sufficient to meet demand in the Calleguas service area in winter and spring months. In addition, interconnections with the City of Ventura and Las Virgenes MWD are currently in the planning phase and construction phase, respectively. ▪ Calleguas' staff includes an Emergency Response Coordinator. This position leads the District's disaster management programs. ▪ Calleguas' member purveyors can augment these supplies during such short-term interruptions with increased groundwater pumping and other regional resources so that summer demand can be largely satisfied with minimal delivery curtailment. ▪ Finally, the District would heavily emphasize water conservation and a message of "NO OUTDOOR IRRIGATION" should CMWD face a prolonged interruption in service from MWD.
10. Has your agency submitted a current Urban Water Management Plan (UWMP) to the reporting agency? **MWD Administrative Code § 3107(b)(4)(i)**	Member Agency Response: **Yes** Description: ▪ Calleguas' 2020 UWMP is available on its website: https://www.calleguas.com/cmwdfinal2020uwmp.pdf ▪ The City of Oxnard's 2020 UWMP: https://www.oxnard.org/city-department/public-works/water/uwmp/
11. Does your agency's most current UWMP include a narrative description addressing the nature and extent of each water demand management measure implemented over the past 5 years, as required by California Water Code Section 10631(f)? **MWD Administrative Code § 3107(b)(4)(ii)**	Member Agency Response: **Yes** Description: ▪ Calleguas' 2020 UWMP is available on its website: https://www.calleguas.com/cmwdfinal2020uwmp.pdf, see Chapter 9, Demand Management Measures ▪ The City of Oxnard's 2020 UWMP: https://www.oxnard.org/city-department/public-works/water/uwmp/, see Chapter 9, Demand Management Measures
12. Does your agency's most current UWMP adequately address California Water Code requirements? **MWD Administrative Code § 3107(b)(4)(iii)**	Member Agency Response: **Yes** Description: ▪ Calleguas' 2020 UWMP is available on its website: https://www.calleguas.com/cmwdfinal2020uwmp.pdf ▪ The City of Oxnard's 2020 UWMP: https://www.oxnard.org/city-department/public-works/water/uwmp/ ▪ The Department of Water Resources (DWR) is currently reviewing the Calleguas MWD 2020 UWMP and the City of Oxnard 2020 UWMP. Documentation regarding DWR's determination of each agency's 2020 UWMP compliance with California Water Code (CWC) requirements can be provided upon receipt.
13. What is the status of implementing the water plans, projects, and programs described in the UWMP to implement California Water Code Section 10620 et seq.?	Member Agency Response: In progress Description: ▪ Calleguas relies in part on the MWD Water Surplus & Drought Management Plan, including the periodic updates to MWD's Water Supply Allocation Plan (WSAP).

MWD Administrative Code § 3107(b)(5)	▪ As required for the 2020 CMWD UWMP update, the District developed its own Water Shortage Contingency Plan (WSCP). See Calleguas 2020 Urban Water Management Plan Appendix K ▪ The Calleguas MWD Final 2020 UWMP and WSCP were adopted by the Calleguas Board of Directors on June 2, 2021 (Resolution No. 2018).

MWD

MWD Employee Name: Ethel Young File Date: 2/24/2022

MWD Employee Name: [signature] Review Date: 2/24/2022

Notes:

MWD Member Agency

The following member agency assures compliance with the provisions of Metropolitan's Water Use Efficiency Guidelines for the next five years as indicated in Metropolitan's Administrative Code § 3107 and shall report to Metropolitan regarding such compliance.

Agency Name: **Calleguas Municipal Water District** Date: 2/10/2022

Member Agency Representative Name: Dan Drugan, Manager of Resources

[signature]

Notes: N/A

RESOLUTION XXXX

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
CONSENTING TO CALLEGUAS MUNICIPAL WATER DISTRICT'S
CALLEGUAS ANNEXATION NO. 106
AND FIXING THE TERMS AND CONDITIONS
TO
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

WHEREAS, the Board of Directors of the Calleguas Municipal Water District ("Calleguas"), a county water authority situated in the county of Ventura, state of California, pursuant to Resolution No. 2037, in accordance with the provisions of the Metropolitan Water District Act (MWD Act), has applied to the Board of Directors of The Metropolitan Water District of Southern California (Metropolitan) for consent to annex thereto certain uninhabited territory situated in the county of Ventura referred to as Calleguas Annexation No. 106, more particularly described in an application to the Ventura County Local Agency Formation Commission (LAFCO), concurrently with Calleguas Annexation No. 106 thereof to Calleguas, such annexation to Metropolitan to be upon such terms and conditions as may be fixed by the Board of Directors of Metropolitan;

WHEREAS, the owner of Ventura County Assessor Parcel Number 223-0-041-020, 223-0-090-015, and 223-3-090-095 (Property) has applied for annexation into the Calleguas and Metropolitan service areas;

WHEREAS, completion of said Annexation No. 106 shall be contingent upon approval by the LAFCO; conditioning its approval of the Calleguas Annexation No. 106 upon a requirement that Metropolitan's existing and established taxes, benefit assessments, or property-related fees or charges in place in the service area are levied or fixed and collected on the parcels being annexed to the agency; these taxes, benefit assessments, or property-related fees or charges are identified below;

WHEREAS, Metropolitan has levied and collected ad valorem taxes on parcels within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9301, adopted by Metropolitan's Board on April 12, 2022;

WHEREAS, since fiscal year 1992-93, Metropolitan has levied and collected water standby charges pursuant to Section 134.5 of the MWD Act on parcels within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9307, adopted by Metropolitan's Board on May 10, 2022;

WHEREAS, upon Annexation No. 106, the parcel will be within Metropolitan's service area, Metropolitan water will be available to such parcels and such parcels will receive the benefit of the projects provided in part with proceeds of Metropolitan's water standby charges. Upon completion of the annexation, the lands within the Calleguas Annexation No. 106 will be subject to Metropolitan's water standby charge in the current amount of $9.58 per an acre, or per a parcel of less than one acre. Approval of Metropolitan's standby charge levied elsewhere within Calleguas' territory is a condition to complete this annexation;

WHEREAS, pursuant to the provisions of the California Environmental Quality Act (CEQA), Calleguas Municipal Water District, acting as Lead Agency, prepared a Notice of Exemption (NOE) for the Calleguas Annexation No. 106 Project, and approved the Project on January 24, 2022, to annex the affordable housing infill development, and Metropolitan, as Responsible Agency, independently determined that the proposed action is categorically exempt as an infill development and annexation of individual small parcels of a minimum size, and qualifies as 100% affordable housing development per Senate Bill 35 and Government Code Section 65913.4 as a streamlined infill project; and

WHEREAS, it appears to this Board of Directors that such application should be granted, subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of Metropolitan, acting as Responsible Agency, reviewed and considered the information in the NOE prior to approval of the final terms and conditions for Calleguas Annexation No. 106; and subject to the following terms and conditions, does hereby grant the application of the governing body of Calleguas Municipal Water District for consent to annex Calleguas Annexation No. 106, to Metropolitan and does hereby fix the terms and conditions of such annexation.

BE IT FURTHER RESOLVED that the Board of Directors of Metropolitan, subject to the following terms and conditions, does hereby grant the application of the governing body of Calleguas for consent to Calleguas Annexation No. 106 to Metropolitan and does hereby fix the terms and conditions of such annexation:

Section 1. Annexation of said area to Calleguas shall be made concurrently with annexation thereof to Metropolitan, and all necessary certificates, statements, maps, and other documents required to be filed by or on behalf of Calleguas to effectuate Annexation No. 106 shall be filed on or before December 31, 2023.

Section 2. Prior to filing a request for a Certificate of Completion of Annexation No. 106 proceedings with LAFCO, Calleguas shall submit a certified copy of LAFCO's resolution approving Annexation No. 106 to Calleguas and shall pay to Metropolitan $46,618.11 for its annexation fee, if annexation is completed by December 31, 2022. If the annexation is completed during the 2023 calendar year, the annexation charge will be calculated based on the then-current rate, in accordance with Metropolitan's Administrative Code Section 3300.

Section 3. a. Metropolitan shall be under no obligation to provide, construct, operate, or maintain feeder pipelines, structures, connections, and other facilities required for the delivery of water to said area from works owned and operated by Metropolitan Calleguas shall not be entitled to demand that Metropolitan deliver water to Calleguas for use, directly or indirectly, within said area, except for domestic or municipal use therein.

b. The delivery of all water by Metropolitan, regardless of the nature and time of use of such water shall be subject to the water service regulations, including rates and charges promulgated from time to time by Metropolitan.

c. The delivery of all water by Metropolitan, regardless of the nature and time of use of such water shall be subject to the water service regulations, including rates and charges promulgated from time to time by Metropolitan.

d. Except upon the terms and conditions specifically approved by the Board of Directors of Metropolitan, water sold and delivered by Metropolitan shall not be used in any manner which intentionally or avoidably results in the direct or indirect benefit of areas outside Metropolitan, including use of such water outside Metropolitan or use thereof within Metropolitan in substitution for other water outside Metropolitan.

Section 4. LAFCO has conditioned approval of Calleguas Annexation No. 106 upon a requirement that Metropolitan levy or fix and collect all previously established and collected taxes, benefit assessments, or property-related fees or charges on parcels being annexed to the agency.

Section 5. Such charges, which are subject to change over time, include but are not limited to:

a. Metropolitan's ad valorem tax on properties located within the territory of Calleguas in the amount of 0.0035 percent of the assessed value of each parcel. Metropolitan shall levy the ad valorem tax in the amount, at the same time and in the same manner as ad valorem tax on other properties located within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9301, adopted by Metropolitan's Board on April 12, 2022.

b. Metropolitan's water standby charge on properties located within the territory of Calleguas in the amount, at the same time and in the same manner as the ad valorem tax on other properties located within the territory of Calleguas. Such charges for fiscal year 2022/23 are described in Resolution 9307, adopted by Metropolitan's Board on May 10, 2022.

Section 6. That the General Manager is hereby authorized and directed to take all necessary action to secure the collection of the ad valorem taxes and water standby charges by the appropriate county officials, including payment of the reasonable cost of collection.

Section 7. That the Board of Directors of Metropolitan, acting as Responsible Agency, reviewed and considered the information in the NOE prior to approval of the final terms and conditions for the Annexation No. 106; and subject to the following terms and conditions, does hereby grant the application of the governing body of Calleguas for consent to annex the Calleguas Annexation No. 106 to Metropolitan and does hereby fix the terms and conditions of such annexation.

Section 8. That the General Manager and General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this resolution, including, without limitation, the commencement of defense of litigation.

Section 9. That if any provision of this resolution or the application to any member agency, property or person whatsoever is held invalid, that invalidity shall not affect the other provisions or applications of this resolution which can be given effect without the invalid portion or application, and to that end the provisions of this resolution are severable.

BE IT FURTHER RESOLVED that the Board Executive Secretary is directed to transmit forthwith to the governing body of Calleguas a certified copy of this resolution.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a resolution adopted by the Board of Directors of The Metropolitan Water District of Southern California, at its meeting held on June 14, 2022.

_____

Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: Ventura

From: (Public Agency) Calleguas Municipal Water District
2100 Olsen Road
Thousand Oaks, CA 91360
(Address)

Project Title: exation 106 - Cypress Place at Garden City/Garden City Acres Park

Project Applicant: Calleguas MWD Ann Calleguas Municipal Water District

Project Location - Specific:

5536 and 5482 Cypress Road (Cypress Place at Garden City) and 5302 Cypress Road (Garden City Acres Park)

Project Location - City: Oxnard Project Location - County: Ventura

Description of Nature, Purpose and Beneficiaries of Project:

Annexation to Calleguas Municipal Water District and Metropolitan Water District of Southern California to allow municipal water service to the proposed Cypress Place at Garden City by the City of Oxnard and to legalize existing water service at the Garden City Acres Park.

Name of Public Agency Approving Project: Calleguas Municipal Water District

Name of Person or Agency Carrying Out Project: Calleguas Municipal Water District

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Class 1 (Existing Facilities) and Class 19 (Annexations of Existing Facilities)
- ☒ Statutory Exemptions. State code number: Senate Bill 35 and Government Code Section 65913.4

Reasons why project is exempt:

Cypress Place at Garden City is a proposed 100% affordable housing development. The City of Oxnard found the proposed project meets the requirements of Senate Bill 35 and Government Code Section 65913 4 as a Streamlined Infill Project, and is therefore statutorily exempt from CEQA.

Garden City Acres Park is an existing facility and annexation would not result in any new or expanded use. Applicable CEQA Guidelines are Sections 15301 (Existing Facilities) and 15319 (Annexations of Existing Facilities).

Lead Agency Contact Person: Jennifer Lancaster Area Code/Telephone/Extension: (805) 579-7194

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: ▪ Signed by Lead Agency Signed by Applicant Date: 1/24/2022 Title: Principal Resource Specialist

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR:

FILED
DATE: FEB 08 2022
MARK A. LUNN
Ventura County Clerk and Recorder
By: Elizabeth A, Deputy

POSTED
FEB 08 2022 MAY 02 2022
MARK A. LUNN
Ventura County Clerk and Recorder
By: Elizabeth A, Deputy

Revised 2011

State of California - Department of Fish and Wildlife

2022 ENVIRONMENTAL DOCUMENT FILING FEE CASH RECEIPT

DFW 753.5a (REV. 01/01/22) Previously DFG 753.5a

Print StartOver Save

RECEIPT NUMBER: 56 — 01/24/2022 —

STATE CLEARINGHOUSE NUMBER *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
Calleguas Municipal Water District	jlancaster@calleguas.com	01/24/2022

COUNTY/STATE AGENCY OF FILING: Ventura

DOCUMENT NUMBER:

PROJECT TITLE

Calleguas MWD Annexation 106 - Cypress Place at Garden City/Garden City Acres Park

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL	PHONE NUMBER
Calleguas Municipal Water District	JLancaster@Calleguas.com	(805) 579-7194

PROJECT APPLICANT ADDRESS	CITY	STATE	ZIP CODE
2100 Olsen Road	Thousand Oaks	CA	91360

PROJECT APPLICANT *(Check appropriate box)*

☐ Local Public Agency ☐ School District ☑ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,539.25	$ 0.00
☐ Mitigated/Negative Declaration (MND)(ND)	$2,548.00	$ 0.00
☐ Certified Regulatory Program (CRP) document - payment due directly to CDFW	$1,203.25	$ 0.00

☑ Exempt from fee

- ☑ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$ 0.00
☑ County documentary handling fee		$ 50.00
☐ Other		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☑ Check ☐ Other **TOTAL RECEIVED** $ 50.00

SIGNATURE

X Jennifer Lancaster

Digitally signed by Jennifer Lancaster
Date: 2022.02.02 13:55:24 -08'00'

AGENCY OF FILING PRINTED NAME AND TITLE

Jennifer Lancaster - Principal Resource Specialist

Filed in County Clerk's Office
Mark A. Lunn
Ventura County Clerk-Recorder

202100001899

02/08/2022
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DocType: FISH
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Pages: 1
Fees: $50.00

ORIGINAL - PROJECT APPLICANT COPY - CDFW/ASB

DFW 753.5a (Rev. 01012022)

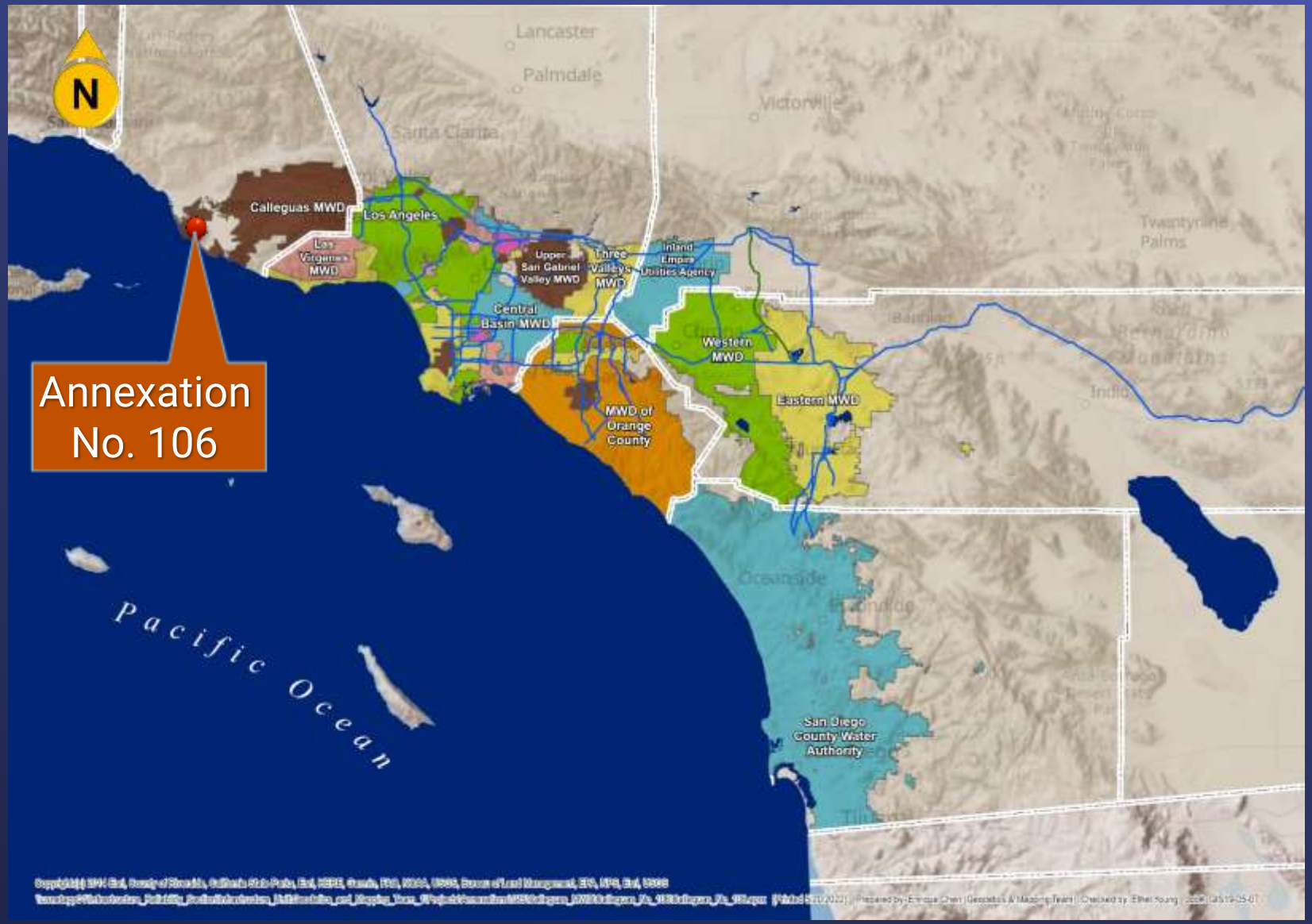
Real Property and Asset Management Committee

Adopt Resolution for Calleguas Annexation No. 106

Item 7-13

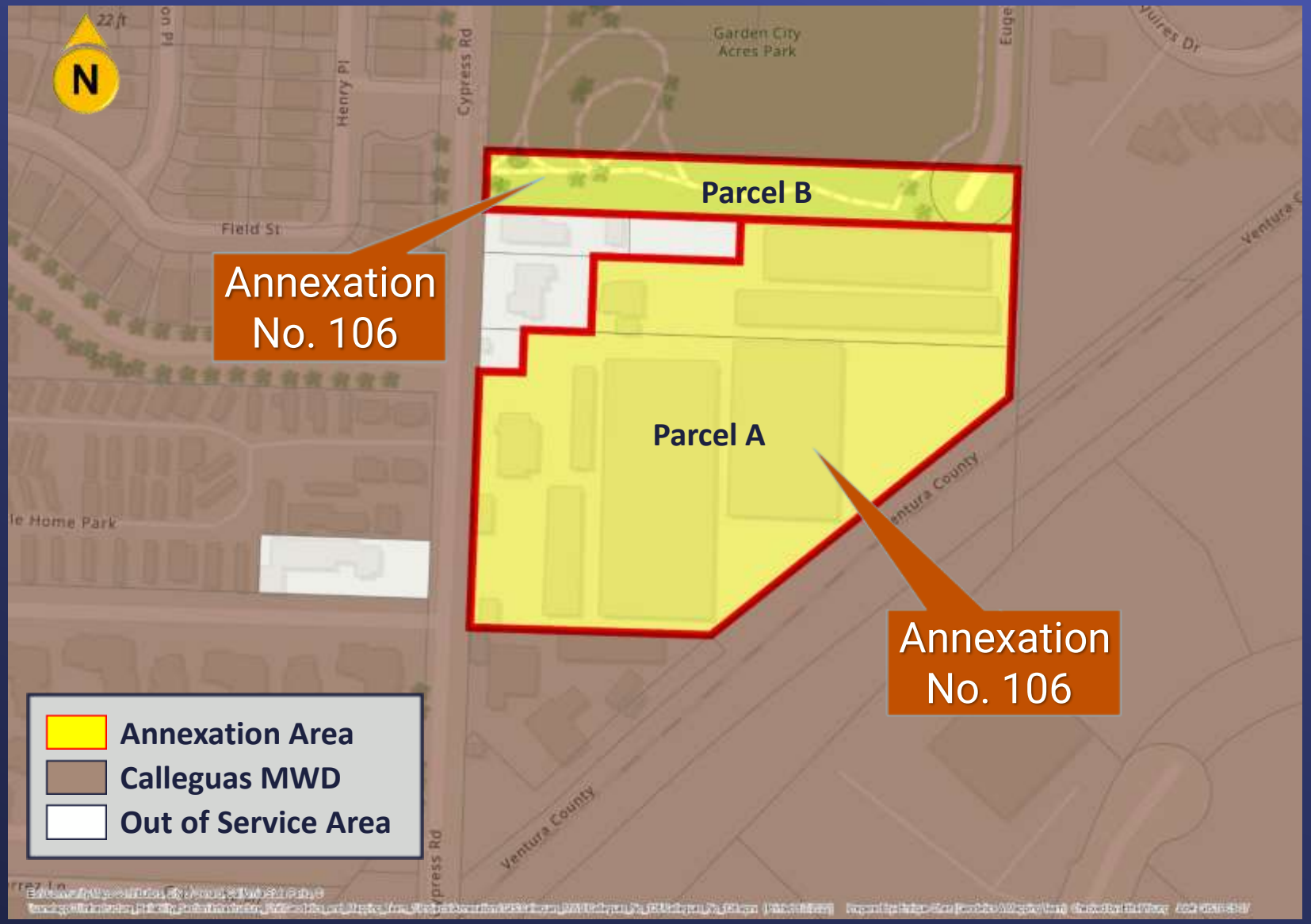
June 13, 2022

Service Area Map



Annexation Site Map

Gross Area = 6.30 Acres



Key Provisions

- Annexation area is 6.30 acres
- Total fees are $46,618.11
- Water use estimate is 21.69 – 26.01 AF/Y
- Annexation request is compliant with current policy and requirements

Board Options

Option 1:

- Adopt resolution for Calleguas Annexation No. 106 to Calleguas Municipal Water District and Metropolitan; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Option 2:

- Decline the Request

Board Options

Staff Recommendations

- Option 1


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA

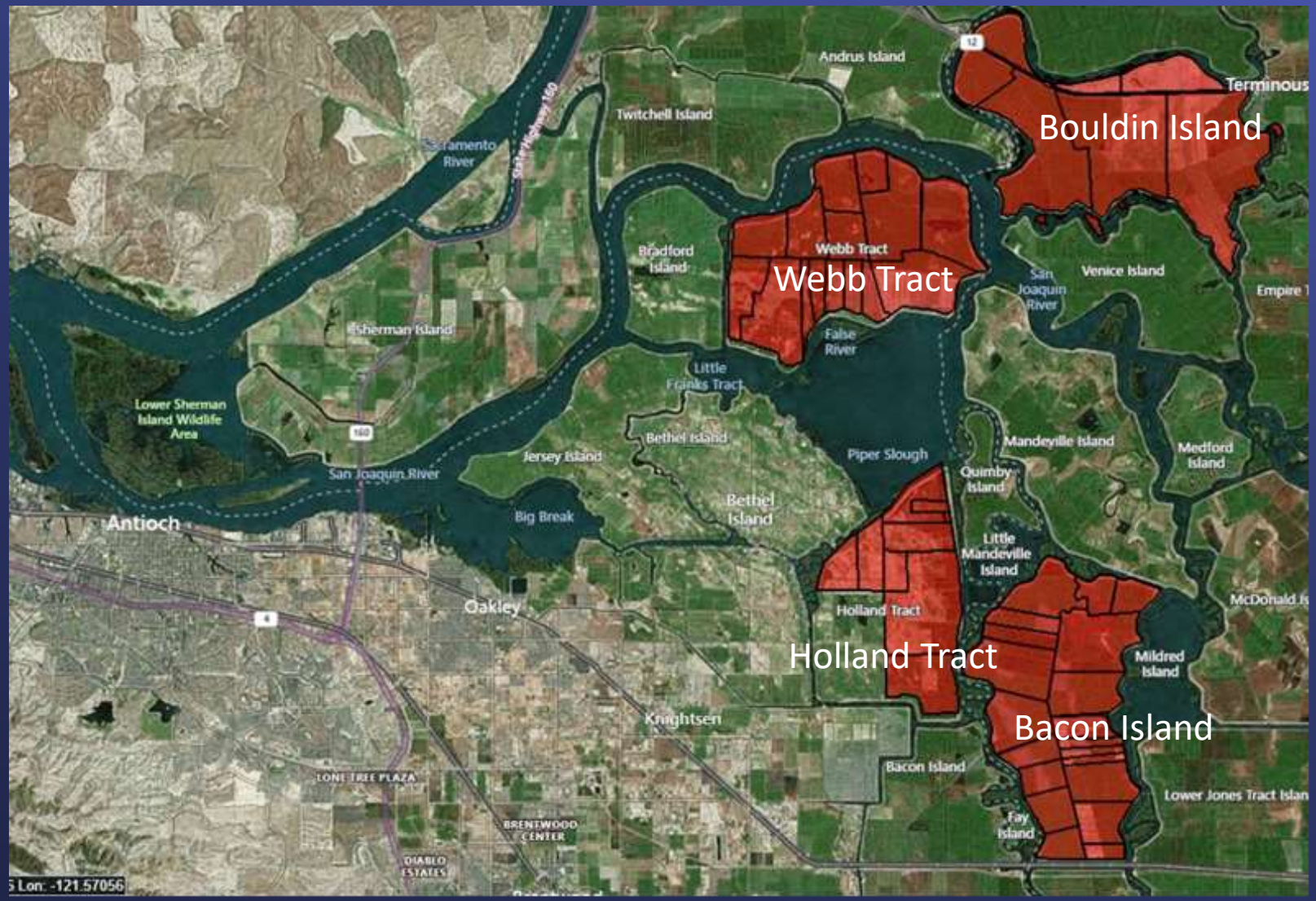
Real Property & Asset Management

Group Manager's Report

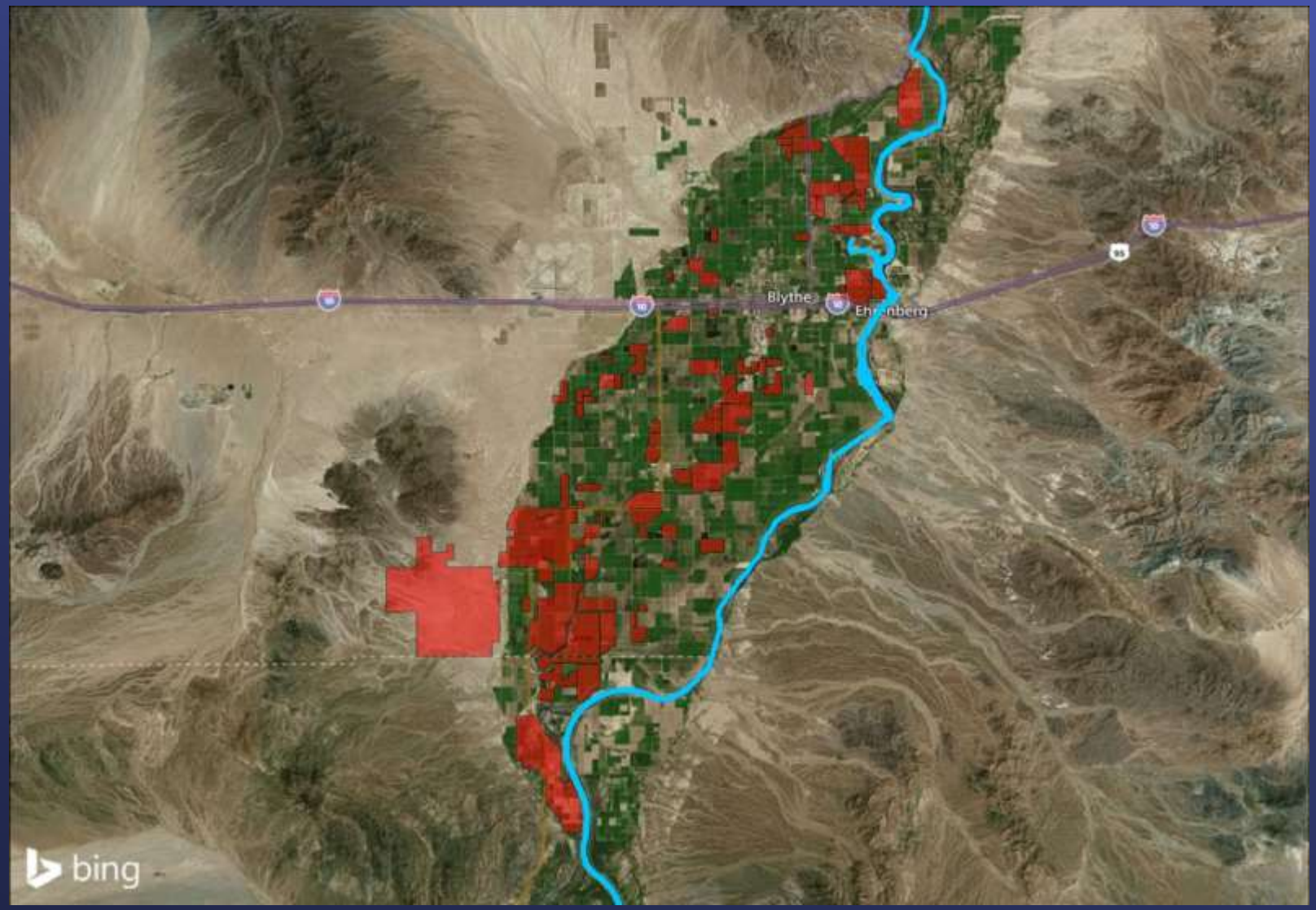
Item 7a

June 13, 2022

Delta Islands



Palo Verde Properties



MWD Regenerative Agriculture Study

Chiller at Eagle Mountain Village


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA