



- **Board of Directors**
Engineering, Operations, and Technology Committee

8/20/2024 Board Meeting

7-4

Subject

Adopt the Mitigated Negative Declaration for the Inland Feeder-Foothill Pump Station Intertie Project and take related CEQA actions; adopt a resolution to accept \$5 million in funding from U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects grant for Fiscal Year 2024 to support the Inland Feeder/San Bernardino Valley Municipal Water District Foothill Pump Station Intertie project; and authorize the General Manager to accept grant funds, if awarded; designate Metropolitan's Group Manager of Engineering Services to be the signatory to execute actions for reimbursement by U.S. Bureau of Reclamation

Executive Summary

The Foothill Pump Station Intertie project is one of four projects currently underway to provide the ability to directly deliver water from Diamond Valley Lake (DVL) to the Rialto Pipeline and improve water supply reliability for this State Water Project-dependent area. This action adopts a resolution supporting a \$5 million grant application to the U.S. Bureau of Reclamation (USBR) for the WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024, authorizes the General Manager to accept funding of up to \$5 million to be used for the project, and designates the Group Manager of Engineering Services (Group Manager) to be the signatory with USBR to execute actions related to the funds. See **Attachment 1** for the Board Resolution.

In accordance with the California Environmental Quality Act (CEQA), this action also proposes the adoption of a Mitigated Negative Declaration (MND) for the Inland Feeder/San Bernardino Valley Municipal Water District (SBVMWD) Foothill Pump Station Intertie Project. See **Attachment 2** for the Initial Study and MND.

Attachment 3 includes comment letters received during the public review period and Metropolitan's responses to those comments, and **Attachment 4** includes the Mitigation Monitoring and Reporting Program.

Proposed Action(s)/Recommendation(s) and Options

Staff Recommendation: Option #1

Option #1

- Adopt the Mitigated Negative Declaration for the Inland Feeder-Foothill Pump Station Intertie Project and take related CEQA actions.
- Adopt a resolution to accept \$5 million in funding from the U.S. Bureau of Reclamation to support the Inland Feeder/San Bernardino Valley Municipal Water District Foothill Pump Station Intertie Project.
- Designate the Group Manager of Engineering Services to be the signatory to execute actions related to the funds.
- Appropriate \$5 million in funding from the U.S. Bureau of Reclamation for use on the Inland Feeder/San Bernardino Valley Municipal Water District Foothill Pump Station Intertie Project.

Fiscal Impact: Savings of approximately \$5 million in Metropolitan Capital Investment Plan (CIP) funds or allows additional CIP projects to proceed in the current biennium as a result of applying grant funds toward the project.

Business Analysis: This option will improve the operational reliability of water deliveries to member agencies with connections to the Rialto Pipeline. Adoption of the MND allows Metropolitan to move forward with obtaining additional project clearances and approvals.

Option #2

Do not proceed with adoption of the MND and the use of grant funds at this time.

Fiscal Impact: None

Business Analysis: Without adoption of the MND, Metropolitan would not be able to move forward with obtaining additional project clearances and approvals. This option would also forego the opportunity to receive external funding for the project.

Alternatives Considered

Not applicable

Applicable Policy

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 11100: Environmental Matters

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

Related Board Action(s)/Future Action(s)

By Minute Item 52581, dated November 9, 2021, the Board adopted a resolution declaring a Regional Drought Emergency.

By Minute Item 52626, dated December 14, 2021, the Board authorized amending the current CIP to include projects to improve water supply reliability in the Rialto Pipeline service area.

By Minute Item 52937, dated August 16, 2022, the Board authorized an agreement with HDR Engineering, Inc. for a not-to-exceed amount of \$1,300,000 for final design of the Inland Feeder/Foothill Pump Station Intertie.

By Minute Item 53252, dated May 9, 2023, the Board awarded a \$2,601,437 procurement contract to Sojitz Machinery Corporation of America to furnish two large diameter butterfly valves for the Inland Feeder/SBVMWD Foothill Pump Station Intertie project.

By Minute Item 53565, dated March 12, 2024, the Board awarded a procurement contract for a 132-inch diameter butterfly valve to be installed at the Foothill Pump Station.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Acting as the Lead Agency, Metropolitan conducted an Initial Study for the proposed action. The Initial Study indicated that, with the incorporation of appropriate mitigation measures, the proposed action would not have a significant impact on the environment. Accordingly, Metropolitan prepared an MND, which together with the Initial Study, was circulated for a 30-day public review period beginning on May 20, 2024. Metropolitan also prepared a program for reporting on and monitoring the changes that are required to mitigate or avoid significant environmental effects (MMRP).

Attachment 2 includes the Initial Study and MND. **Attachment 3** contains comment letters received during the public review period and Metropolitan's responses to those comments, and **Attachment 4** contains the MMRP. These documents, as well as any other materials that constitute the record of proceedings upon which the Lead Agency decision is based, are on file at Metropolitan's headquarters located at 700 North Alameda Street, Los Angeles, CA 90012.

The Board has reviewed and considered all the materials described above. Based on the whole record before it, the Board finds that there is no substantial evidence that the proposed action will have a significant impact on the

environment, and that the MND reflects the Lead Agency's independent judgment and analysis. Therefore, the Board adopts the MND and MMRP for the proposed action. (State CEQA Guidelines Sections 15070-15075.)

CEQA determination for Option #2:

None required

Details and Background

Background

The Rialto Pipeline, constructed in 1972, is approximately 30 miles long with a diameter ranging from 96 to 144 inches. It conveys untreated water from California Department of Water Resources' (DWR's) Lake Silverwood to Metropolitan's Live Oak Reservoir in La Verne. Under normal conditions, the Rialto Pipeline relies on raw water deliveries from the East Branch of the State Water Project (SWP) via DWR's Devil Canyon Afterbay. Member agencies with Rialto Pipeline service connections include the Inland Empire Utilities Agency, Three Valleys Municipal Water District, and the Upper San Gabriel Valley Municipal Water District.

The Board authorized the Rialto Pipeline water supply reliability improvements in December 2021. It consists of four separate projects: Wadsworth Pumping Plant Bypass Pipeline, Inland Feeder/Rialto Pipeline Intertie, Inland Feeder – Badlands Tunnel Surge Protection, and Inland Feeder/SBVMWD Foothill Pump Station Intertie. These incremental infrastructure improvements will greatly increase operational flexibility and enhance the ability to move water from DVL, and potentially the Colorado River Aqueduct, into the Rialto Pipeline. Completion of these projects will significantly reduce the dependency of member agencies on SWP supplies.

The Inland Feeder/SBVMWD Foothill Pump Station Intertie is an important component of this four-project effort. Without this project, the Rialto Pipeline water supply reliability benefits would be limited to a series of low-volume water exchanges between Metropolitan and SBVMWD. The Foothill Pump Station is in the City of Highland and is connected to SBVMWD's Foothill Pipeline, which usually delivers water for groundwater recharge during high SWP supplies and is therefore available in times of drought. This pump station will provide the lift needed to permit the direct delivery of approximately 107 cubic feet per second from DVL to the Rialto Pipeline. Final design of the Inland Feeder/SBVMWD Foothill Pump Station Intertie is currently underway.

In November 2023, Metropolitan submitted a grant application to USBR requesting \$5 million to support the Inland Feeder/SBVMWD Foothill Pump Station project as part of water supply reliability improvements in the Rialto Pipeline service area. USBR offers funding through its WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024 to water districts in the Western United States to increase water supply reliability through investments in existing infrastructure and increased water management flexibility. The USBR Program funds up to \$5 million per project for projects that can be completed within three years and requires a 50 percent cost-share. If the grant award is \$5 million, Metropolitan would provide at least a 50 percent cost-share (\$5 million). The source of the cost-share funds are budgeted CIP funds that are planned to be expended on the project and will fulfill Metropolitan's grant matching funds requirement. The total cost of this project is estimated to be \$34 million.

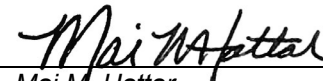
The grant process requires the Board adopt a resolution (**Attachment 1**) that authorizes or delegates legal authority to enter into the grant agreement; recognizes that the board of directors, governing body, or appropriate official has reviewed and supports the application submitted; and that Metropolitan will work with USBR to meet established deadlines. This action adopts a resolution supporting Metropolitan's activities to receive the \$5 million grant funding from USBR; authorizes the General Manager to accept the grant if awarded; and designates the Group Manager to be the signatory with USBR to execute actions related to the funds.

During preliminary design, an endangered species was encountered at the project site, which will necessitate certain environmental permits. Metropolitan must adopt a CEQA determination before applying for permits with regulatory agencies to perform the work. Adoption of the MND and MMRP will allow Metropolitan to initiate the permit process with the appropriate State and Federal agencies. Due to the presence of the endangered species, one of the permits requires formal consultation with the U.S. Fish and Wildlife Service (USFWS). Once submitted, USFWS does not have established deadlines for responding to the permit application. A similar permit for work associated with another endangered species requires several years to obtain. Fortunately, in addition to

deferring project costs, acceptance of the USBR grant also creates an opportunity to reduce the time needed for permitting. The USBR grant creates a nexus with a federal agency, which triggers certain statutory deadlines for the consultation with USFWS. With USBR as a federal partner, permitting for the project is expected to be reduced to approximately one year.

Project Milestone

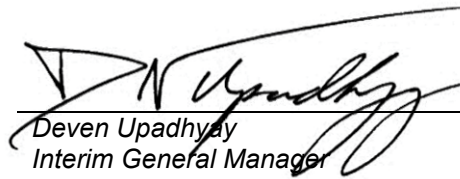
June 2025 – Board action to award construction contract for the Inland Feeder/SBVMWD Foothill Pump Station Intertie



Mai M. Hattar
Interim Manager/Chief Engineer
Engineering Services

7/24/2024

Date



Deven Upadhyay
Interim General Manager

7/30/2024

Date

Attachment 1 – Board Resolution

Attachment 2 – Initial Study and Mitigated Negative Declaration

Attachment 3 – Responses to Comments Received

Attachment 4 – Mitigation Monitoring and Reporting Program

Ref# es12703902

Resolution for WaterSMART Drought Response GRANT**RESOLUTION NO. ____****A RESOLUTION OF THE BOARD OF DIRECTORS OF THE METROPOLITAN
WATER DISTRICT OF SOUTHERN CALIFORNIA ENDORSING WATERSMART
DROUGHT RESPONSE PROGRAM:
DROUGHT RESILIENCY PROJECTS FOR FISCAL YEAR 2024**

WHEREAS, the United States Bureau of Reclamation is currently offering grant opportunities through the WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024; and

WHEREAS, the WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024 is a cost-shared program emphasizing drought resiliency; and

WHEREAS, on November 7, 2023, The Metropolitan Water District of Southern California submitted a grant application for the Foothill Pump Station Intertie project, to the WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024; and

WHEREAS, The Metropolitan Water District of Southern California can provide the amount of matching funds of up to \$5,000,000 in cash and/or in-kind contributions specified in the grant application's funding plan; and

WHEREAS, if selected for a WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024, The Metropolitan Water District of Southern California will work with the United States Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement or grant.

**NOW, THEREFORE, THE METROPOLITAN WATER DISTRICT OF SOUTHERN
CALIFORNIA BOARD OF DIRECTORS DOES HEREBY RESOLVE, ORDER AND
DETERMINE AS FOLLOWS:**

Section 1: In the event grant funding is provided by the United States Bureau of Reclamation, the Board authorizes the General Manager of Metropolitan to accept the grant and that the Group Manager of the Engineering Services Group to be designated signatory to execute, authorize, and approve actions related to the fund, and delegate the Chief Financial Officer or his designee to act as a fiscal agent for any grant funding received.

Section 2: This resolution shall take effect immediately.

Section 3: The Secretary shall certify to the adoption of this resolution and henceforth and thereafter the same shall be in full force and effect.

PASSED AND ADOPTED this 20th day of August 2024.

Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Initial Study/Mitigated Negative Declaration

The Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012



Report Number ER 1694

May 2024

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- E. Paleontological Resources Assessment Report
- F. Noise Calculations and Modeling

INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Initial Study/Mitigated Negative Declaration

1.0 Project Description

1.1 Background

The Metropolitan Water District of Southern California (Metropolitan) is a regional water wholesaler that provides water for 26 public agency members that, in turn, provide water to approximately 19 million people in parts of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. The mission of Metropolitan is to provide its service area with an adequate and reliable supply of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan imports water from the State Water Project (SWP) and from the Colorado River via the Colorado River Aqueduct (CRA). Approximately 45 percent of Southern California's water supply comes from these two sources. In addition to imported water, Metropolitan invests in local resource development along with its member agencies and uses groundwater banking and transfer programs. Metropolitan also manages water demands by promoting and investing in conservation and water use efficiency projects. Water supplies are conveyed through Metropolitan's distribution system, which includes the CRA, 16 small hydroelectric facilities, nine reservoirs, 819 miles of large-scale pipes, and five water treatment plants. On average, Metropolitan conveys approximately 1.7 billion gallons of water daily throughout its distribution system.

The Inland Feeder is owned and operated by Metropolitan, and was constructed between 1997 and 2009. The pipeline is 44 miles long and 12 feet in diameter. The primary purpose of the Inland Feeder is to connect SWP supplies to Metropolitan's Eastern Distribution System. The pipeline begins at the Department of Water Resources' (DWR's) Devil Canyon Afterbay in the city of San Bernardino and terminates at Metropolitan's Diamond Valley Lake (DVL) near the city of Hemet.

In the years since the Inland Feeder was constructed, several drought emergencies have been declared in California. Former Governor Edmund G. Brown Jr. had proclaimed a drought state of emergency from April 2014 to April 2017, and Governor Gavin Newsom declared a drought state of emergency from October 2021 to March 2023. While California is not operating under a declared drought emergency at present, the western region of the United States continues to be in a drought. In response to these drought events, Metropolitan has been developing methods to improve distribution system flexibility to operate more efficiently in both wet years and under the more frequently occurring drought conditions.

1.2 Purpose and Need

Metropolitan is proposing to construct an intertie connection between the Inland Feeder and the Foothill Pump Station (proposed Project). The purpose of the proposed Project would be to enhance Metropolitan's water delivery flexibility in response to drought conditions and limited SWP allocations. The proposed Project would allow Metropolitan to pump and deliver water from DVL to the Rialto service area, which is currently only able to receive SWP water. An intertie connection is needed with the San Bernardino Valley Municipal Water District's (SBVMWD) Foothill Pump Station to provide hydraulic lift to allow water delivery from DVL into DWR's Devil's Canyon Afterbay and ultimately Metropolitan's Rialto Pipeline.

1.3 Project Location and Land Use

The proposed Project is located on an approximately 10-acre triangular-shaped parcel, immediately south of the intersection of Cone Camp Road and Greenspot Road in Highland, California (Assessor Parcel Nos. 121038124, 121038125, and 029115102; proposed Project Area). The proposed Project Area spans 6.615 acres of the 10-acre parcel and is bounded by Greenspot Road and residential development to the north, a dirt road and open space to the south, and large-lot single-family residences and open space to the east and west. The site is generally accessible from State Route 210 (Foothill Freeway), located roughly 3.5 miles to the west. Local access to the proposed Project Area is provided by Cone Camp Road, with entrance gates immediately north and south of the Foothill Pump Station. Two of the three parcels within the proposed Project Area are designated as Planned Development on the City of Highland Land Use Map (2022) and are zoned for Planned Development/Single Family Residential (PD/R-1) use. The third and southernmost parcel is designated as Open Space and zoned as Open Space (OS). Figure 1-1 shows the proposed Project Area in a regional context, and Figure 1-2 shows the location of existing and proposed Project facilities.

1.4 Project Description

The proposed Project consists of the installation of two new pipeline connections, referred to as the supply pipeline and discharge pipeline, between the Inland Feeder and the SBVMWD-Inland Feeder Interconnection Line 1 and Foothill Pump Station. Both new pipelines would have their own valves, valve vault structures, and hydropneumatic surge tanks (surge tanks). A total of four surge tanks would be constructed. A large vault structure with a valve would be installed on the Inland Feeder to control direction of water flow along the Inland Feeder. The supply pipeline would send water from the Inland Feeder to the Foothill Pump Station for pumping. The discharge pipeline would send the pumped water back into the Inland Feeder, allowing it to have enough pressure to flow to its final destination of the Rialto Pipeline.

The majority of the proposed Project components would be constructed underground. This includes both the supply and discharge pipelines, the vault structures, and appurtenant components in the vaults. The four surge tanks would be constructed aboveground on concrete pads, as well as the components connecting the surge tanks to the supply and discharge pipelines. Vault structures would have a small aboveground component consisting of access lids to the vaults (Figure 1-2).

The proposed Project is described in greater detail in the following sections.



Inland Feeder - Foothill Pump Station Intertie Project

Figure 1-1
Project Location



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 1-2
Proposed Project Components

1.4.1 Pipelines

The proposed Project would include construction of two pipelines. An approximately 500-foot-long, 54-inch supply pipeline would connect the Inland Feeder with the SBVMWD-Inland Feeder Interconnection Line 1. An approximately 50-foot-wide and 25-foot-deep trench would be required to install the supply connection pipeline. Once constructed, the supply connection pipeline would be entirely underground.

The proposed Project would also construct a 1,000-foot-long, 54-inch discharge pipeline from the Foothill Pump Station, connecting back to the Inland Feeder. A 50-foot-wide by 25-foot-deep trench would be required to install the discharge pipeline. If feasible, a 224-foot portion of the discharge pipeline may be contained within the same trench as the supply pipeline in order to reduce excavation activities. Once constructed, the discharge pipeline would be entirely underground.

1.4.2 Vault structures, valves, and connections

Sectionalizing Valve and Vault

The proposed Project would construct an approximately 45-foot by 40-foot sectionalizing vault structure on the Inland Feeder. The sectionalizing vault structure would be underground, with an estimated excavation depth of 38 feet in order to connect with the buried Inland Feeder. The sectionalizing vault structure would house a 132-inch butterfly valve within the vault structure to connect with the Inland Feeder in order to control flow to the supply and discharge pipelines. Once constructed, the vault structure would be entirely underground.

Combined Valves and Vault

The proposed Project would construct an approximately 50-foot by 40-foot combined valve vault structure for valves needed to control the supply and discharge pipelines. The combined valve vault structure would be underground, with an estimated excavation depth of 29 feet. The combined valve vault structure would require installation of two, 54-inch butterfly valves within the vault. Once constructed, the vault structure would be entirely underground.

Connections

A “T” connection on the existing SBVMWD-Inland Feeder Interconnection Line 1 would be installed to connect the proposed supply pipeline with the existing SBVMWD-Inland Feeder Interconnection Line 1. This connection would occur approximately 50 feet south of the proposed combined valve vault structure and would be underground.

A “Y” connection fitting to the existing Foothill Pump Station piping would be installed to connect the supply pipeline to the Foothill Pump Station. The “Y” connection would be located west of the Foothill Pump Station and would be underground.

1.4.3 Surge Tanks

The proposed Project would include the installation of one, 30,000-gallon surge tank and three 50,000-gallon surge tanks on concrete pads. The concrete pads would be approximately 22 feet by 45 feet and would require excavation to a depth of approximately 10 feet for the tank pad footings. The 30,000-gallon surge tank would be approximately 11 feet wide by 40 feet in length by 16.5 feet in height. The three

50,000-gallon surge tanks would be approximately 14 feet wide by 57 feet in length by 19 feet in height. An air compressor located on the tank pads would be required to stabilize the pressure within the tanks, and an 18-foot-deep trench would be excavated to connect the surge tanks to the supply and discharge pipelines. The four surge tanks would be located aboveground, along with small portions of connection piping to the supply and discharge pipelines.

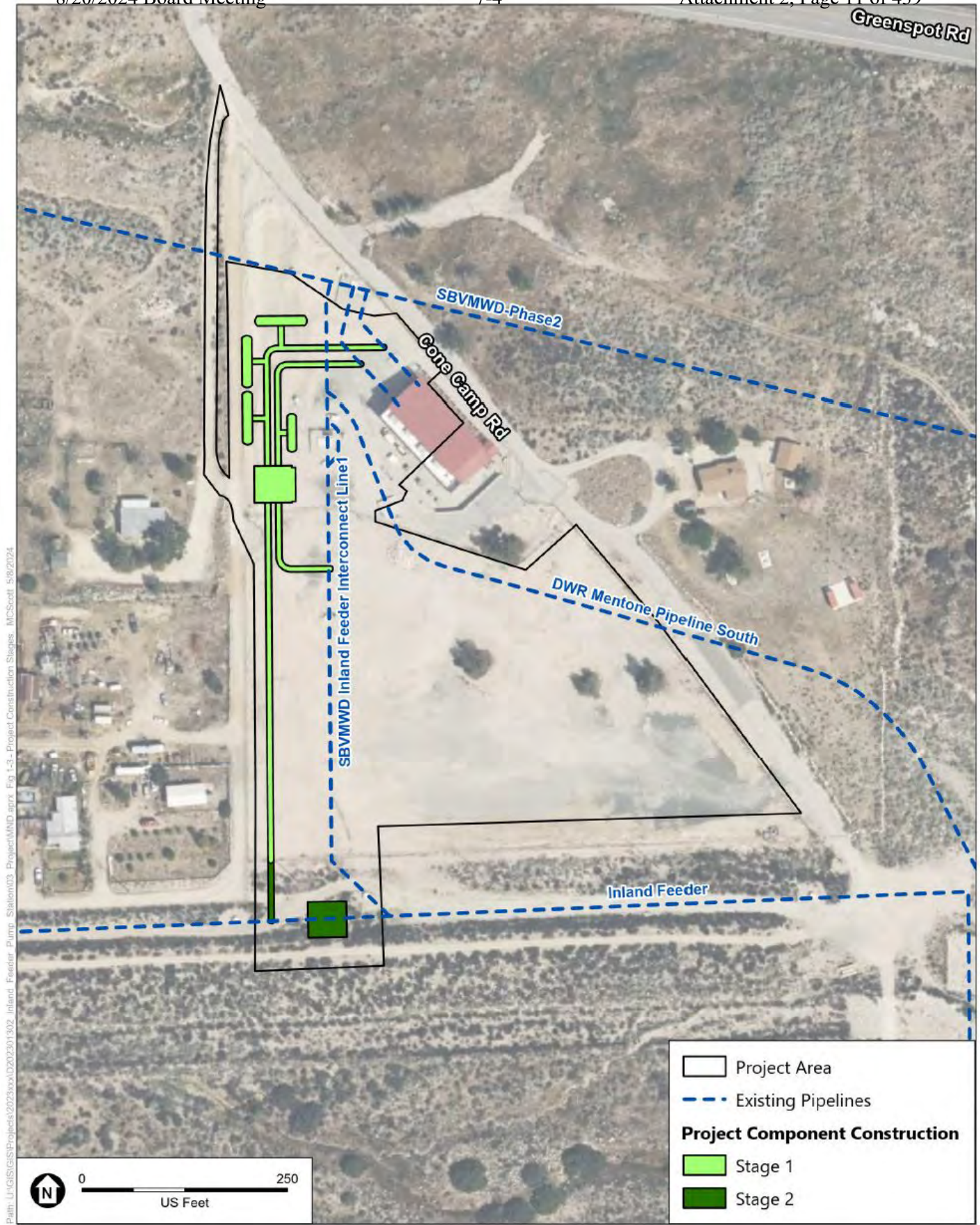
1.5 Project Construction

1.5.1 Schedule

The proposed Project construction would be performed in two construction stages and would take approximately 12 months to complete, occurring over a 31-month period, with a break in between the two stages. Stage 1 would occur from approximately January 2025 through November 2025; Stage 2 would occur between approximately fall 2026 through July 2027 (see Table 1-1). The work would be staged in order to accommodate the timeline for obtaining permits associated with construction of the Stage 2 components outside of the fenced Foothill Pump Station facility (refer to Table 1-3, Figure 1-3, and Section 3.4, *Biological Resources*).

**TABLE 1-1
CONSTRUCTION SCHEDULE**

Construction Stages	Construction Start Month	Construction Duration (Months)
Stage 1		
Supply Connection Components		
Pipeline Trenching and Installation	January 2025	1
Vault Structure Excavation	February 2025	1
Vault Structure Installation	March 2025	1
Surge Tank Excavation	April 2025	1
Surge Tank Installation	May 2025	2
Discharge Connection Components		
Pipeline Trenching and Installation	July 2025	1
Surge Tank Excavation	October 2025	1
Surge Tank Installation	November 2025	2
Stage 2		
Discharge Connection Components		
Vault Structure Excavation	October 2026	1
Vault Structure Installation	November 2026	1



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 1-3
Proposed Project Construction Stages

Stage 1 construction activities would take place within the fenced Foothill Pump Station facility. Stage 1 would involve construction and installation of the supply pipeline, surge tanks, combined valve vault structure, pipeline connections, and approximately 900 feet of the discharge pipeline, from the Foothill Pump Station to the southern fence line of the Foothill Pump Station facility. Stage 2 construction activities would occur at the southern portion of the Foothill Pump Station facility, south of the existing property fence. Stage 2 construction activities would involve installation of the sectionalizing valve vault structure, the excavation and installation of the remaining 100 feet of the discharge pipeline, and construction and installation for the 132-inch butterfly valve on the Inland Feeder. The proposed Project components are shown in Figure 1-2.

Construction activities would typically occur Monday through Friday, although work may be conducted on Saturdays as needed with the approval of Metropolitan staff. While most of the construction would occur during daytime hours (between 7 a.m. and 4 p.m.), occasional nighttime construction activities may be required to shut down the Inland Feeder and install the tie-in connection.

1.5.2 Construction Staging and Access

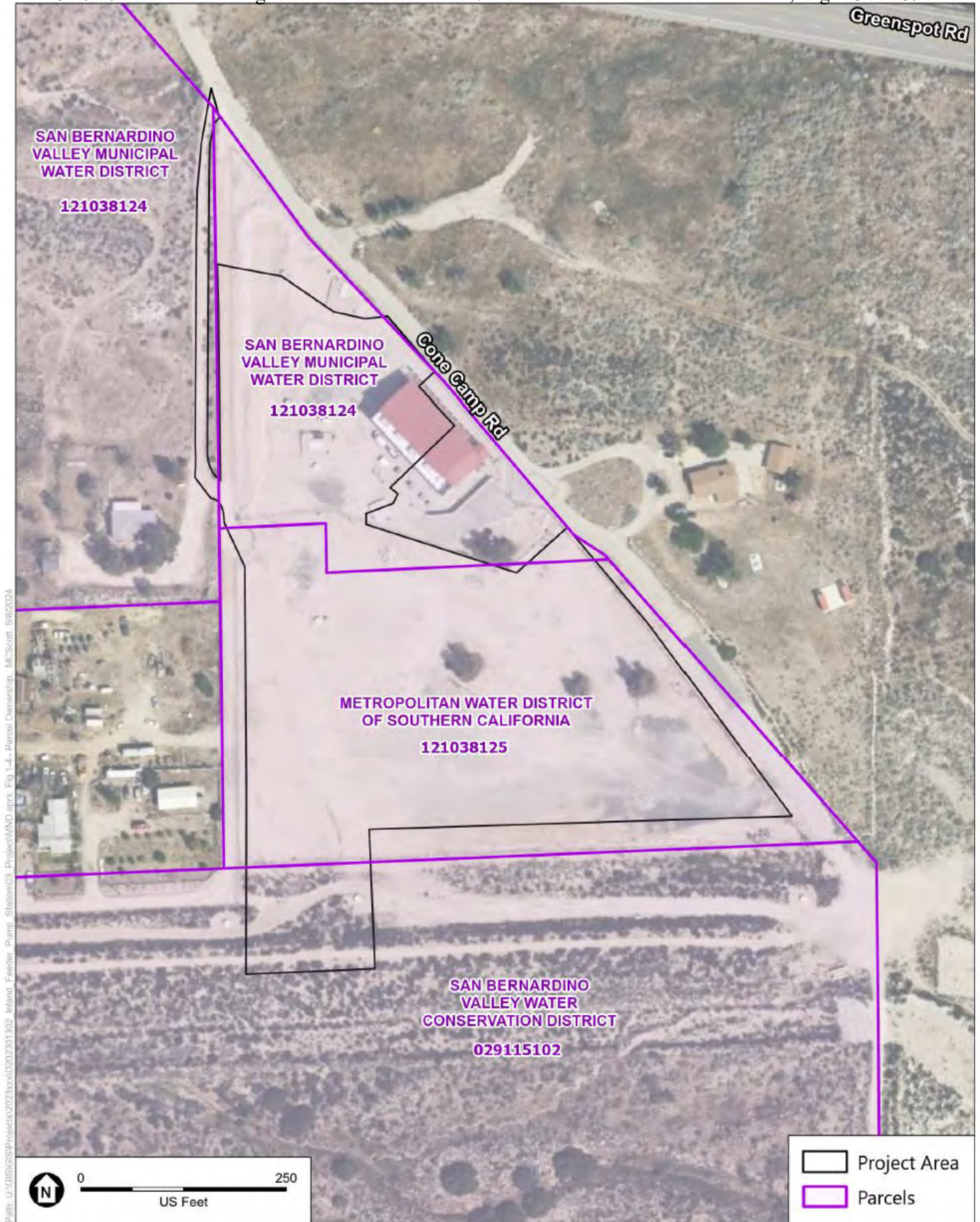
Metropolitan owns 5.47 acres of the proposed Project Area (Figure 1-4) in fee and has easement rights to approximately one acre of the proposed Project Area. The remainder of the proposed Project Area is owned by the SBVMWD and the San Bernardino Valley Water Conservation District (SBVWCD). SBVWCD also owns the parcel located directly south of Metropolitan's triangular-shaped fee property. Metropolitan would obtain additional easement for the SBVWCD property located between Metropolitan's Inland Feeder alignment and its fee property.

Access to the Foothill Pump Station facility site would be from Cone Camp Road through the access gate located north of the pump station, while access to the Inland Feeder would be through Metropolitan's gate and access road located south end of the proposed Project Area. Temporary construction access is required on SBVMWD's and SBVWCD's properties to construct the connection between the Foothill Pump Station and the Inland Feeder.

Construction staging and storage would occur on the open dirt and gravel space within Metropolitan's fee property in the proposed Project Area. Construction worker parking would primarily occur within the Inland Feeder – Foothill Pump Station facility. If there are space limitations at the site, the proposed Project Contractor(s) would carpool workers to and from the proposed Project Area.

1.5.3 Construction Activities

Construction activities would include approximately 1,086 trucks for 2,172 trips (accounting for approximately 8,680 cubic yards [cy] of soil/material export and 6,500 cy of soil/material import), with a maximum of 44 trucks per day for soil/material import/export. The proposed Project would also include concrete import requiring approximately 924 trucks for 1,848 trips, with a maximum of approximately 34 trucks per day. The proposed Project would require a total of 58 workers, with a maximum of approximately 9 workers per day. Proposed Project construction equipment are listed in Table 1-2.



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 1-4
Parcel Ownership

**TABLE 1-2
CONSTRUCTION EQUIPMENT**

Construction Equipment	Total
Air Compressors	4
Tractors/Loaders/Backhoes	12
Cement /Mortar Mixers	2
Compactors	12
Cranes	4
Excavators	6
Forklifts	2
Generator Sets	6
Graders	2
Sweepers/Scrubbers	10
Welders	4
Water/Vendor Truck	22

1.6 Operation and Maintenance

Operations and maintenance activities, including the frequency of staff visits, maintenance, and shutdowns, would be similar to existing conditions once construction activities are completed. The Inland Feeder, Foothill Pump Station, and all pipelines and structures within the proposed Project Area are unmanned. Any operations and maintenance activities to the Inland Feeder and proposed Project infrastructure would be completed by existing Metropolitan employees.

1.7 Project Approvals

Table 1-3 lists the anticipated permits and approvals which may be required for proposed Project-related activities. The table also lists the types of activities that would be subject to these requirements.

**TABLE 1-3
DISCRETIONARY PERMITS AND EASEMENTS POTENTIALLY REQUIRED**

Agency	Permits and Authorizations Required	Activities Subject to Regulations
San Bernardino Valley Water Conservation District (SBVWCD)*	Easement and Right-of-Entry Permit	Obtain permanent easement for new vault facility. Access through or use of SBVWCD property.
San Bernardino Valley Municipal Water District (SBVMWD)	Right-of-Entry Permit	Access through or use of SBVMWD property.
California Department of Fish and Wildlife	Fish and Game Code Section 2081 Incidental Take Permit	Take of California Endangered Species Act (CESA) listed species [San Bernardino Kangaroo Rat (<i>Dipodomys merriami parvus</i> ; SBKR)]
U.S. Fish and Wildlife Service	Federal Endangered Species Act (ESA) Section 7 or Section 10 Incidental Take Permit	Take of ESA listed species [SBKR, Coastal California gnatcatcher (<i>Polioptila californica californica</i> ; CAGN)]

NOTE:

* Portions of the land currently owned by SBVWCD would be subject to a land exchange with the Bureau of Land Management as described in the Final EIR/Environmental Impact Statement (EIS) and Section 10 HCP for the Upper Santa Ana River Wash Plan and as authorized by the Natural Resources Management Act (S. 47), signed into law March 2019, which included specific guidelines directing the land exchange between the BLM and the Conservation District.

2.0 Initial Study and Environmental Checklist Form

This document is a proposed Initial Study (IS)/Mitigated Negative Declaration (MND), which addresses the potential environmental effects resulting from the proposed Project.

2.1 Legal Authority and Findings

This Initial Study was prepared in accordance with the California Environmental Quality Act (CEQA) Guidelines and relevant provisions of CEQA of 1970, as amended.

Initial Study. Section 15063 of the CEQA Guidelines describes an Initial Study as a preliminary method for analyzing the potential environmental consequences of a project. The purposes of an Initial Study include:

1. Providing the Lead Agency with the necessary information to decide whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration;
2. Enabling the Lead Agency to modify a project during the planning stage by mitigating adverse impacts prior to preparation of CEQA documentation, thus avoiding the need to prepare an EIR; and
3. Providing documentation of the factual basis for the finding in a Mitigated Negative Declaration that the significant environmental impacts of a project have been mitigated to a less-than-significant level.

Negative Declaration or Mitigated Negative Declaration. Section 15070 of the CEQA Guidelines states that a public agency shall prepare a Negative Declaration or Mitigated Negative Declaration for a project subject to CEQA when:

- a. The Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment; or
- b. The Initial Study identifies potentially significant effects but:
 - i. Revisions in the project plans or proposals made by, or agreed to by, the applicant before a proposed Mitigated Negative Declaration and Initial Study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and
 - ii. There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

An IS/MND may be used to satisfy the requirements of CEQA when a proposed project would have no significant unmitigable effects on the environment. As discussed further in subsequent sections of this document, implementation of the proposed Project would not result in any significant effects on the environment that cannot be reduced to below the level of significance with the mitigation measures included herein.

2.2 Impact Analysis and Significance Classification

The following sections of this IS/MND provide discussions of the possible environmental effects of the proposed Project for specific resource areas as identified on the CEQA Environmental Checklist Form in Appendix G of the CEQA Guidelines (as updated in December 2018). For each resource area, potential effects are discussed and evaluated.

A “significant effect on the environment” is defined by Section 15382 of the CEQA Guidelines as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment” but “may be considered in determining whether the physical change is significant.”

Following the evaluation of each environmental effect determined to be potentially significant is a discussion of mitigation measures and the residual effects or level of significance remaining after the implementation of the measures.

2.3 Initial Study

1. **Project Title:** Inland Feeder – Foothill Pump Station Intertie
2. **Lead Agency Name and Address:** The Metropolitan Water District of Southern California
700 North Alameda St
Los Angeles, CA 90012
3. **Contact Person and Phone Number:** Michelle Morrison, Environmental Planning Section
The Metropolitan Water District of Southern California
(213) 217-7906
4. **Project Location:** Highland, CA (see Figure 1-1)
5. **Project Sponsor’s Name and Address:** The Metropolitan Water District of Southern California
700 North Alameda St
Los Angeles, CA 90012
6. **General Plan Designation(s):** Planned Development and Open Space
7. **Zoning:** Planned Development/Single Family Residential (PD/R-1) and Open Space (OS)
8. **Description of Project:** The proposed Project would construct an intertie, including pipes, valves, and other appurtenances, between Metropolitan’s Inland Feeder Pipeline and San Bernardino Valley Municipal Water District’s Foothill Pump Station. See Section 1.0, *Project Description*, for more information.
9. **Surrounding Land Uses and Setting:** The Project Area is bounded by Greenspot Road and residential development to the north, open space to the south, and large-lot single-family residences and open space to the east and west. See Section 1.3, *Project Location and Land Use*.

- 10. Other public agencies whose approval is required:**
- San Bernardino Valley Water Conservation District, San Bernardino Valley Municipal Water District, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service. See Table 1-3.
- 11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**
- Yes, Metropolitan has conducted consultation pursuant to PRC Section 21080.3.1 and has made an impact determination. See Section 3.18, *Tribal Cultural Resources*.

2.4 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

- ☐ 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.

Jennifer Harriger

Jennifer Harriger

Manager, Environmental Planning Section

05-13-2024

Date

3.0 Evaluation of Environmental Impacts

3.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

a. Have a substantial adverse effect on a scenic vista?

Less-Than-Significant Impact. No, the proposed Project would not have a substantial adverse effect on a scenic vista. A scenic vista is defined as a viewpoint that provides panoramic or focused views of a highly valued landscape or scenic resource for the benefit of the general public. The city of Highland is situated at the base of the San Bernardino Mountains; however, the City does not regulate private views (City of Highland 2006a). The proposed Project Area is located on an approximately 10-acre triangular-shaped parcel, immediately south of the intersection of Cone Camp Road and Greenspot Road. The proposed Project would construct a supply and discharge pipeline and associated vault structures, which would be located underground. The proposed Project would also construct four surge tanks that would be approximately 16.5 to 19 feet tall and above ground. However, these structures would not block views or substantially affect a scenic vista. During construction, physical signs of the proposed Project would include the presence of construction equipment, materials, and personnel at staging and access areas, including fencing for safety and security purposes. These areas would be visible to local residents and motorists on nearby roads; however, construction activities would be temporary and would be removed following the end of construction activities. The proposed Project would not result in adverse visual changes to the surrounding area because the proposed Project components would be added within the existing Foothill Pump Station facility. In addition, the proposed Project components would be constructed mainly underground or would be consistent with the visual character of the existing facility. Therefore, impacts would be less than significant.

- b. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

No Impact. No, the proposed Project would not substantially damage scenic resources within a State scenic highway. There are no designated State scenic highways near the proposed Project. The nearest eligible State scenic highway is State Route 10 Redlands/ State Route 18, located approximately 2.5 miles south of the proposed Project (Caltrans 2018). Thus, the proposed Project would not be located within or adjacent to a State-designated scenic highway and would not result in damage to scenic resources within a state scenic highway. No impact would occur.

- c. *In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?*

No Impact. No, the proposed Project would not substantially degrade the existing visual character or quality of public views of the proposed Project Area or conflict with applicable zoning or other regulations governing scenic quality. The proposed Project would be located in an urbanized area and would include an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The proposed Project would be located in an area zoned as Planned Development/Single Family Residential (PD/R-1) and Open Space (OS). The portion of the proposed Project within the PD/R-1 zone would be constructed entirely within the Foothill Pump Station facility. The portion of the proposed Project located outside of the Foothill Pump Station facility would be constructed within an area zoned as OS, and would be constructed below ground within an existing right of way. The proposed Project facilities would not conflict with local zoning or other regulations governing scenic quality, nor would it substantially degrade the existing visual character or quality of public views of the Project Area and its surroundings, and no impact would occur.

- d. *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Less-Than-Significant Impact. No, the proposed Project would not create new sources of substantial light or glare which would adversely affect day or nighttime view in the area. The proposed Project does not propose permanent lighting. While most of the construction would occur during daytime hours, occasional nighttime construction activities may be required to shutdown the Inland Feeder and install the tie-in connection. Temporary construction lighting would be placed at various locations along the proposed Project Area, including construction access points and staging areas.

The proposed Project Area is bounded by Greenspot Road and residential development to the north, a dirt road and open space to the south, and large-lot single-family residences and open space to the east and west. Any nighttime lighting would be located directly in the areas where work is being conducted and would be shielded to prevent light from spilling over into adjacent areas. Construction lights would be removed following the completion of construction activities. As outlined in Appendix A (Metropolitan Standard Practices), floodlights would be directed to shine downward and shielded to avoid a nuisance to the surrounding areas, no lighting would be directed toward a residence or natural areas. No new sources of substantial light or glare are proposed; therefore, impacts would be less than significant.

REFERENCES

California Department of Transportation (Caltrans), 2018. California State Scenic Highway System Map. Available:
<https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca>, accessed December 14, 2023.

City of Highland, 2006a. General Plan Conservation and Open Space Element. Available:
<https://www.cityofhighland.org/DocumentCenter/View/148/Conservation-and-Open-Space-Element-PDF>, accessed December 14, 2023.

3.2 Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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 forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural 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 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))?*

- 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 which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

No Impact. No, the proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use; nor conflict with existing zoning for agricultural, Williamson Act, forest land, or Timberland; nor result in the loss of forest land, conversion of forest land to non-forest use, or involve other changes in the existing environment which could result in conversion of Farmland or forest land to non-agricultural or non-forest use. The proposed Project would be located on an approximately 10-acre triangular-shaped parcel, immediately south of the intersection of Cone Camp Road and Greenspot Road, and would not be located on land identified as Prime or Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation 2023). Furthermore, there are no lands enrolled under the Williamson Act and no forest land or timberland within the proposed Project Area. Therefore, the proposed Project would not convert farmland or forest land to other uses and no impact would occur.

REFERENCES

California Department of Conservation, 2023. California Important Farmland Finder, 2023. Available online at <https://www.conservation.ca.gov/dlrp/fmmp>. Accessed December 7, 2023.

3.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

The following discussion is based on air quality emissions calculations and modeling prepared for the proposed Project and included in Appendix B.

REGULATORY FRAMEWORK

The Southern California area is divided into a number of geographical air basins for the purpose of air quality planning and management.

South Coast Air Basin

The proposed Project Area is located in the South Coast Air Basin (SCAB). The SCAB includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside counties. The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for the SCAB. The SCAQMD has primary responsibility for regulating stationary sources of air pollution within its jurisdictional boundaries, implementing air quality programs required by state and federal mandates, and enforcing rules and regulations based on air pollution laws.

The federal and state Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for “criteria pollutants” and other pollutants, which are summarized in Table 3.3-1. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide (CO), volatile organic compounds (VOC)/reactive organic gases (ROG),¹ nitrogen oxides (NO_x), particulate matter with diameters of 10 microns or less (PM₁₀) and 2.5 microns or less (PM_{2.5}), sulfur dioxide, and lead. Other pollutants are created

¹ CARB defines VOC and ROG similarly as “any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term VOC is used in this document.

indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between VOC and NO_x. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog). The local air quality management agency, SCAQMD, is required to monitor air pollutant levels to ensure that the NAAQS and CAAQS are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the SCAB is classified as being in “attainment” or “nonattainment.” The attainment status of the SCAB for each pollutant regulated by the NAAQS and CAAQS is summarized in Table 3.3-1.

TABLE 3.3-1
AIR QUALITY STANDARDS AND AIR BASIN ATTAINMENT STATUS

Pollutant	Federal Standard (NAAQS)	California Standard (CAAQS)	SCAB Attainment Status
Ozone	0.070 ppm (8-hr average)	0.09 ppm (1-hr average) 0.070 ppm (8-hr average)	Nonattainment (federal and state)
Carbon Monoxide	35.0 ppm (1-hr average) 9.0 ppm (8-hr average)	20.0 ppm (1-hr average) 9.0 ppm (8-hr average)	Attainment (federal) Attainment (state)
Nitrogen Dioxide	0.100 ppm (1-hr average) 0.053 ppm (annual average)	0.18 ppm (1-hr average) 0.030 ppm (annual average)	Attainment (federal) Nonattainment (state) ¹
Sulfur Dioxide	0.075 ppm (1-hr average) 0.5 ppm (3-hr average) 0.14 ppm (24-hr average) 0.030 ppm (annual average)	0.25 ppm (1-hr average) 0.04 ppm (24-hr average)	Unclassified (federal) Attainment (state)
Lead	0.15 µg/m ³ (rolling 3-month average) 1.5 µg/m ³ (calendar quarter)	1.5 µg/m ³ (30-day average)	Nonattainment (federal) ² Attainment (state)
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr average)	50 µg/m ³ (24-hr average) 20 µg/m ³ (annual average)	Nonattainment (federal and state) ³
Particulate Matter (PM _{2.5})	35 µg/m ³ (24-hr average) 12 µg/m ³ (annual average)	12 µg/m ³ (annual average)	Nonattainment (federal and state)
Sulfates	No Federal Standards	25 µg/m ³ (24-hr average)	Attainment (state)
Hydrogen Sulfide	No Federal Standards	0.03 ppm (1-hr average)	Unclassified (state)
Vinyl Chloride	No Federal Standards	0.01 ppm (24-hr average)	Unclassified (state)

NOTES:

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; SCAB = South Coast Air Basin; ppm = parts per million; hr = hour; µg/m³ micrograms per cubic meter.

1. Only the portion of the SCAB along State Route 60 between U.S. Highway 60 and the western limit of Riverside County is designated nonattainment for nitrogen dioxide CAAQS.

2. Only the Los Angeles County portion of the SCAB is designated nonattainment for lead NAAQS.

3. Only the San Bernardino County portion of the SCAB is designated nonattainment for PM₁₀ CAAQS

SOURCE: CARB 2016 and 2019a through 2019j; USEPA 2021a through 2021g

The SCAQMD has developed air quality management plans (AQMPs) to meet the requirements of the federal Clean Air Act. The most recent plan is the SCAQMD Final 2022 Air Quality Management Plan (SCAQMD 2022). The 2022 AQMP presents a combined state and County strategy (including related mandated elements) to attain the 2015 federal 8-hour ozone standard by August 2038, as required by the federal Clean Air Act Amendments of 1990 and applicable USEPA clean air regulations. San Bernardino County is anticipated to attain the 2015 federal 8-hour ozone standard, using local, state, and federal clean air programs (SCAQMD 2022). This plan addresses various federal nonattainment and

attainment/maintenance planning requirements, is incorporated into the State Implementation Plan by the CARB, and is approved or disapproved by the USEPA.

SCAQMD

The SCAQMD has identified significance thresholds for short-term construction emissions and for long-term operational emissions for criteria air pollutants within its jurisdictional boundaries, as shown in Table 3.3-2.

**TABLE 3.3-2
SCAQMD SIGNIFICANCE THRESHOLDS**

Thresholds	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Construction Thresholds (pounds per day)	75	100	550	150	150	55
Operational Thresholds (pounds per day)	55	55	550	150	150	55

NOTES:

VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = particulate matter with diameters of 10 microns or less; PM_{2.5} = particulate matter with diameters of 2.5 microns or less.

SOURCE: SCAQMD 2023

METHODOLOGY

Air pollutant emissions associated with the proposed Project were estimated using California Emissions Estimator Model (CalEEMod) version 2022.1.1. CalEEMod uses project-specific information, including the project's land uses and location, to estimate a project's emissions. For the purposes of the air quality analysis, construction activities were modeled for the earliest potential time frame to provide for a conservative analysis. If construction is delayed and begins after 2025, the emissions presented in this IS/MND would be conservative, as emissions occurring in future years would be lower than those analyzed herein due to the use of a more energy-efficient and cleaner-burning construction vehicle fleet mix, pursuant to State regulations that require vehicle fleet operators to phase-in less polluting heavy-duty equipment. Construction activities associated with the proposed Project would be limited to Mondays through Fridays, 7:00 a.m. to 4:00 p.m., with occasional work on Saturday. Some nighttime construction may also be required. Construction activities are not expected on Sundays or during federal holidays. Assumptions, including detailed phasing, construction employee vehicles, haul trucks, concrete trucks, and vendor trucks and equipment list and modeling output are included in Appendix B. The proposed Project is a water infrastructure project that would not increase water supply, but rather enhance water delivery flexibility in response to drought conditions. Operations and maintenance activities associated with the proposed Project, including the frequency of Metropolitan employee visits, maintenance, and shutdowns, would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources (SCAQMD 1993).² The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities. Due to the minimal emissions that would result from these periodic vehicle trips by Metropolitan employees to the proposed Project Area, no

² Criteria pollutant emissions are not required to be estimated for electricity as it is not a source of Project criteria air pollutant emissions as defined by SCAQMD.

operational emissions would be generated at the site that would exceed the SCAQMD's regional operational thresholds. As such, the proposed Project's operational emissions are evaluated qualitatively.

ANALYSIS OF IMPACTS

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less-Than-Significant Impact. No, the proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. The proposed Project would be subject to the SCAQMD 2022 AQMP. A significant air quality impact may occur if a project is not consistent with the applicable AQMP adopted by the SCAQMD or if it would in some way represent a substantial hindrance to employing the policies or obtaining the goals of that plan.

The proposed Project must comply with CARB and/or the USEPA-mandated mobile source emissions regulations outlined in the applicable AQMPs. These regulations are related to on-road vehicle emissions standards, off-road equipment fleet standards, and fuel sulfur standards. The proposed Project would result in temporary construction activities and does not include permanent stationary emissions sources regulated by the SCAQMD. Therefore, regulations pertaining to permanent stationary emission sources do not apply to the proposed Project. Construction industry jobs generally have no regular place of business, as construction employees commute to job sites throughout the region, which may change throughout the year. Moreover, these jobs would be temporary in nature, generally lasting up to the duration of proposed Project construction, which would take approximately 12 months to complete, occurring over a 31-month period, with a break in between two construction stages (see Section 1.5.1, *Schedule*, for additional details).

The AQMP also includes control strategies applicable to short-term emissions from construction activities. The proposed Project would be required to comply with the CARB Airborne Toxic Control Measures that limits heavy-duty diesel motor vehicle idling to no more than 5 minutes at any given location with certain limited exceptions defined in the regulation for equipment in which idling is integral to the function of the equipment or activity (such as concrete trucks and concrete pouring) as seen in Section 2485 in Title 13 of the California Code of Regulations (CCR) (Title 13 CCR, Section 2485). In addition, contractors would be required to comply with required CARB In-Use Off-Road Diesel Vehicle Regulation to use lower-emitting equipment in accordance with the phased-in compliance schedule for equipment fleet operators (Title 13 CCR, Section 2449). In addition, with respect to temporary construction emission sources, such as fugitive dust, the proposed Project would comply with all applicable SCAQMD rules and regulations, such as Rule 403, which ensures that fugitive dust emissions are reduced. Additionally, as discussed in Appendix A (Metropolitan Standard Practices), the Project Contractor(s) would be required to comply with Metropolitan standard practices related to air pollution control and dust control, including the submittal of a Dust Control Plan, the use of water trucks in construction areas, and implementation of the Best Available Control Measures listed in Table 1 of the SCAQMD Rule 403, and that off-road diesel-fueled construction equipment greater than 25 horsepower (hp) shall be compliant with federally mandated clean diesel engines (USEPA Tier 4 Final), as outlined in the construction contractor specifications. Furthermore, as detailed in Section 3.3 (b), below, the projected construction emissions for criteria pollutants would not exceed the SCAQMD's regional significance thresholds for construction activities.

The proposed Project would be located on an approximately 10-acre parcel (see Section 1.0, *Project Description*, for additional details). The proposed Project Area spans 6.615 acres of the 10-acre parcel. The proposed Project is a water infrastructure project that would not increase water supply, but rather would enhance water delivery flexibility in response to drought conditions and limited SWP allocations. Metropolitan is proposing an intertie connection between the Inland Feeder and Foothill Pump Station and would not otherwise directly or indirectly cause growth. As described above, operations and maintenance activities would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources.³ The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. Therefore, the proposed Project would not conflict with or obstruct the applicable 2022 AQMP. Impacts would be less than significant.

- b. 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?*

Less-Than-Significant Impact. No, the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the proposed Project region is in nonattainment under an applicable federal or State ambient air quality standard. The proposed Project would generate short-term construction-related emissions through the use of construction equipment and vehicles, grading and the disturbance of soil materials, and transport of construction employees and materials to and from the work site. Travel on unpaved surfaces and processing of soil material would produce fugitive dust. As mentioned above, with respect to temporary construction emission sources, such as fugitive dust, the proposed Project would comply with all applicable SCAQMD rules and regulations, such as Rule 403, which ensures that fugitive dust emissions are reduced. Additionally, as discussed in Appendix A (Metropolitan Standard Practices), the Project Contractor(s) would be required to comply with Metropolitan standard practices related to air pollution control and dust control, including the submittal of a Dust Control Plan, the use of water trucks in construction areas and implementation of the Best Available Control Measures listed in Table 1 of the SCAQMD Rule 403, and that off-road diesel-fueled construction equipment greater than 25 hp shall be compliant with federally mandated clean diesel engines (USEPA Tier 4 Final), as outlined in the construction contractor.

The SCAQMD has quantified thresholds of significance for short-term construction emissions for criteria air pollutants within the SCAB, as described above in Table 3.3-2. The SCAQMD recommends that projects with construction-related emissions that exceed any of the identified emission thresholds be considered as potentially significant air quality impacts. The construction emissions associated with the proposed Project and the applicable emissions thresholds are presented in Table 3.3-3.

³ Criteria pollutant emissions are not required to be estimated for electricity as it is not a source of Project criteria air pollutant emissions as defined by SCAQMD.

**TABLE 3.3-3
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)^A**

Source	VOC	NO _x	CO	SO _x	PM ₁₀ ^b	PM _{2.5} ^b
Supply Connection Components						
Pipeline Trenching and Installation	0.48	7.10	11.55	0.03	3.41	0.55
Vault Structure Excavation	0.17	3.42	7.66	0.02	1.92	0.29
Vault Structure Installation	0.45	7.46	12.25	0.04	4.96	0.73
Surge Tank Excavation	0.15	2.56	7.18	0.01	0.99	0.16
Surge Tank Installation	0.53	8.48	16.78	0.04	4.85	0.73
Discharge Connection Components						
Pipeline Trenching and Installation	0.54	9.12	13.17	0.04	5.88	0.88
Vault Structure Excavation	0.16	3.56	7.73	0.02	2.14	0.32
Vault Structure Installation	0.43	7.30	12.15	0.04	4.84	0.72
Surge Tank Excavation	0.23	4.48	8.84	0.02	3.17	0.47
Surge Tank Installation	0.52	8.65	16.62	0.04	4.85	0.73
Maximum Daily Emissions	0.54	9.12	16.78	0.04	5.88	0.88
Significance Thresholds	75	100	550	150	150	55
Significant Impact?	No	No	No	No	No	No

NOTES:

a. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix B.

b. Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA 2024

As shown in Table 3.3-3 the maximum daily construction emissions generated by the proposed Project's worst-case construction scenario would not exceed SCAQMD's daily significance threshold for any of the criteria pollutants. Therefore, the proposed Project's construction emission impacts would be less than significant, and no mitigation is required.

As discussed above, operational activities associated with the proposed Project would be similar to existing conditions and would only slightly increase the demand for electricity resources.⁴ The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. Therefore, once construction is complete, the proposed Project would result in minimal operational emissions associated with maintenance, and would not result in a cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant.

c. Expose sensitive receptors to substantial pollutant concentrations?

Less-Than-Significant Impact. No, the proposed Project would not expose sensitive receptors to substantial pollutant concentrations. Sensitive receptors are land uses that are considered more sensitive to air pollutants than typical receptors. Schools, hospitals, residential uses, and convalescent homes are

⁴ Criteria pollutant emissions are not required to be estimated for electricity as it is not a source of Project criteria air pollutant emissions as defined by SCAQMD.

considered sensitive receptors. As stated above, the proposed Project Area spans 6.61 acres of a 10-acre parcel. The nearest sensitive receptors to the proposed Project Area are single-family residences located approximately 30 feet and 275 feet to the west past Weaver Street, a single-family residence approximately 40 feet to the east along Cone Camp Road, and single-family residences located approximately 250 feet to the north across Greenspot Road.

The localized construction air quality analysis was conducted using the methodology prescribed in the SCAQMD Final Localized Significance Threshold (LST) Methodology (SCAQMD 2008). The screening criteria provided in the Final LST Methodology were used to determine localized construction emissions thresholds for the proposed Project. The localized significance thresholds are applicable to NO_x, CO, PM₁₀, and PM_{2.5}. For NO_x and CO, the thresholds are based on the ambient air quality standards. For PM₁₀ and PM_{2.5}, the thresholds are based on requirements in SCAQMD Rule 403 (Fugitive Dust) for construction and Rule 1303 (New Source Review Requirements) for operations. The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The screening criteria depend on: (1) the area in which the project is located, (2) the size of the project area, and (3) the distance between the project area and the nearest sensitive receptor.

SCAQMD's Methodology clearly states that "off-site mobile emissions from the proposed Project should not be included in the emissions compared to LSTs." Therefore, for purposes of the LST analysis, only on-site emissions were considered, including emissions from heavy-duty construction equipment and on-site truck travel. The closest existing sensitive receptors to the proposed Project's construction area are located approximately 30 feet to the west of the proposed Project Area. The LST used for the localized significance impact analysis were conservatively based on a 5-acre project construction area in the Central San Bernardino Valley Source-Receptor Area (SRA 34) and based on the SCAQMD screening criteria for sensitive receptors located within 25 meters away (SCAQMD 2008).^{5,6}

The maximum daily localized emissions for each of the construction components and the localized significance thresholds are presented in Table 3.3-4. The same phasing and equipment assumptions, including compliance with SCAQMD Rule 403, were used as for the regional emissions calculations discussed above.

⁵ Appendix C of the SCAQMD *Final Localized Significance Threshold Methodology* (2008) provides screening levels at distances of 25, 50, 100, 200, and 500 meters. Interpolation between distances is permissible; however, for ease of calculation and to provide a conservative analysis, the 25-meter distance is used, which is equivalent to approximately 82 feet. Because actual sensitive receptors are located approximately 30 feet from the Project's construction area, the 25-meter distance was used since the SCAQMD, *Final Localized Significance Threshold Methodology*, suggests "Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.", June 2003 and revised July 2008, p. 33.

⁶ Using the screening criteria applicable for a 5-acre site is conservative because the localized significance thresholds are project site dependent, and the allowable thresholds increase with increasing project size. Therefore, using a 5-acre site threshold instead of the Project area's full 6.615 acres yields a more stringent analysis.

TABLE 3.3-4
MAXIMUM LOCALIZED CONSTRUCTION EMISSIONS (POUNDS PER DAY)^A

Source	NO _x	CO	PM ₁₀ ^b	PM _{2.5} ^b
Supply Connection Components				
Pipeline Trenching and Installation	4.89	9.36	2.69	0.34
Vault Structure Excavation	1.99	6.44	1.50	0.17
Vault Structure Installation	4.18	9.92	4.09	0.48
Surge Tank Excavation	1.87	6.34	0.76	0.09
Surge Tank Installation	5.34	14.27	3.99	0.48
Discharge Connection Components				
Pipeline Trenching and Installation	5.19	9.61	4.73	0.55
Vault Structure Excavation	2.02	6.47	1.69	0.18
Vault Structure Installation	4.15	9.90	3.98	0.47
Surge Tank Excavation	2.15	6.57	2.43	0.26
Surge Tank Installation	5.37	14.29	3.99	0.48
Maximum Daily Emissions	5.37	14.29	4.73	0.55
Significance Thresholds	270.0	1746.0	14.0	8.0
Significant Impact?	No	No	No	No

NOTES:

- Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix B.
- Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.
- The SCAQMD LSTs are based on Source Receptor Area 34 (Central San Bernardino Valley) for a 5-acre site with sensitive receptors conservatively assumed to be located within 25 meters (approximately 82 feet) away from the construction area.

SOURCE: ESA 2024

As shown in Table 3.3-4 above, the proposed Project's maximum localized construction emissions would be below the localized screening thresholds for NO_x, CO, PM₁₀, and PM_{2.5} for the closest air quality sensitive receptors are the single-family residential uses located west of the proposed Project Area approximately 30 feet away. Therefore, the proposed Project would not expose sensitive receptors to substantial pollutant concentrations during construction and impacts would be less than significant.

Operations and maintenance activities for the proposed Project would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources.⁷ The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities. The proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. Therefore, once construction is complete, the proposed Project would result in minimal operational emissions associated with maintenance, and would not expose sensitive receptors to substantial pollutant concentrations during operations, and impacts would be less than significant.

⁷ Criteria pollutant emissions are not required to be estimated for electricity as it is not a source of Project criteria air pollutant emissions as defined by SCAQMD.

CO Hotspots

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO decreased dramatically in the SCAB with the introduction of the automobile catalytic converter in 1975. No exceedances of CO have been recorded at monitoring stations in the SCAB in recent years and the SCAB is currently designated as a CO attainment area for both the CAAQS and NAAQS. As discussed below, it is not expected that CO levels at proposed Project-impacted intersections would rise to such a degree as to cause an exceedance of these standards.

Proposed Project construction would result in temporary additional construction employee vehicles and truck trips to the proposed Project Area but the additional vehicles and trips would cease after construction, which would take approximately 12 months to complete, occurring over a 31-month period, with a break in between two construction stages (see Section 1.5.1, *Schedule*, for additional details). The proposed Project would construct an intertie connection between the Inland Feeder and Foothill Pump Station consisting of pipelines, vaults, and surge tanks. As explained above, the proposed Project would not increase water supply and would not otherwise directly or indirectly cause growth beyond the AQMP growth projections. The proposed-Project Area is not within an area with poor circulation or heavy traffic. Therefore, Project-related construction would not cause or contribute to potential temporary CO hotspots, and construction activities would not expose sensitive receptors to substantial concentrations of carbon monoxide. Impacts would be less than significant.

Operations and maintenance activities associated with the proposed Project would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources.⁸ The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. Therefore, once construction is complete, the proposed Project would result in minimal operational emissions associated with maintenance activities. Therefore, Project-related operations and maintenance activities would not cause or contribute to potential temporary CO hotspots, and would not expose sensitive receptors to substantial concentrations of carbon monoxide. Impacts would be less than significant.

Toxic Air Contaminants (TACs)

Typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes, automotive repair facilities, and dry-cleaning facilities. The proposed Project would not include any of these potential sources. Temporary TAC emissions associated with diesel particulate matter (DPM) emissions from heavy construction equipment would occur during construction activities. According to Office of Environmental Health Hazard Assessment and SCAQMD's Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (SCAQMD 2003), health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 70-year) resident exposure duration. Given the temporary construction schedule of approximately 12 months to complete, occurring over a 31-month period, with a break in between two

⁸ Criteria pollutant emissions are not required to be estimated for electricity as it is not a source of Project criteria air pollutant emissions as defined by SCAQMD.

construction stages (see Section 1.5.1, *Schedule*, for additional details), the proposed Project would not result in a long-term (i.e., lifetime or 70-year) exposure as a result of construction activities.

The emissions modeling analysis presented in Section 3.3 (b), above, provides for a conservative assessment of the proposed Project's construction activities by assuming construction at the earliest time frame, which assumes the use of the most conservative emission factors. Furthermore, the analysis assumes heavy-duty equipment usage for each day of the various construction components. In reality, not all equipment would necessarily be used over the whole of the construction period, they may be used for individual construction components or sub-components with some equipment used only periodically. In addition, the proposed Project would be consistent with the applicable 2022 AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. The proposed Project would comply with the CARB Airborne Toxic Control Measures that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these CARB regulations would minimize emissions of TACs during construction. Based on the short-term duration of proposed Project construction and compliance with regulations that would minimize emissions, construction of the proposed Project would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

As noted above, operations and maintenance activities, including the frequency of staff visits, maintenance, and shutdowns, would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources.⁹ The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. In addition, maintenance and employee trucks would be subject to the five-minute regulatory idling limitation and proposed Project trucks would be required to comply with the applicable provisions of the CARB 13 CCR, Section 2025 (Truck and Bus regulation) to minimize and reduce PM and NO_x emissions from existing diesel trucks. Therefore, proposed Project operations would not be considered a substantial source of diesel particulates and proposed Project operations would only result in minimal emissions of TAC from maintenance activities. Based on expected use, potential long-term operational impacts associated with the release of TACs would be minimal, regulated, and controlled. Therefore, operation and maintenance activities associated with the proposed Project would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact. No, the proposed Project would not result in other emissions, such as those leading to odors, adversely affecting a substantial number of people. During construction activities, emissions would result from the use of construction equipment and vehicles, grading and the disturbance of soil materials, and architectural coatings, solvents, and transport of employees and materials to and from the work site. While these emissions may generate temporary odors, they would be limited to the construction period and would not be noticeable beyond the proposed Project boundaries. Operations and maintenance activities for the Metropolitan facility would not change from existing conditions, and would include few maintenance trips,

⁹ Criteria pollutant emissions are not required to be estimated for electricity as it is not a source of Project criteria air pollutant emissions as defined by SCAQMD.

which would not emit new emissions, such as odors, which would be noticeable at the nearest residence. Therefore, no impact would occur.

REFERENCES

- SCAQMD (South Coast Air Management District), November 1993. CEQA Air Quality Handbook. Accessed April 3, 2024. Available: [https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-\(1993\)](https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993)).
- SCAQMD (South Coast Air Management District), 2003. Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis. Accessed April 3, 2024. Available: <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.aqmd.gov%2Fdocs%2Fdefault-source%2Fceqa%2Fhandbook%2Fmobile-source-toxics-analysis.doc%3Fsfvrsn%3D2&wdOrigin=BROWSELINK>.
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- SCAQMD(South Coast Air Management District), 2022. Final 2022 Air Quality Management Plan. Accessed April 3, 2024. Available: <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/final-2022-aqmp.pdf?sfvrsn=16>.
- SCAQMD(South Coast Air Management District), 2023. South Coast AQMD Air Quality Significance Thresholds. Accessed April 3, 2024. Available: [south-coast-aqmd-air-quality-significance-thresholds.pdf](#)

3.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

Regulated or sensitive biological resources studied and analyzed herein include special-status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees. The following discussion is based on a Biological Resources Assessment prepared for the proposed Project and included in Appendix C. The Biological Resources Assessment documents the existing biological conditions of the proposed Project Area and evaluates the potential for impacts to biological resources during construction of the proposed Project. Operations and maintenance activities at the Foothill Pump Station facility would be similar to existing conditions once construction activities are completed and would not result in impacts to biological resources; therefore, operations will not be discussed further in this section.

REGULATORY FRAMEWORK

The following is a summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. Many federal and state statutes provide a regulatory structure that

guides the protection of biological resources. Agencies with the responsibility for protection of biological resources include:

- Regional Water Quality Control Board (RWQCB) (waters of the State);
- United States Fish and Wildlife Service (USFWS) (federally listed species and migratory birds); and;
- California Department of Fish and Wildlife (CDFW) (fish and wildlife resources of the State, riparian areas and other waters of the State, state-listed species).

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g., USFWS), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California, pursuant to the California Endangered Species Act (CESA) or the California Native Plant Protection Act. Species are also considered rare under CEQA if they are not formally listed but exist in such small numbers throughout a significant portion of their range that they may become endangered if their environment worsens or are likely to become endangered throughout all or a significant portion of their range.

California Fish and Game Code Section 2081 allows CDFW the authority to authorize take of species listed as endangered, threatened, candidate, or a rare plant in the State of California, if that take is incidental to otherwise lawful activities and if certain conditions are met.

Migratory birds, including raptors and passerines (perching birds), are protected under the federal Migratory Bird Treaty Act (MBTA). The MBTA makes it illegal to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations Part 10, including feathers or other parts, nests, eggs, or products, unless authorized under a permit. California Fish and Game Code Sections 3505, 3503.5, 3511, 3513, and 3800 prohibit the take, possession, or destruction of birds, their nests, or eggs with limited exceptions.

Sensitive habitats are vegetation types, associations, or sub-associations that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife.

Chapter 8.36 of the City of Highland Municipal Code prevents the removal, relocation, or destruction of any heritage tree within City of Highland's city limits without proper tree removal permit and associated environmental review (Chapter 8.36, Heritage Trees). Section 8.36.020 of the City of Highland Municipal Code defines heritage trees as any tree that meets the following criteria:

- A. All woody plants in excess of 15 feet in height and having a single trunk circumference of 24 inches or more, as measured four and one-half feet above ground level; or
- B. Multi-trunk tree(s) having a total circumference of 30 inches or more, measured four and one-half feet from ground level; or
- C. A stand of trees, the nature of which makes each dependent upon the others for survival; or
- D. Any other tree as may be deemed historically or culturally significant by the community development director or designee because of size, condition, location, or aesthetic qualities.

The definition of historic landmark includes any tree designated as an historic landmark by city council action. Trees which bear fruit or nuts (with the exemption of trees planted in a grove) and trees planted,

grown, and/or held for sale by licensed nurseries and/or tree farms are exempt from the provisions of the City's code.

Tree removal is defined by the City's code as an act which will cause a heritage tree to die, as determined by a tree expert, including, acts that inflict damage upon root systems, bark or other parts of tree by fire, application of toxic substances or operation of equipment or machinery, improper watering, changing the natural grade of the drip line area around the trunk, or attachment of signs or artificial material piercing the bark of the tree by means of nails, spikes, or other piercing objects. A Tree Removal Permit is required for the removal of all heritage trees within the city limits. In addition to a Tree Removal Permit, a Landmark Alteration Permit is required for the removal of all trees designated as historic landmarks. The permit requirement may be waived in the case that the tree is determined to be a public health, safety, and welfare concern. Chapter 16.64.040 (Heritage Tree Preservation Requirements) further outlines the requirements of this provision, including the protection of existing trees. No trees are proposed to be removed or impacted during project activities.

Chapter 16.64.050 (Riparian Plant Conservation) establishes regulations to promote healthy and abundant riparian habitats within the City of Highland and works alongside existing regulations enforced by CDFW. This ordinance generally prohibits the removal of any riparian vegetation within 25 feet of the dripline of riparian vegetation adjacent to a "blueline stream" as indicated by the USGS Quadrangle (topographic map) or identified as a protected riparian area in a community or specific plan. The removal of any vegetation within 25 feet of the drip line of riparian vegetation along a blueline stream requires a tree removal permit and shall be subject to environmental review. The provisions of this section apply to both private and public lands within the City limits, with exceptions for emergency flood control operations and authorized water conservation measures established and authorized by an appropriate independent special district with such responsibility. No riparian vegetation is proposed to be removed during project activities.

METHODOLOGY

Biological conditions were evaluated by confirming applicable regulations, policies, and standards; reviewing biological literature and querying available databases pertinent to the proposed Project Area and vicinity including CDFW's California Natural Diversity Data Base (CNDDB) (CDFW 2023a), CDFW's California Sensitive Natural Communities List (CDFW 2023b), CNPS's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2023), Natural Resource Conservation Service's (NRCS) Web Soil Survey (NRCS 2023), USFWS's Critical Habitat Portal (USFWS 2023a), USFWS's National Wetland Inventory (USFWS 2023b); and conducting a reconnaissance-level biological survey of the proposed Project Area. Refer to the Biological Resources Assessment for a full list of reviewed literature (Appendix C). The reconnaissance-level biological resources survey was conducted within the 59.96-acre Study Area, which includes the approximately 6.61-acre proposed Project Area and a 500-foot buffer area surrounding the proposed Project Area.

On December 22, 2023, a reconnaissance-level biological survey of the proposed Project Area was conducted by ESA. The survey was performed by walking meandering transects throughout the proposed Project Area to document existing site conditions and the potential presence of regulated biological resources, including special-status plant and wildlife species, sensitive plant communities, jurisdictional waters and wetlands, and habitat for nesting birds. Weather conditions were overcast with temperatures at 64 (degrees Fahrenheit) with variable winds ranging from 0 to 7 miles per hour.

Additional surveys have been conducted within the general proposed Project Area since 2022, including a focused San Bernardino kangaroo rat (*Dipodomys merriami parvus*) presence/absence trapping survey conducted by ECORP in 2022 (ECORP 2022), a San Bernardino kangaroo rat burrow survey conducted by ESA in 2023 (ESA 2023a), and small mammal nighttime activity survey conducted by ESA in 2023 (ESA 2023b). The results of these additional surveys were integral to refining the understanding of potential impacts to special-status biological resources.

EXISTING BIOLOGICAL CONDITIONS

The proposed Project Area includes a portion of an existing fenced and graded triangular property that encompasses the Metropolitan and SBVMWD facilities. Existing dirt access roads occur along the western and southern extent of the proposed Project Area, with remnant California buckwheat – brittle bush scrub habitat interspersed between the existing graded roads. The surrounding Study Area, which includes the proposed Project Area and a 500-foot buffer around the proposed Project Area, is bounded by Greenspot Road and residential development to the north, a dirt road and open space to the south, and large-lot single-family residences and open space to the east and west.

Topography and Soils

Topography within the Study Area generally slopes from east to west and soils consist of alluvium derived from granite. The majority of the Study Area is mapped as Soboba stony loamy sand, 2-9% slopes, which consists of stony loamy sand 0–10 inches, very stony loamy sand 10–24 inches, and very stony sand 24–60 inches. Hanford coarse sandy loam, 2-9% slopes was mapped in the northern portion of the Study Area outside of the proposed Project Area and consists of sandy loam 0–12 inches and fine sandy loam 12–60 inches.

Existing Vegetation and Land Cover Types

Natural communities and land cover types mapped within the Study Area include annual grasses and forbs, brittle bush scrub, disturbed brittle brush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, disturbed chamise chaparral – brittle bush scrub, hairy yerba santa scrub, mustard fields, developed, and disturbed. However, the proposed Project Area is dominated by developed land cover (5.84 acres) within the triangular fenced area, followed by disturbed land cover (0.40 acre) comprised of existing dirt roads, and California buckwheat – brittle bush scrub (0.37 acre) within the southern portion of the Study Area. The Study Area is mapped by CDFW as occurring within the Riversidean alluvial fan sage scrub habitat with a State rank of S1.1. However, the Riversidean alluvial fan sage scrub habitat indicator species, scale broom (*Lepidospartum squamatum*), was not observed as a dominant species within any of the observed natural communities. Only one scale broom individual was observed within the Study Area, but outside of the proposed Project Area. Therefore, none of the natural communities present within the Study Area meet the criteria for Riversidean alluvial fan sage scrub. As a result, and based on review of CDFW's California Sensitive Natural Communities List, no sensitive natural communities were mapped within the Study Area.

Observed Plant and Wildlife Species

Common plant species identified within the Study Area include California buckwheat (*Eriogonum fasciculatum*), deerweed (*Acmispon glaber*), brittlebush (*Encelia farinosa*), California sagebrush (*Artemisia californica*), yerba santa (*Eriodictyon* sp.), black mustard (*Brassica nigra*), cheeseweed mallow (*Malva*

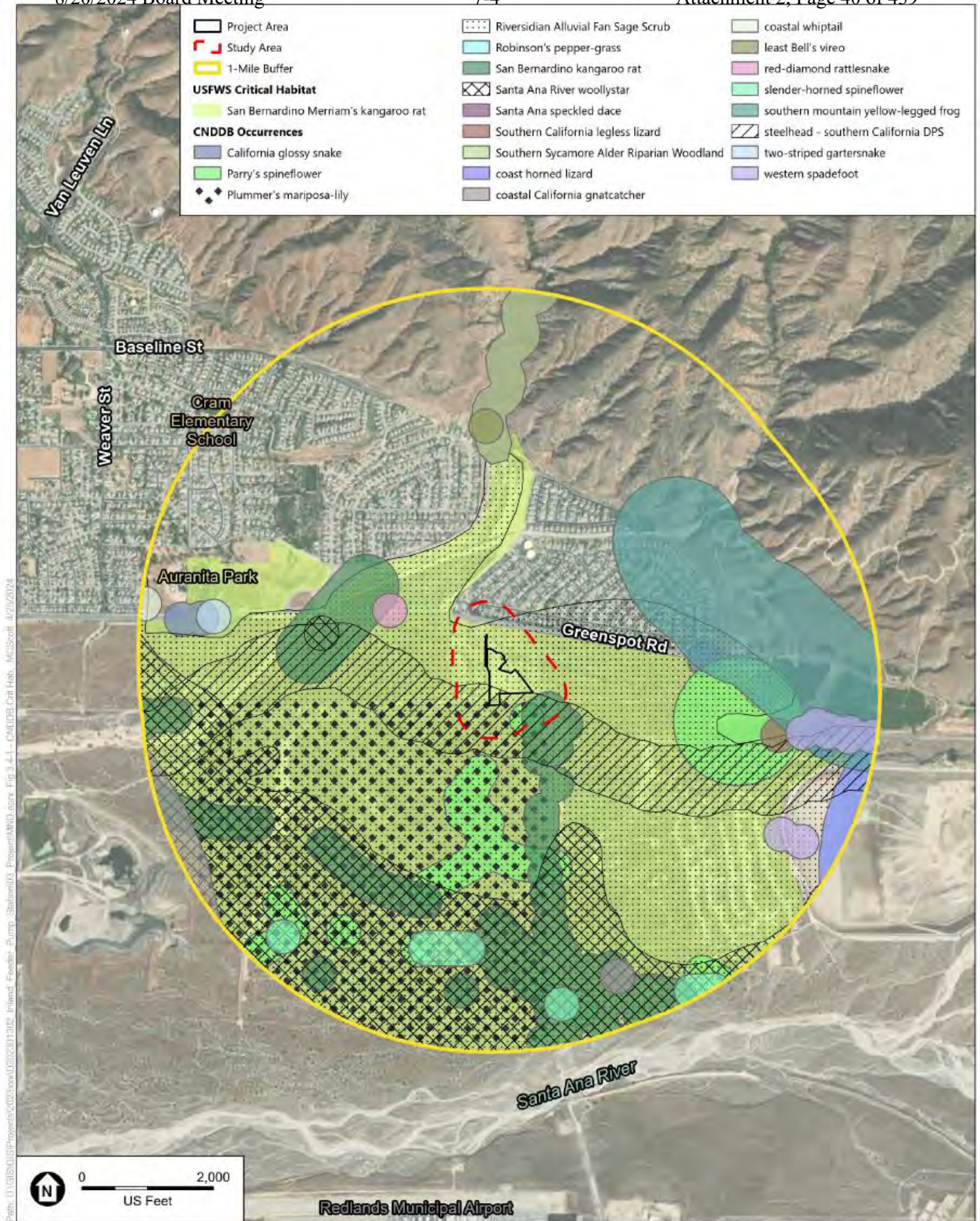
paviflora), filaree (*Erodium* spp.), oat (*Avena* spp.), and bromes (*Bromus* spp.). Common wildlife species detected within the Study Area during the site visit, include Eurasian collared dove (*Streptopelia decaocto*), mourning dove (*Zenaidura macroura*), common raven (*Corvus corax*), house finch (*Haemorrhous mexicanus*), Bewick's wren (*Thryomanes bewickii*), yellow-rumped warbler (*Setophaga coronata*), black phoebe (*Sayornis nigricans*), California towhee (*Melospiza crissalis*), and white-crowned sparrow (*Zonotrichia leucophrys*). Additionally, two listed and two non-listed special-status wildlife species were present during the site assessment or previous studies conducted within the Study Area: coastal California gnatcatcher (*Poliophtila californica californica*; federally threatened [FT], CDFW species of special concern [SSC]); San Bernardino kangaroo rat (*Dipodomys merriami parvus*; federally endangered [FE], state endangered [SE], SSC); coastal western whiptail (*Aspidoscelis tigris* ssp. *stejnegeri*; SSC); and northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*; CDFW special animal [SA]).

Special-Status Plant and Wildlife Species with Potential to Occur

Special-status species are legally protected under the state and federal ESAs or other regulations or are considered sufficiently rare by the scientific community to qualify for such listing. These species are classified under the following categories:

- Species listed or proposed for listing as threatened or endangered or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA.
- Species that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A, and 2B plants) in California.
- Plants considered by the CNPS to be plants about which more information is needed and plants of limited distribution (Rank 3 and 4 plants) that may be significant locally and are recommended for consideration under CEQA.
- Plants listed as rare under the California Native Plant Protection (Fish and Game Code 1900 et seq.).
- Wildlife designated by CDFW as species of special concern, CDFW Watch List species, or have a state rank of S1-S3 on CDFW's Special Animals List (CNDDDB 2024).
- Wildlife "fully protected" in California (Fish and Game Code [FGC] Sections 3511, 4700, and 5050).
- Bird species protected by the MBTA.
- Bat species considered priority by the Western Bat Working Group (WBWG).

A query of the CDFW California Natural Diversity Database (CNDDDB), the CNPS Inventory of Rare and Endangered Plants, and the USFWS Information for Planning and Consultation Online System was conducted to identify special-status species that have been previously recorded in the Redlands USGS 7.5-minute quadrangle and eight surrounding quadrangles including San Bernardino North, Harrison Mtn, Keller Peak, Yucaipa, El Casco, Sunnymead, Riverside East, and San Bernardino South. A list of plant and wildlife species detected during biological studies conducted by ESA in 2023 are provided in the respective technical report in Appendix C. A map depicting the results of the CNDDDB and USFWS Critical Habitat database queries is provided in Appendix C and shown on Figure 3.4-1 (CDFW 2023a, USFWS 2023a).



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Figure 3.4-1
CNDDDB and Critical Habitat Map

The potential for special-status wildlife species to occur within the Study Area is based on vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges.

- **Low Potential:** The Study Area supports limited habitat for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent.
- **Moderate Potential:** Marginal habitat for a particular species may exist. For example, the habitat may be heavily disturbed and/or may not support all stages of a species' life cycle; or may not fit all preferred habitat characteristics; however, still supports important components, such as a particular soil or community type.
- **High Potential:** The Study Area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate vicinity.
- **Present:** The species was observed within the Study Area during the biological resources assessment.

Special-Status Plants

Based on the condition of the vegetation and habitats that were characterized during the site visit, it was determined that five special-status plant species have a moderate or high potential to occur within the California buckwheat – brittle bush scrub habitat within the proposed Project Area, as well as within the natural communities within the surrounding Study Area: Plummer's mariposa lily (*Calochortus plummerae*; California Rare Plant Rank [CRPR] 4.2), Parry's spineflower (*Chorizanthe parryi* var. *parryi*; CRPR 1B.1), slender-horned spineflower (*Dodecahema leptoceras*; FE, SE, CRPR 1B.1), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*; FE, SE, CRPR 1B.1), and Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*; CRPR 4.3) (Appendix C). All of these species have the potential to occur within the coastal sage scrub and chaparral habitats mapped within the Study Area (i.e., brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, disturbed chamise chaparral – brittle bush scrub, and hairy yerba santa scrub). Additionally, Plummer's mariposa lily has the potential to occur within the annual grasses and forbs habitat mapped in the Study Area.

Special-Status Wildlife

In addition to the four special-status wildlife species observed within the Study Area (coastal California gnatcatcher, San Bernardino kangaroo rat, coastal western whiptail, and northwestern San Diego pocket mouse), a total of 16 special-status wildlife species were determined to have a moderate to high potential to occur within the Study Area, including: Crotch bumble bee (*Bombus crotchii*; state candidate as endangered [SCE]), western spadefoot (*Spea hammondi*; federal candidate as threatened [FCT], SSC), Southern California legless lizard (*Anniella stebbinsi*; SSC), California glossy snake (*Arizona elegans occidentalis*; SSC), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*; CDFW watch list [WL]), red-diamond rattlesnake (*Crotalus ruber*; SSC), coast horned lizard (*Phrynosoma blainvillii*; SSC), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; WL), Bell's sparrow (*Artemisiospiza belli belli*; WL), burrowing owl (*Athene cunicularia*; USFWS birds of conservation concern [BCC], SSC), California horned lark (*Eremophila alpestris actia*; WL), loggerhead shrike (*Lanius ludovicianus*; SSC), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*; SA), San Diego desert

woodrat (*Neotoma lepida intermedia*; SSC), southern grasshopper mouse (*Onychomys torridus ramona*; SSC), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*; SSC) (Appendix C).

Critical Habitat

Pursuant to Section 4(a)(3) and (b)(2) of the FESA, the USFWS is required to designate critical habitat for endangered and threatened species to the extent feasible. Critical habitat includes areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species, and is defined as (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (PCEs; physical and biological features) essential to the conservation of the species; thus, warranting special management consideration or protection, and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter that are essential to the survival and recovery of the species, whether the habitat is currently occupied by the species or not. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types.

The entire proposed Project Area and the majority of the Study Area, aside from the residential development to the north, is located within designated Critical Habitat Unit 1 (Santa Ana River Wash) for San Bernardino kangaroo rat (USFWS 2023a, 2008). The California buckwheat – brittle bush scrub habitat within the proposed Project Area, as well as the brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral-hairy yerba santa scrub, and disturbed chamise chaparral – hairy yerba santa scrub habitats within the surrounding Study Area provide suitable habitat for San Bernardino kangaroo rat.

Wildlife Movement

Migration corridors are navigable pockets or strips of land that connect larger tracts of open space together, allowing them to function as a greater habitat complex. These “passages” can exist on a small scale, allowing wildlife to pass through or under an otherwise uninhabitable area including a roadway, housing development, or city through drainage culverts, green belts and waterways; or on a larger scale, providing an opportunity for wildlife to skirt large topographical features (e.g., mountains, lakes, streams) by utilizing adjacent canyons, valleys and upland swaths when migrating.

The majority of the developed portion of the proposed Project Area is bordered by chain-link fencing. Rural residential development surrounds the proposed Project Area to the north, east, and west, likely deterring wildlife movement through the proposed Project Area. The land surrounding the proposed Project Area to the south is undeveloped land in which wildlife likely utilizes to forage and breed, and to some extent, travel locally and regionally. Numerous species of birds, reptiles, invertebrates, and small mammals would be expected in the Study Area, as well as larger mammals such as the coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and grey fox (*Urocyon cinereoargenteus*), who likely utilize the area for hunting and movement. While the proposed Project Area provides some refuge for wildlife, it does not provide linkages to other habitats and is not expected to function as an important migration corridor.

Aquatic Features

Although a formal aquatic resources delineation was not conducted as part of the biological field reconnaissance, five aquatic resource features (Features 1 through 5) were identified within the Study Area (Figure 3.4-2) (Appendix C). Only one feature, Feature 1, occurs within the proposed Project Area, the remaining four aquatic resource features identified during the site visit occur within the surrounding Study Area, outside of the proposed Project Area. None of these features support wetland and/or riparian habitat.

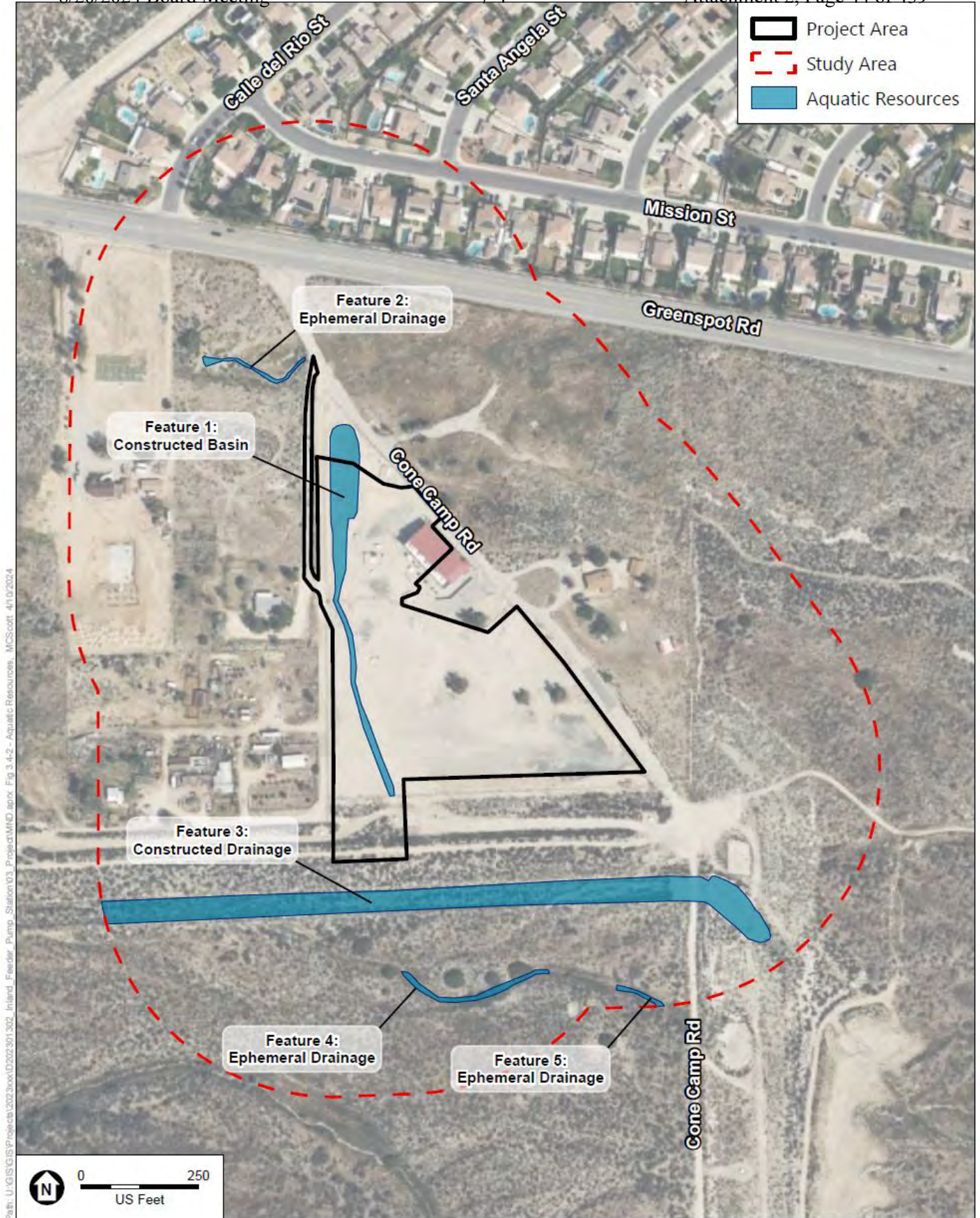
Feature 1: Constructed Basin. Feature 1 consists of a constructed basin and ephemeral drainage located within the western portion of the proposed Project Area. This feature is unvegetated and situated in an upland area. The drainage appears to capture surface water runoff flowing from the existing road that runs from south to north across Metropolitan's fee parcel. This road appears to capture surface water runoff flowing from the existing access road and functions as an unintended stormwater pathway due to its regular use. As a result, concentrated stormwater flows along the road, ultimately draining northward into the constructed basin located on the northwestern extent of the proposed Project Area.

Feature 2: Ephemeral Drainage. Feature 2 is an ephemeral drainage located within the northern portion of the Study Area just west of the northernmost corner of the proposed Project Area and is dominated by upland vegetation (California buckwheat – brittle bush scrub). This drainage receives and captures surface water runoff from the surrounding landscape and flows westward for approximately 245 feet before dissipating into the ground. Surface flows are confined to the Study Area due to higher elevations on the neighboring property, which acts as a natural barrier preventing the flow from continuing or connecting with any other aquatic features downstream.

Feature 3: Constructed Drainage. Feature 3 is a constructed drainage within the southern portion of the Study Area (south of the proposed Project Area and north of Features 4 and 5). It is dominated by upland vegetation including California buckwheat – brittle bush scrub, with an individual sandbar willow (*Salix exigua*) and a couple of mulefat (*Baccharis salicifolia*) individuals identified within the eastern portion of the drainage. The constructed drainage is located in an upland area and receives flows through a culvert located at the easternmost extent of the feature where it is connected to a large, constructed basin located outside of the Study Area. The water travels east to west through the constructed drainage during high flows, and converges with Plunge Creek approximately 0.67 mile west of the Study Area, and ultimately connecting to the Santa Ana River west of I-210.

Feature 4: Ephemeral Drainage. Feature 4 is an ephemeral drainage located within the southern portion of the Study Area and outside of the proposed Project Area. This ephemeral drainage is comprised of upland vegetation, specifically chamise chaparral-hairy yerba santa scrub. Feature 4 dissipates into the ground at its western extent and does not appear to connect with any other aquatic features at its downstream extent.

Feature 5: Ephemeral Drainage. Feature 5 is an ephemeral drainage located within the southern portion of the Study Area and outside of the proposed Project Area. It contains upland vegetation, specifically hairy yerba santa scrub. Based on aerial review, Features 4 and 5 appear to have once formed a single, ephemeral aquatic feature. However, recent disturbances in the area have caused a separation, severing the connection between them. Consequently, due to the surrounding higher elevation, drainage from this feature dissipates into the ground at its western extent.



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 3.4-2
Aquatic Resources

ANALYSIS OF IMPACTS

- 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 or U.S. Fish and Wildlife Service?*

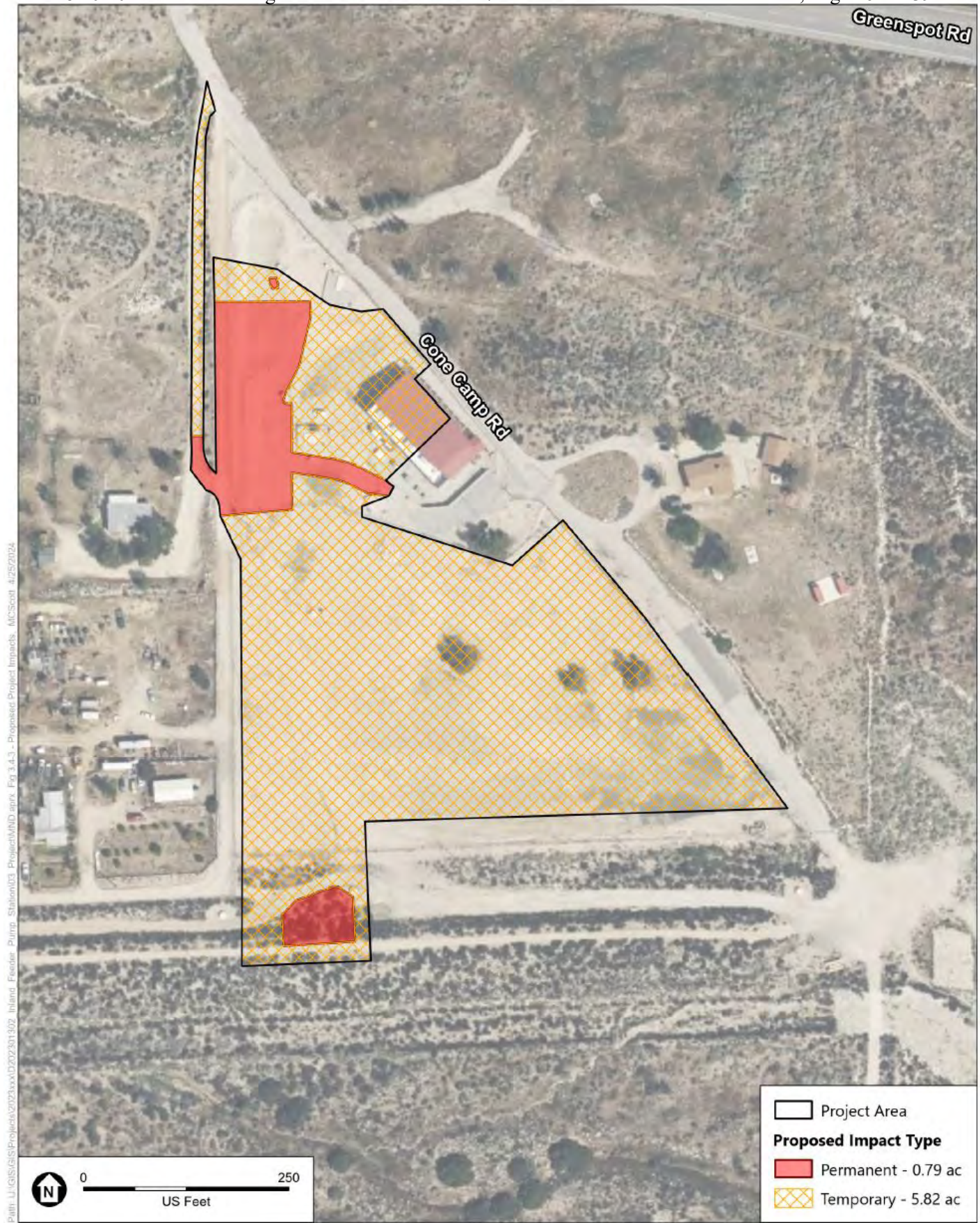
Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Special-Status Plants

The proposed Project would result in 5.82 acres of total temporary and 0.79 acre of total permanent impacts within the Project Area (Figure 3.4-3). The Study Area provides suitable habitat for five special-status plant species, including Parry's spineflower (CRPR 1B.1), Plummer's mariposa lily (CRPR 4.2), Robinson's pepper-grass (CRPR 4.3), Santa Ana River woollystar (FE, SE, CRPR 1B.1), and slender-horned spineflower (FE, SE, CRPR 1B.1) (Appendix C). While these five special-status plants have the potential to occur within the coastal sage scrub and chaparral habitats mapped in the Study Area (i.e., brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, disturbed chamise chaparral – brittle bush scrub, and hairy yerba santa scrub), Plummer's mariposa lily also has the potential to occur within the annual grasses and forbs habitat mapped in the Study Area.

The proposed Project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat within the Project Area. In areas where excavation and soil disturbance would occur within the proposed Project Area, direct or indirect impacts to special-status plants or their seed banks could occur. Direct impacts could result from vegetation removal and soil disturbance, while indirect impacts could result from increased fugitive dust, erosion, increased run-off, trampling of vegetation outside of construction areas, and/or introduction of invasive plants.

Metropolitan would implement Standard Practices, as outlined in Appendix A, which requires that environmental permits be attained prior to construction, construction activities remain within designated construction limits, construction staff are trained of potential special-status biological resources prior to construction, hazardous materials are contained, implementation of best management practices, and compliance with requirements of the General Construction Activity Stormwater Permit issued by the State Water Resources Control Board (which outlines measures to control stormwater runoff and erosion, thereby minimizing potential indirect impacts on nearby vegetation from increased runoff or erosion). Implementation of **Mitigation Measure BIO-2**, requiring focused plant surveys and the preparation and implementation of a dedicated salvage, seed collection, and replanting plan if special-status plants are observed on-site would avoid and/or minimize impacts to special-status plants. Implementation of **Mitigation Measure BIO-3**, outlining mitigation replacement requirements, would further reduce potential impacts to special-status plants to less than significant. Therefore, impacts to special-status plants would be less than significant with mitigation incorporated.



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 3.4-3
Proposed Project Impacts

Special-Status Wildlife

While the proposed Project Area is compacted and surrounded by graded roads, providing limited suitable habitat to support special-status wildlife species, the surrounding Study Area supports and provides potentially suitable habitat for special-status wildlife species (Appendix C). Two listed and two non-listed special-status wildlife species were present during the site assessment conducted in 2023 or previous studies conducted within the Study Area: coastal California gnatcatcher (FT, SSC); San Bernardino kangaroo rat (FE, SE, SSC); coastal western whiptail (SSC); and northwestern San Diego pocket mouse (SA). Although not observed on-site during the site assessment or during previous studies, the Study Area also provides suitable habitat to support an additional 16 special-status wildlife species including: Crotch bumble bee (SCE); western spadefoot (FCT, SSC); Belding's orange-throated whiptail (WL); California glossy snake (SSC); coast horned lizard (SSC); red-diamond rattlesnake (SSC); Southern California legless lizard (SSC); Bell's sparrow (WL); burrowing owl (BCC, SSC); California horned lark (WL); loggerhead shrike (SSC); Southern California rufous-crowned sparrow (WL); Los Angeles pocket mouse (SSC); San Diego black-tailed jackrabbit (SA); San Diego desert woodrat (SSC); and southern grasshopper mouse (SSC). Special-status wildlife species and/or their habitat within proposed construction areas (i.e., excavation, trenching, material installation, and grading) would be subject to direct impacts such as vegetation removal, soil disturbance, and potential injury to individuals. Additionally, special-status wildlife species located near direct impact areas could potentially be subject to indirect impacts including increased noise, vibration, human activity, erosion, and fugitive dust. These factors could temporarily disrupt wildlife behavior and/or damage suitable habitat for these species. Impacts and mitigation for special-status wildlife species are discussed in greater detail below.

Nesting and Foraging Birds/Raptors and Special-Status Birds

Six special-status avian species (Bell's sparrow, burrowing owl, California horned lark, coastal California gnatcatcher, loggerhead shrike, and Southern California rufous-crowned sparrow) were present or have a moderate or high potential to nest and/or forage within the Study Area. Suitable habitat for these species occurs within the annual grasses and forbs, brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral-hairy yerba santa scrub, disturbed chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover type, within the Study Area. The proposed Project Area is heavily compacted and provides very limited suitable foraging habitat along its southern boundary. Additionally, there is ample, suitable foraging habitat present in the surrounding area, which would not be impacted by the proposed Project activities. Thus, the temporary loss of up to 0.25 acre and permanent loss of up to 0.12 acre of potentially suitable foraging habitat due to the proposed Project activities is not considered a likely adverse impact to Bell's sparrow, California horned lark, loggerhead shrike, and Southern California rufous-crowned sparrow if present during construction. Coastal California gnatcatcher and burrowing owl have additional requirements and are discussed in detail below. In addition, Metropolitan would implement Standard Practices (Appendix A), such as limiting the area of disturbance. Impacts to foraging habitat for Bell's sparrow, California horned lark, loggerhead shrike, and Southern California rufous-crowned sparrow would be less than significant.

The Study Area provides suitable nesting habitat for a variety of native resident and migratory bird and raptor species protected under the federal Migratory Bird Treaty Act of 1918 (MBTA) and Sections 3503.5, 3505, and 3511 of the California Fish and Game Code, including the special-status avian species mentioned

above (Appendix C). The proposed Project (i.e., vegetation removal and construction activities) may result in direct and/or indirect impacts to these migratory bird and raptor species through the removal of active nests or disruption of breeding/nesting behavior, such as copulation, nest building, or incubation if present during construction activities. Implementation of Metropolitan's Standard Practices outlined in Appendix A requires a Worker Environmental Awareness Program (WEAP) training and clear demarcation of proposed Project limits, and implementation of best management practices during proposed Project construction. In addition, implementation of **Mitigation Measure BIO-1**, requiring prevention of inadvertent entrapment, and **Mitigation Measure BIO-4**, requiring the implementation of a preconstruction nesting bird survey and establishment of an avoidance buffer around active nests, would ensure that impacts to nesting birds would be avoided and/or minimized. Therefore, impacts to nesting birds and raptors would be less than significant.

Coastal California Gnatcatcher

As determined in the Biological Resources Report (Appendix C), the Study Area supports suitable coastal sage scrub habitat for coastal California gnatcatcher. A coastal California gnatcatcher individual was visually and audibly identified approximately 250 feet south of the proposed Project Area within the California buckwheat – brittle bush scrub habitat in the southern portion of the Study Area during the site visit and has the potential to nest and/or forage within suitable coastal sage scrub habitat (i.e., brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral-hairy yerba santa scrub, disturbed chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats) within the Study Area. While the proposed Project Area contains limited coastal sage scrub habitat (e.g., California buckwheat – brittle bush scrub habitat) suitable for coastal California gnatcatcher, impacts to this habitat could be significant if occupied. Ground disturbance and vegetation removal activities may result in “take” of this species through the disruption of breeding/nesting behavior (such as copulation, nest building, or incubation) and through the removal of occupied habitat for this species. Metropolitan would implement its Standard Practices as outlined in Appendix A, which requires obtaining required permits prior to construction, delineation of construction boundaries, implementation of best management practices, and WEAP training during proposed Project construction. Implementation of **Mitigation Measure BIO-1**, requiring prevention of inadvertent entrapment, and **Mitigation Measure BIO-4**, requiring a preconstruction nesting bird survey, would avoid and/or minimize impacts. In addition, implementation of **Mitigation Measure BIO-3**, outlining mitigation replacement requirements, would further reduce potential direct and indirect impacts to coastal California gnatcatcher to a less than significant level. Therefore, impacts to coastal California gnatcatcher would be less than significant with mitigation incorporated.

Crotch Bumble Bee

Crotch bumble bee has the potential to forage and/or nest within the California buckwheat – brittle bush scrub habitat in the southern portion of the proposed Project Area and may use all the natural communities, aside from the disturbed and developed land cover types, for nesting and foraging within the remainder of the Study Area. Ground disturbance and vegetation clearing activities may result in direct and indirect impacts to this species through the removal of the species' preferred plants for nectaring and removal of nest burrows. Metropolitan would implement Standard Practices as outlined in Appendix A, which provides general avoidance and minimization measures, including the development and implementation of a WEAP, demarcation of proposed Project limits, and best management practices. Implementation of **Mitigation**

Measure BIO-5, which requires conducting preconstruction surveys and includes restoration requirements, would avoid and/or minimize impact. In addition, implementation of **Mitigation Measure BIO-3**, which outlines mitigation replacement requirements, would reduce potential impacts to Crotch bumble bee to less than significant. Therefore, impacts to Crotch bumble bee would be less than significant with mitigation incorporated.

Western Spadefoot

Western spadefoot may use small mammal burrows within the California buckwheat – brittle bush scrub habitat in the southern portion of the proposed Project Area and all the natural communities, aside from the disturbed and developed land cover types, for aestivating and foraging within the remainder of the Study Area. This species is not expected to use the proposed Project Area for breeding since it is disturbed and there are limited suitable breeding pools present. If present, ground disturbance and vegetation clearing activities may result in direct impacts to aestivating toads. Potential indirect impacts from human presence, noise, and/or ground vibration generated by heavy equipment or adjacent construction activities may affect western spadefoot toads. Metropolitan would implement their Standard Practices as outlined in Appendix A, which provides general avoidance and minimization measures, demarcation of proposed Project limits, hazardous waste containment, and hydrologic requirements, along with the implementation of preconstruction clearance surveys. In addition, implementation of **Mitigation Measure BIO-1**, requiring prevention of inadvertent entrapment, and **Mitigation Measure BIO-6**, requiring avoidance/exclusion measures, monitoring, and relocation, would avoid and/or minimize impacts. Therefore, impacts to western spadefoot would be less than significant.

San Bernardino Kangaroo Rat

The Study Area supports potentially occupied San Bernardino kangaroo habitat and occurs within designated critical habitat (Critical Habitat Unit 1: Santa Ana River Wash) for San Bernardino kangaroo rat (Appendix C). San Bernardino kangaroo rat was identified within the southern portion of the proposed Project Area during a protocol-level presence/absence trapping survey conducted for this species within the Study Area in 2022 (ECORP 2022). Additionally, suitable kangaroo rat burrows were mapped in the proposed Project Area in 2023 and kangaroo rat species were identified in the southern portion of the proposed Project Area during a nighttime small mammal activity survey conducted in 2023 (ESA 2023a, 2023b). Thus, San Bernardino kangaroo rat may burrow, forage, and breed within the brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and disturbed chase chaparral – hairy yerba santa scrub habitats within the Study Area, including the California buckwheat – brittle bush scrub habitat within the southern portion of the proposed Project Area. Ground disturbance and vegetation removal activities may result in “take” of this species through the removal of a nest or burrows, injury, or mortality. Indirect impacts may result from human presence, ground vibration and noise generated by heavy equipment, increased predation, and artificial lighting.

Metropolitan would implement their Standard Practices outlined in Appendix A, including obtaining all required permits prior to construction, the development and implementation of a WEAP, demarcation of proposed Project limits, best management practice, and lighting restrictions, which would reduce impacts to San Bernardino kangaroo rat. Additionally, the implementation of **Mitigation Measure BIO-1**, requiring prevention of inadvertent entrapment, **Mitigation Measure BIO-3**, establishing mitigation requirements for impacts to listed species, **Mitigation Measure BIO-7**, requiring pre-construction presence/absence

trapping surveys, **Mitigation Measure BIO-8**, requiring implementation of exclusionary fencing, and **Mitigation Measure BIO-9**, requiring San Bernardino kangaroo rat monitoring, would reduce potential impacts to San Bernardino kangaroo rat to less than significant. Therefore, impacts to San Bernardino kangaroo rat would be less than significant with mitigation incorporated.

Special-Status Ground Dwelling Wildlife

Belding's orange-throated whiptail, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, Southern California legless lizard, and southern grasshopper mouse may occupy annual grasses and forbs, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and/or hairy yerba santa scrub habitat, including disturbed areas, of the proposed Project Area and surrounding Study Area. Although the proposed Project Area is heavily compacted and provides very limited suitable habitat for these species along its southern boundary, the proposed Project may result in direct impact to these species through injury or mortality or the removal of a nest burrow/den. Indirect impacts may result from human presence, ground vibration and noise generated by heavy equipment, and increased predation. Metropolitan would implement their Standard Practices outlined in Appendix A, including the development and implementation of a WEAP, demarcation of proposed Project limits, containment of hazardous materials, best management practices, and lighting restrictions, which would reduce impacts to special-status ground dwelling wildlife. In addition, **Mitigation Measure BIO-1**, requiring prevention of inadvertent entrapment, and **Mitigation Measure BIO-10**, requiring preconstruction survey and trapping/relocation methods, would avoid and/or minimize potential impacts to special-status ground dwelling wildlife species. Therefore, impacts to special-status ground dwelling wildlife species would be less than significant.

Burrowing Owl

No burrowing owls were observed within the Study Area during the site assessment conducted in 2023 or previous studies conducted within the Study Area. However, focused burrowing owl surveys were not conducted, and suitable foraging and nesting habitat is present throughout the annual grasses and forbs and disturbed scrub habitats within the Study Area. Suitable ground squirrel burrows were observed but lacked burrowing owl sign (i.e., freshly excavated dirt, prey remains, whitewash, or nest material). This species has been previously observed in the San Bernardino International Airport approximately 4.1 miles west of the proposed Project Area (CNDDDB 2023a). If present, breeding or wintering burrowing owls may be impacted by direct injury or mortality or indirectly affected from human presence or ground vibration and noise generated by heavy equipment. The implementation of Metropolitan's Standard Practices outlined in Appendix A, including the development and implementation of a WEAP, demarcation of proposed Project limits, construction monitoring, and implementation of best management practices, on-site overnight storage requirements, trash/debris removal, and maintaining required speed limits, would reduce potential impacts to burrowing owl. Additionally, implementation of **Mitigation Measure BIO-1**, requiring prevention of inadvertent entrapment and **Mitigation Measure BIO-11**, requiring preconstruction surveys and monitoring, would avoid and/or minimize potential impacts to burrowing owl. Therefore, impacts to burrowing owl would be less than significant.

Additionally, as discussed in Appendix A, the Project Contractor(s) would be required to comply with Metropolitan Standard Practices for related biological resources, including standard practices for applicable avoidance and minimization requirements (i.e., WEAP trainings, hazardous material containment, and

lighting restrictions). In addition, implementation of **Mitigation Measures BIO-1** through **BIO-11** would reduce potential impacts to special-status species to less than significant. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

BIO-1: Prevention of Inadvertent Entrapment. To prevent inadvertent entrapment of common and special-status wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with tarp, plywood or similar materials at the close of each working day and shall be inspected visually to confirm animals would be excluded, to prevent animals from being trapped. Ramps may be constructed of earth fill or wooden planks within deep walled trenches to allow animals to escape, if necessary. Before such holes or trenches are backfilled, they should be thoroughly inspected for trapped animals. If trapped wildlife is observed, escape ramps or structures will be installed immediately to allow escape.

BIO-2: Special-Status Plants. Prior to construction activities that could potentially remove special-status plants, a qualified botanist shall conduct a pre-construction floristic inventory and focused rare plant survey to determine and map the location and extent of special-status plant species populations within disturbance areas within suitable habitat. This survey shall occur during the typical blooming periods of special-status plants with the potential to occur: Parry's spineflower (*Chorizanthe parryi* var. *parryi*; CRPR 1B.1; blooming period April – June), Plummer's mariposa lily (*Calochortus plummerae*; CRPR 4.2; blooming period May – July), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*; CRPR 4.3; blooming period January – July), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*; FE, SE, CRPR 1B.1; blooming period April – September), and slender-horned spineflower (*Dodecahema leptoceras*; FE, SE, CRPR 1B.1; blooming period April–June). The plant survey shall follow the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018).

If special-status plants are not identified within the proposed Project Area, then ground-disturbing activities may commence. If special-status plants are detected and Project-related impacts are unavoidable, then the preparation and implementation of a special-status species salvage, seed collection, and replanting plan would be required, and consultation with the regulatory agencies would be required to address potential take of listed plant species. The salvage, seed collection, and replanting plan shall include measures to salvage, collect seed, replant, and monitor the disturbance area until native vegetation is re-established.

Pre-construction special-status plant surveys are scheduled to be conducted in 2024. If construction does not begin by 2027, a qualified botanist shall conduct an additional pre-construction floristic inventory and focused rare plant survey in accordance with the guidance above during the appropriate blooming period the year prior to the commencement of proposed Project activities.

BIO-3: Compensation for Impacts to Federally and State-Listed Plant and Wildlife Species Habitat. Direct temporary and permanent impacts to suitable habitat for federally or state-listed species shall be mitigated through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies.

Temporary Impacts. Mitigation for direct temporary impacts to suitable habitat for federally or state-listed species shall be provided through on-site restoration. Areas temporarily impacted shall be returned to similar conditions to those that existed prior to grading and/or ground-disturbing activities.

Permanent Impacts. Metropolitan shall purchase credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies to compensate for all permanent loss of suitable habitat for federally or state-listed species (including critical habitat), if available, at a 1:1 ratio.¹⁰

BIO-4: Nesting Birds/Raptors and Special-Status Birds. Proposed Project activities could negatively impact nesting birds that are protected in accordance with the MBTA and FGC, as well as other special-status avian species, such as the Bell's sparrow, burrowing owl, California horned lark, coastal California gnatcatcher, loggerhead shrike, and Southern California rufous-crowned sparrow. No physical disturbance of vegetation, operational structures, buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the MBTA and FGC shall occur in the breeding season, except as necessary to respond to public health and safety concerns, or otherwise authorized by the Engineer. The breeding season extends from February 15 through August 31 for passerines and general nesting and from January 1 through August 31 for raptors.

- If nesting habitat (including annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover types within the Study Area) must be cleared or proposed Project activities must occur within 500 feet of nesting habitat within the breeding season as defined above, a qualified biologist shall perform a nesting bird survey no more than three days prior to clearing or removal of nesting habitat or start of proposed Project activities. Surveys will be performed in all Metropolitan accessible areas (fee property and easements) and inaccessible areas will be visually surveyed to their full extent without trespassing.
- If active nests for sensitive species, raptors and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures, as appropriate, shall be established, as identified by a qualified biologist and approved by the Engineer. Construction avoidance buffers are generally 300 feet for non-listed passerines and 500 feet for listed avian species (i.e., coastal California gnatcatcher) and raptors; however, avoidance buffers may be modified at the discretion of the biologist, depending on the species, location of the nest and species tolerance to human presence and construction-related noises and vibrations. The buffer shall be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing shall not be conducted within this zone until the young have fledged and are no longer reliant on the nest.
- Additional measures may include (but are not limited to): construction avoidance until the nest is no longer active, noise attenuation measures to reduce construction noise levels to below 60 dBA Leq (an hourly measurement of A-weighted decibels) or ambient (if existing ambient levels are above 60 dBA), and biological monitoring during construction activities to ensure the species is not harmed during proposed Project implementation.
- A qualified biologist shall monitor active nests or nesting bird habitat within or immediately adjacent to the proposed Project construction areas, and the Engineer shall provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds.

¹⁰ Any 'take' of federally listed species' occupied habitat shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal Endangered Species Act (ESA) of 1973, as amended. Additionally, direct impacts to federally designated critical habitat that cannot be avoided shall be addressed through either the ESA Section 7 or Section 10(a)(1)(B) process. Any 'take' of state-listed species shall be addressed through the California Fish and Game Code Section 2081(b) incidental take permit process. The two permits and authorization by the agencies with jurisdiction over these resources may require additional measures (e.g., avoidance, conservation, etc.) beyond what is being proposed under this CEQA analysis.

BIO-5: Crotch Bumble Bee. If removal of suitable Crotch bumble bee foraging and/or nesting habitat within the California buckwheat – brittle bush scrub is required, the following measures shall be implemented:

- A qualified entomologist familiar with the species' behavior and life history shall conduct surveys to determine presence/absence of the Crotch bumble bee within the year prior to vegetation removal and/or grading in areas that provide suitable habitat for this species. A minimum of three surveys, ideally 2-4 weeks apart, should also be conducted during peak flying season when the species is most likely to be detected above ground, between March 1 to September 1 and during peak bloom of nectaring resources (Thorp et al. 1983; CDFW 2023c). At minimum, a survey report should provide the following:
 - A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch bumble bee.
 - Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched.
 - Map(s) showing the location of nests/colonies.
 - A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).
- If Crotch bumble bee is detected, the qualified entomologist should identify the location of all nests within and adjacent to the proposed Project Area. A 15-meter (50-foot) no disturbance buffer zone should be established around any identified nest(s) to reduce the risk of disturbance or accidental take. A qualified entomologist should expand the buffer zone as necessary to prevent disturbance or take.
- If Crotch bumble bee impacts cannot be feasibly avoided, Metropolitan would obtain appropriate take authorization from CDFW (pursuant to FGC, § 2080 et seq), and replace habitat at a 1:1 ratio, or as determined in consultation with CDFW.

BIO-6: Western Spadefoot. Although limited suitable breeding habitat is present within the constructed basin and associated drainage located in the proposed Project Area, proposed Project activities could negatively impact suitable western spadefoot upland habitat, including all of the natural communities and excluding the disturbed and developed land cover, within the small mammal burrows located in the proposed Project Area. Therefore, the following measures are required to avoid impacts to this species.

- A qualified biologist shall survey areas of suitable habitat for western spadefoot in the proposed Project Area, including ruts, small pools, and the constructed basin and associated drainage. The survey shall be conducted during the active season of western spadefoot (which corresponds with the rainy season).
- If surveys result in the observation of western spadefoot within proposed Project Area, observed individuals and/or eggs shall be removed from proposed Project Area and be relocated to pre-determined suitable habitat in an appropriate area that will not be impacted.
- For work during the western spadefoot toad migration and breeding season (November 1 to May 31), a qualified biologist will survey the active work areas (including access roads) in the

mornings following measurable precipitation events. Construction may commence upon confirmation from the biologist that no western spadefoot toads are in the work area.

- When feasible, a 50-foot avoidance buffer will be maintained around burrows that provide suitable upland habitat for western spadefoot toad, as identified by a qualified biologist. The biologist will delineate and mark the no-disturbance buffer.
- If western spadefoot toad is found within the construction footprint, it will be allowed to move out of harm's way on its own accord or a qualified biologist will relocate it to the nearest suitable burrow outside of the construction impact area.
- Prior to beginning work, a qualified biologist will inspect underneath equipment and stored pipes greater than 1.2 inches (3 cm) in diameter for western spadefoot toad. If found, they will be allowed to move out of the construction area on their own accord.

BIO-7: San Bernardino Kangaroo Rat Pre-Construction Presence/Absence Trapping Surveys. Prior to ground disturbing activities within areas with potential habitat for SBKR or other sensitive small mammals, a qualified SBKR biologist with a required Section 10(a) permit will conduct pre-construction presence/absence trapping surveys. These surveys will follow protocols and trapping methods approved by the regulatory agencies to determine the presence/absence of SBKR and other sensitive small mammals on-site.

- If pre-construction presence/absence trapping surveys within the Stage 1 area are negative, then exclusionary fencing (Mitigation Measure BIO-8) will be installed.
- If results from the trapping surveys demonstrate that SBKR are present within the Stage 1 proposed Project Area, an ITP will need to be obtained. Construction within occupied habitat areas will not proceed until appropriate authorization (i.e., FESA and/or CESA Incidental Take Permit (ITP) is obtained.
- Stage 2 construction will not commence until appropriate authorization (i.e., FESA and/or CESA ITP) is obtained. Implementation of protection measures and compensatory mitigation for SBKR, in addition to those identified in this document, will be required as conditions of federal and state take permits.

BIO-8: San Bernardino Kangaroo Rat Exclusionary Fencing. Exclusionary fencing will be erected in construction areas with potential to be occupied by SBKR or containing kangaroo rat sign (e.g., burrows, scat, tail drag, or dust baths) as determined by a preconstruction survey conducted by a qualified biologist.

- A qualified biologist or approved biological monitor will be present on-site when the fence is installed to minimize disturbance of SBKR burrows from fence installation.
- The integrity of the fencing will be checked by a qualified biologist at the end of each workday. Any gaps will be repaired immediately.
- Construction access openings will be closed and secured at the end of each workday using the at-grade fencing method.
- The fence will remain in place for the duration of construction activities and removed at the completion of the relevant proposed Project activity.
- Stage 1 exclusionary fencing will be installed at grade to minimize the risk of unauthorized take.

BIO-9: San Bernardino Kangaroo Rat and General Construction Monitoring.

SBKR Biologist. A qualified biologist or approved biological monitor shall visually inspect trenches and steep-walled holes before the onset of daily construction for presence of SBKR. If SBKR are discovered, the biologist shall supervise the movement or relocation of the equipment until the animal has left the area on its own.

- To the extent feasible, soil stockpiles in SBKR habitat will be located within the construction area inside the exclusionary fence or within the existing facility in areas devoid of vegetation.
- Nighttime work shall be avoided as much as possible. If nighttime work is necessary, all lighting shall be directed exclusively at the work area to avoid areas that support local wildlife movement, such as ephemeral drainages, to the greatest extent practical. Any nighttime lighting shall be shielded downward to avoid light spillage into the surrounding areas.

Limits of Disturbance. Prior to construction in or adjacent to habitats for special-status species, and under the direction of a qualified biologist, Metropolitan shall clearly delineate the construction right-of-way (stake, flag, fence, etc.) that restricts the limits of construction to the minimum necessary to implement the proposed Project.

Biological Monitoring. Prior to the start of construction, Metropolitan shall retain a qualified biological monitor(s) to be on-site during the initial ground disturbance and during construction activities to monitor habitat conditions and impacts. The biological monitor will ensure compliance with mitigation measures and will have the authority to halt or suspend all activities until appropriate corrective measures have been taken. The biological monitor shall be a qualified biologist with species expertise appropriate for the proposed Project.

On-Site Overnight Storage. All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods should be thoroughly inspected for birds and other wildlife before the pipe is subsequently buried, capped, or otherwise used or moved.

BIO-10: Special-Status Ground-Dwelling Wildlife. A qualified biologist shall conduct a preconstruction clearance survey throughout the proposed Project Area. If any special-status ground-dwelling wildlife, protected in accordance with CESA and FGC, such as the Belding's orange-throated whiptail, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, Southern California legless lizard, and southern grasshopper mouse are observed during the survey, a qualified biologist should relocate the individual to suitable habitat adjacent to the proposed Project Area.

BIO-11: Burrowing Owl. Prior to the initiation of any ground disturbing activities within 500 feet of suitable burrowing owl habitat, including all of the natural communities and land cover types within the Study Area, focused surveys for burrowing owl shall be conducted by a qualified biologist throughout the Study Area following the most current CDFW required protocol for the species. If the qualified biologist finds evidence of burrowing owls during the burrowing owl breeding season (February 1 through August 31), all Project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance includes establishment of a minimum 300-foot buffer zone around nests. Construction and other proposed Project-related activities may occur outside of the 300-foot buffer zone. Construction and other proposed Project-related activities may be allowed inside of the

300-foot avoidance buffer during the breeding season if the nest is not disturbed, and the proposed Project activities are monitored by a qualified biologist.

- 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No Impact. No, the proposed Project would not 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 U.S. Fish and Wildlife Service. No riparian habitat or other sensitive natural communities have been identified within the Study Area (Figure 3.4-2). Feature 1, comprised of an unvegetated constructed basin and ephemeral drainage/roadway, occurs along the western extent of the proposed Project Area, and four additional Features (2 through 5) comprised of three ephemeral drainages, and a constructed drainage occur within the Study Area (outside of the proposed Project Area). However, these aquatic features do not support riparian vegetation. While the Study Area is mapped by CNDDB as occurring within Riversidean alluvial fan sage scrub habitat with a State rank of S1.1, the Riversidean alluvial fan sage scrub habitat indicator species, scale broom (*Lepidospartum squamatum*), was not observed as a dominant species within any of the observed natural communities (Figure 3.4-4). Only one scale broom individual was observed within the Study Area. As a result, no natural communities present within the Study Area or proposed Project Area meet the criteria for Riversidean alluvial fan sage scrub and there are no other sensitive natural communities within the Study Area based on a review of CDFW's California Sensitive Natural Communities List. Therefore, no impact to riparian habitat or other sensitive natural community would occur.

- 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?*

No Impact. No, the proposed Project would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Five features (Features 1, 2, 3, 4, and 5) were identified in the Study Area. No state or federally protected wetlands were identified within the Study Area.

Features 2, 3, 4, and 5 are located outside of the proposed Project Area; however, Features 2 and 3 are potentially jurisdictional under CDFW and RWQCB. The proposed Project would be required to comply with the implementation of Metropolitan's Standard Practices outlined in Appendix A which requires a WEAP training, clear demarcation or proposed Project limits, proper containment of hazardous materials, adherence to hydrology and water quality requirements, and Stormwater Pollution Prevention Plan (SWPPP) requirements; therefore, no indirect impacts would occur to these features.

Feature 1 is the only aquatic resource identified within the proposed Project Area and consists of a constructed basin and an associated drainage feature/road which captures stormwater runoff along an existing access road. The basin was constructed in an upland area within the northwestern portion of the proposed Project Area to capture surface water runoff and allow it to infiltrate into the ground within the basin. Feature 1 is less than one acre in size and is used and maintained for the detention, retention, and infiltration of stormwater runoff. This feature does not meet the definition of a water of the state and does not contain or support wetland or riparian habitat, and therefore, is not likely to be considered jurisdictional by the USACE, CDFW and RWQCB. Therefore, no impacts would occur.

- 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?*

Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not 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. The proposed Project Area and Study Area do not overlap with designated or recognized wildlife corridors (Spencer et al. 2010). The proposed Project would occur along an existing pipeline infrastructure alignment and would not introduce new barriers to wildlife movement. While wildlife likely use the Study Area to forage, breed, and to some extent, for local and regional movement, the proposed Project Area does not link large areas of contiguous, intact habitat together, and is not expected to function as an important migration corridor. Existing chain-link fencing is present along the perimeter of the majority of the developed and compacted portion of the proposed Project Area and rural residential development surrounds the proposed Project Area to the north, east, and west likely deterring wildlife movement. The land surrounding the proposed Project Area to the south is comprised of undeveloped land that wildlife likely utilizes to forage and breed, and to some extent, travel locally and regionally. The proposed Project components to be constructed outside of the fenced Foothill Pump Station facility would be mainly underground with an aboveground hatch to allow for access to the vault.

The proposed Project may result in both direct and indirect impacts to nesting migratory and special-status birds, herps, and small mammals (e.g., dispersal and/or breeding habitat for Crotch bumble bee, coastal California gnatcatcher, western spadefoot, or San Bernardino kangaroo rat within this region) that may utilize the Study Area for foraging, denning, and/or nesting. While the proposed Project would permanently impact 0.12 acre and temporarily impact 0.25 acre of California buckwheat – brittle bush scrub habitat, the proposed Project would avoid 28.41 acres of natural communities suitable to support wildlife in the surrounding Study Area, outside of the proposed Project Area (Figure 3.4-4). In addition, areas temporarily impacted by the proposed Project would be restored to their original condition following proposed Project completion. Nevertheless, ground disturbance and vegetation clearing activities may disrupt foraging and breeding/nesting behavior, such as copulation, nest building or incubation, or result in the removal of an active nest or burrow.

Implementation of Metropolitan's Standard Practices outlined in Appendix A requires a WEAP training, clear demarcation of proposed Project limits, proper containment of hazardous materials, trash/debris removal, maintaining required speed limits, and lighting restrictions to prevent unintended impacts during proposed Project construction. In addition, implementation of **Mitigation Measure BIO-1, and Mitigation**

Measures BIO-3 through BIO-11 would reduce potential impacts to less than significant. Therefore, impacts to the movement of wildlife would be less than significant with mitigation incorporated.

- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact. No, the proposed Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The City of Highland Municipal Code, Chapter 8.36 (Heritage Trees) and Chapter 16.64.040 (Heritage Tree Preservation Requirements) provides regulations and guidelines for the removal, relocation, or destruction of any heritage tree or historic landmark tree within the City of Highland's city limits, requiring proper tree removal permit and associated environmental review prior to impacting protected trees. Additionally, Chapter 16.64.050 (Riparian Plant Conservation) establishes regulations to promote healthy and abundant riparian habitats within the City of Highland, working alongside existing regulations enforced by CDFW, prohibiting the removal of any riparian vegetation within 5 feet of the dripline of riparian vegetation adjacent to a "blueline stream" as indicated by the USGS Quadrangle (topographic map) or identified as a protected riparian area in a community or specific plan. The proposed Project would not impact regulated trees or riparian vegetation identified in the City of Highland Municipal Code. No other applicable local policies or ordinances would be applicable to the proposed Project. Therefore, no impact to local policies or ordinances protecting biological resources would occur.

- f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?*

Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. The southwestern portion of the proposed Project Area, and the southern and southeastern portions of the surrounding Study Area, are situated within the boundaries defined by the adopted Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan HCP).

The Wash Plan HCP was prepared by SBVWCD and officially adopted in 2022. Its primary objective is to effectively manage ground-disturbing activities related to water conservation, aggregate mining, recreational activities, and other public services within the Plan Area while concurrently conserving natural ecosystems and populations of special-status species. A total of five special-status species are covered by the Wash Plan HCP including: slender-horned spineflower, Santa Ana River woolly-star, cactus wren, coastal California gnatcatcher, and San Bernardino kangaroo rat. Metropolitan is not a signatory to the Wash Plan HCP. Consequently, the proposed Project is not a Covered Activity within the Wash Plan HCP.

The southwestern portion of the proposed Project Area overlaps with the District Conserved Lands. District Conserved Lands include lands owned by the Conservation District and Redlands and lands included in land exchange between BLM and the Conservation District, which will be permanently conserved for the five species covered by the HCP. The HCP (and HCP Preserve) will be implemented in two phases linked to the BLM land exchange. Phase 1 will occur pre-BLM land exchange (within 10 years after the issuance of the ITP) and Phase 2 will occur post-BLM land exchange (no later than 28 years after the issuance of the ITP). The District Conserved Lands that overlap with the proposed Project Area are projected to be adopted

for conservation during Phase 2. Minor temporary impact to 0.25 acre and permanent impact to 0.12 acre of California buckwheat – brittle bush scrub habitat within the District Conserved Lands (Phase 2) area is proposed to occur from the proposed Project activities. However, implementation of **Mitigation Measure BIO-3** would ensure that the habitat would be fully restored before conservation efforts begin under the HCP Preserve implementation timeline.

While the proposed Project boundary overlaps with the adopted Wash Plan HCP and shares the potential to support some of the same special-status species, the implementation of **Mitigation Measures BIO-1** through **BIO-11** would ensure that impacts to Covered Species addressed in the Wash Plan HCP remain less than significant and do not conflict with its provisions. Therefore, impacts would be less than significant with mitigation incorporated.

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3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

Cultural resources include buildings, sites, districts, structures, or objects having historical, architectural, archaeological, or cultural importance. Cultural resources can include structures in the built environment (such as buildings or infrastructure) or buried resources, including archaeological sites and human remains. This section provides an analysis of proposed Project impacts on cultural resources, including historical and archaeological resources as well as human remains, and is based on the Cultural Resource Assessment attached as Appendix D.

REGULATORY FRAMEWORK

CEQA requires a Lead Agency to determine whether a project may have a significant effect on historical resources (Public Resources Code (PRC) Section 21084.1) and archaeological resources (PRC Section 21083.2). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources; or any object, building, structure, site, area, place, record, or manuscript that a Lead Agency determines to be historically significant (CEQA Guidelines Section 15064.5[a][1-3]). Resources listed on the National Register of Historic Places are automatically listed on the CRHR, along with State Landmarks and Points of Interest. The CRHR can also include properties designated under local ordinances or identified through local historical resource surveys. In addition, a resource shall be considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

METHODOLOGY

A search of the California Historical Resources Information System (CHRIS) was conducted to identify any previously recorded cultural resources within a 0.5-mile radius of the proposed Project Area. The CHRIS records are maintained by nine Information Centers located across California and organized by county. Cultural resource records for San Bernardino County are maintained at the South Central Coastal Information Center (SCCIC), housed at California State University, Fullerton. The records search was conducted on December 15, 2023, and included a review of all recorded archaeological resources and previous studies within the proposed Project Area.

The SCCIC records search indicated that 13 cultural resources studies have been previously conducted within a 0.50-mile radius of the proposed Project Area. Of these 13 studies, two overlap nearly 90 percent of the proposed Project Area. Additionally, eighteen cultural resources were previously recorded within a 0.50-mile radius of the proposed Project Area. Of the 18 resources, eight are historic-period archaeological sites, two are historic isolates, and eight are historic built environment structures. One built environment resource (P-36-010681) was previously recorded within the proposed Project Area. P-36-010681 was a historic ranch complex and chicken farm. It was destroyed in 2002 during the construction for the Inland Feeder. No previously recorded prehistoric archaeological resources were identified during the records search.

A Sacred Lands File (SLF) search was completed by the Native American Heritage Commission (NAHC) with positive results for the proposed Project Area (Appendix D). The SLF results do not provide specific details on the nature or precise location of the Sacred Lands or whether they are related to any cultural resource recorded by the CHRIS at the SCCIC; thus, additional details cannot be provided. The NAHC provided a list of tribal contacts and recommended that they be contacted to obtain additional information.

A pedestrian field survey for cultural resources was conducted on December 20, 2023. The previously recorded site within the proposed Project Area (P-36-010681) was not relocated during the survey given that it was removed before 2005. No new cultural resources were observed during the survey.

ANALYSIS OF IMPACTS

- a. *Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

No Impact. No, the proposed Project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5. The previously recorded resource within the proposed Project Area, P-36-010681, was determined ineligible for listing in the California Register of Historical Resources or the National Register of Historic Places (Horne and Inoway 2002). No other potential historical resource were identified within the proposed Project Area from the record search and no additional resources were identified during the pedestrian survey of the proposed Project Area. Therefore, the proposed Project would not cause a substantial adverse change in the significance of a historical resource, and no impact would occur.

- b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

No Impact. No, the proposed Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. The cultural resources record search and pedestrian field survey did not identify any prehistoric archaeological resources within the proposed Project Area. One historic-period archaeological site, P-36-010681, was previously recorded within the proposed Project Area, but evaluated and destroyed during the construction of the Inland Feeder. The proposed Project Area is highly disturbed from the previous construction of the Inland Feeder and other subsurface water infrastructure located within the proposed Project Area. The possibility that previously undiscovered buried archeological resources could be encountered during ground-disturbing activities is low. Furthermore, Metropolitan Standard Practices (Appendix A) require that in the event unanticipated archaeological resources are discovered during proposed Project construction, all work would cease within 50 feet of the discovery to protect the area until a qualified archaeologist can evaluate the discovery and recommend additional measures for proper handling and treatment. In addition, Metropolitan Standard Practices also require that a WEAP training would be conducted for all construction personnel. There would be no additional ground-disturbance during proposed Project operation. Therefore, there would be no impact to archaeological resources.

- c. Disturb any human remains, including those interred outside of formal cemeteries?*

Less-Than-Significant Impact. No, the proposed Project would not disturb any human remains, including those interred outside of formal cemeteries. The proposed Project Area has been previously disturbed by the construction and installation of pipeline infrastructure associated with the Inland Feeder, and no human remains had been identified during previous excavations in or within the vicinity of the proposed Project Area during Inland Feeder ground-disturbing activities. Should previously undiscovered human remains be encountered, Metropolitan would comply with the State of California's Health and Safety Code Section 7050.5, which states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition of the remains pursuant to PRC Section 5097.98. Adherence to State of California's Health and Safety Code Section 7050.5 would result in the proper handling and treatment of unexpected human remains. Therefore, impacts would be less than significant.

REFERENCES

Horne, M., and C. Inoway, 2002. Archaeological Site Record Update for P-36-010681. On file at the South-Central Coastal Information Center.

3.6 Energy

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?*

Less-Than-Significant Impact. No, the proposed Project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during proposed Project construction or operation. Energy use during the proposed Project construction would include fuel consumption (e.g., gasoline and diesel fuel) to operate heavy equipment, light-duty vehicles, haul trucks, and generators for lighting. Electrical power used during proposed Project construction would be supplied from existing electrical infrastructure at the Foothill Pump Station facility. Use of natural gas would not be needed during proposed Project construction or operation. Energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, the Project Contractor(s) would be required to restrict the idling of heavy-duty diesel motor vehicles in accordance with Title 13 California Code of Regulations Section 2449(d)(3) and Section 2485 and utilize fleets that comply with CARB's Regulation of In-Use (On-Road) Heavy-Duty Diesel-Fueled Vehicles, which governs the accelerated retrofitting, repowering, or replacement of heavy-duty diesel on- and off-road equipment. Construction activities would utilize fuel-efficient equipment consistent with state and federal regulations and comply with state measures to reduce the inefficient, wasteful, or unnecessary consumption of energy. Project Contractor(s) would be required to comply with applicable regulatory construction waste management practices to divert construction and demolition debris. Overall, these practices would result in efficient use of energy, and proposed Project construction activities would require the minimum necessary electricity and transportation fuel consumption and would not have an adverse impact on available electricity or transportation fuel supplies or infrastructure.

The proposed Project is a water infrastructure project that would not increase water supply. The proposed Project would allow Metropolitan to pump and deliver water from DVL to the Rialto service area, which is currently only able to receive SWP water. This allows for greater water infrastructure reliability to the Rialto service area by improving the water distribution system flexibility to operate more efficiently in both wet years and under the more frequently occurring drought conditions. Operations and maintenance activities associated with the proposed Project would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources. Therefore, the only source of emissions would be associated with periodic vehicle trips by Metropolitan employees

for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. Operational energy consumption as a result of the use of transportation fuels (e.g., diesel and gasoline) associated with occasional maintenance vehicles traveling to and from the proposed Project Area would be minimal due to the infrequent recurrence of operational maintenance events. Additionally, proposed Project operational equipment installed would be new and designed to meet applicable current energy standards for such equipment and would only slightly increase the demand for electricity resources. Accordingly, proposed Project construction and operation would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and impacts would be less than significant.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. No, the proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Metropolitan has a Climate Action Plan, which was adopted in May 2022, but none of the energy efficiency and conservation measures outlined in Metropolitan's CAP are applicable to the proposed Project (Metropolitan 2022a). In addition, Metropolitan is not subject to the County of San Bernardino *Greenhouse Gas Emissions Reduction Plan Update*, because this plan does not address greenhouse gas emissions and associated energy usage related to Metropolitan's activities (County of San Bernardino 2021). Indirectly, on-road vehicles used during operational maintenance activities would be required to meet the ongoing state fuel efficiency requirements. Therefore, the proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and no impact would occur.

REFERENCES

County of San Bernardino, June 2021. County of San Bernardino *Greenhouse Gas Emissions Reduction Plan Update*. Accessed April 3, 2024. Available: GHG Reduction Plan Update-Greenhouse Gas Reduction Plan Update - Adopted 9-21-2021.pdf (sbcounty.gov)

Metropolitan (The Metropolitan Water District of Southern California), May 2022a. Climate Action Plan (CAP). Accessed April 3, 2024. Available: mwdh2o.com/media/12469/final-cap.pdf.

3.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic groundshaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on geologic units 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

a. *Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i) *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? Refer to Division of Mines and Geology Special Publication 42.*

No Impact. No, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault. Based on review of available literature and online maps, no active faults are known to traverse the proposed Project Area, and the site is not located within a designated Alquist-Priolo Earthquake Fault Zone (HDR Engineering 2022; U.S. Geological Survey 2022). The nearest Alquist-Priolo Earthquake Fault Zone is located approximately 0.5 miles northeast of the proposed Project Area (California Geological Survey 2021). Therefore, the potential for surface fault rupture is considered low (HDR Engineering 2022). The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Additionally, the proposed Project Area is not occupied by people, and no permanent or temporary structures that would be occupied by people would be constructed and/or operated as part of the proposed Project. Therefore, the proposed Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death associated with rupture of a known earthquake fault and no impact would occur.

ii) *Strong seismic ground shaking?*

No Impact. No, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking. Several active faults are located in the proximity of the proposed Project Area including the San Andreas Fault, Crafton Hills Fault, and San Jacinto Fault. The nearest active fault is the San Bernardino Mountains section of the San Andreas Fault, located approximately 1.1 miles from the proposed Project Area (HDR Engineering 2022). The proposed Project includes implementation of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The proposed Project does not contain habitable structures, and the proposed Project does not propose the construction of new habitable structures. Therefore, the proposed Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving seismic ground shaking. All work conducted for the proposed Project would conform to the current seismic design provisions of the California Building Code (California Code of Regulations Title 24). Therefore, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking and no impact would occur.

iii) *Seismic-related ground failure, including liquefaction?*

No Impact. No, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction. Soil liquefaction is the process in which saturated soil experiences a temporary loss of strength due to the buildup of excess pore water pressure resulting from earthquake ground motions. Liquefaction

may damage structures on saturated, granular soils such as silt or sand, during an earthquake. The proposed Project Area has not been evaluated for liquefaction potential per the California Earthquake Hazards Zone Application (California Geological Survey 2021) or the San Bernardino County Land Use, Geologic Hazards Map (County of San Bernardino 2010). Groundwater is estimated to be deeper than 50 feet below ground surface (bgs) and the subsurface soils are anticipated to mainly consist of dense to very dense granular material. Based on the geotechnical report prepared for the proposed Project, the liquefaction potential for the proposed Project Area is considered low (HDR Engineering 2022). The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. There would be no construction of habitable or occupied structures. Therefore, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction and no impact would occur.

iv) Landslides?

No Impact. No, the proposed Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving landslides. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall and/or seismic shaking. Because the proposed Project Area is located in a relatively flat area without any major slopes, the potential for landslides and slope instability is considered to be low at the proposed Project Area (HDR Engineering 2022). None of the proposed Project components would increase or alter landslide potential. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. There would be no construction of habitable or occupied structures. Therefore, the proposed Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death, as a result of landslides and no impact would occur.

b. Result in substantial soil erosion or the loss of topsoil?

No Impact. No, the proposed Project would not result in substantial soil erosion or the loss of topsoil. Earthmoving and grading activities during construction of the proposed Project have the potential to cause erosion. The Construction General Permit requires the implementation of a SWPPP for impacts to more than one acre to reduce erosion and topsoil loss from stormwater runoff during construction activities. Compliance with the requirements set forth in this permit would require the Project Contractor(s) to implement best management practices (BMPs) during construction to prevent substantial soil erosion or the loss of topsoil. Furthermore, operations and maintenance activities would be similar to existing conditions once construction activities are completed. Therefore, the proposed Project would not have the potential to result in substantial soil erosion or loss of topsoil and no impact would occur.

c. Be located on geologic units 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?

No Impact. No, the proposed Project would not be located on unstable geologic units or unstable soil, or that would become unstable as a result of the proposed Project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. The proposed Project would include

construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The proposed Project does not include changes that would result in new instability in the geologic units. As described in responses 3.7(a)(iii) and (a)(iv) above, the proposed Project would not cause or be located in geologic units or soil that is or would become unstable or susceptible to liquefaction or landslides. As described in impact iii, the liquefaction potential for the proposed Project Area is considered low and the site does not contain major slopes, therefore, the potential for lateral spreading at the proposed Project Area is considered low (HDR Engineering 2022). Therefore, the proposed Project would not be located on unstable geologic units or unstable soil, or that would become unstable as a result of the proposed Project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse and no impact would occur.

- d. *Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial direct or indirect risks to life or property?*

No Impact. No, the proposed Project would not be located on expansive soils as defined in Section 1803.5.3 of the California Building Code (2010). The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. There would be no construction of habitable or occupied structures. Based on geotechnical report prepared for the proposed Project, the on-site soils primarily consist of dense sands, sandy gravels, cobbles, and boulders which are not considered to be expansive (HRD Engineering 2022). Additionally, expansion test result from near-surface soils indicate that the on-site soils are non-expansive and the potential for expansive soils at the proposed Project Area is considered low (HRD Engineering 2022). Therefore, no impact would occur.

- 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?*

No Impact. No, the proposed Project does not require the installation or use of septic tanks or other alternative wastewater disposal systems. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. There would be no construction of habitable or occupied structures. Portable toilet systems for Metropolitan and construction employees would be provided during proposed Project construction activities, and no permanent septic or wastewater disposal systems would be installed. Therefore, the proposed Project would have no impact related to septic tanks and alternative wastewater systems.

- f. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less-Than-Significant Impact. No, the proposed Project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. This analysis of proposed Project impacts on paleontological resources is based on the *Paleontological Resources Assessment Report* attached as Appendix E. Per review of the geotechnical report prepared for the proposed Project, a total of three test pits were excavated in the proposed Project Area down to a depth of 49.6 feet bgs. The first 5 to 11 feet of the test pit units yielded artificial fill. Quaternary-age alluvial soils were found beneath the artificial fill and consist of poorly graded sand mixed with gravel, cobbles, and boulders (HDR Engineering 2022). A paleontological resources database search was conducted by the Natural History Museum of Los Angeles County (LACM) on January 7, 2024. Results of the paleontological resources records search conducted by

the LACM indicated that no fossil localities lie directly within the proposed Project Area; however, four fossil localities (LACM VP 1782, 4540, 4619, and 7811) were identified nearby from sedimentary deposits that may be found in the subsurface in the proposed Project Area. LACM VP 1782 produced fossil specimens of the camel family (*Camelidae*) at an unknown depth. LACM VP 4540 yielded specimens of the horse family (*Equidae*) at an unknown depth. LACM VP 4619 produced a fossil specimen of mammoth (*Mammuthus*) at 9 and 11 feet bgs., and LACM VP 7811 produced a fossil specimen of whip snake (*Masticophis*) at 100 feet bgs.

The Quaternary-age alluvial soils in the proposed Project Area are likely less than 5,000 years old and unlikely to contain fossils based on the age of the soils. Therefore, the Quaternary alluvium underlying the proposed Project Area is of low paleontological sensitivity, increasing to higher sensitivity with depth. While the exact depths of the alluvial soils is not known, it is likely deeper than the planned excavation.

Per Metropolitan's Standard Practice (Appendix A), a Project-specific WEAP training would be prepared and given to all construction personnel. The training would include all potential concerns and considerations related to paleontological resources, including types of paleontological resources that may be encountered and the proper procedures to be enacted in the event of an inadvertent discovery of paleontological resources. As outlined in Appendix A, if unanticipated paleontological resources are discovered during construction activities, all work would cease within 50 feet of the discovery to protect the area until a qualified paleontologist can evaluate the discovery and recommend additional measures for the proper handling and treatment. Due to the lack of unique paleontological resources previously recorded within the proposed Project Area, age of soils, and relatively shallow construction excavation depths, impacts would be less than significant.

REFERENCES

- California Geological Survey (CGS), 2021. The California Earthquake Hazards Zone Application (EQ Zapp) September 23, 2021. Available online at: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>. Assessed: December 8, 2023.
- County of San Bernardino, 2010. San Bernardino County Land Use, Geologic Hazard Maps. Available online at: <https://lus.sbcounty.gov/planning-home/zoning-and-overlay-maps/geologic-hazard-maps/>. Accessed: December 12, 2023.
- HDR Engineering, 2022. Geotechnical Report Inland Feeder-Foothill Pump Station Project. Accessed: December 12, 2023.
- U.S. Geological Survey, 2022. U.S. Quaternary Faults Map. Available online at: <https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf>. Accessed: December 12, 2023.

3.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence that takes place in Earth's atmosphere and helps regulate the temperature of the planet. GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The global warming potential of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO₂e), which is the amount of GHG emitted multiplied by its global warming potential.

REGULATORY FRAMEWORK

In response to climate change, California implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 required the reduction of statewide GHG emissions to 1990 emissions levels (essentially a 15 percent reduction below 2005 emission levels) by 2020 and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the Governor signed Senate Bill (SB) 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged).

In 2022, AB 1279 was passed which requires the State to both achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. In December 2022, CARB adopted the 2022 *Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) (CARB 2022). The 2022 Scoping Plan relies on the continuation and expansion of existing policies and regulations, but also responds to AB 1279, outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state's climate target of reducing anthropogenic emissions

to 85 percent below 1990 levels by 2045 and achieving carbon neutrality¹¹ by 2045 or earlier (CARB 2022). The 2022 Scoping Plan outlines the strategies the state will implement to achieve carbon neutrality by reducing GHG emissions to meet the anthropogenic target, and by expanding actions to capture and store carbon through the state's natural and working lands and using a variety of mechanical approaches. The major element of the 2022 Scoping Plan is the decarbonization of every sector of the economy. This effort requires the following key actions: (1) rapidly move to zero-emissions transportation for cars, buses, trains, and trucks; (2) phase out the use of fossil-fuel gas for heating; (3) clamp down on chemicals and refrigerants; (4) provide communities with sustainable options such as walking, biking, and public transit to reduce reliance on cars; (5) continue to build out solar arrays, wind turbine capacity, and other resources to provide clean, renewable energy to displace fossil-fuel-fired electrical generation; and (6) scale up new options such as renewable hydrogen for hard-to-electrify end uses and biomethane where needed.

Despite these efforts, some residual emissions will remain from hard-to-abate industries such as cement, internal combustion vehicles still on the road, and other GHG emissions sources, including high-GWP chemicals used as refrigerants (CARB 2022). The 2022 Scoping Plan addresses the remaining emissions by re-envisioning natural and working lands (such as forests, shrublands/chaparral, croplands, and wetlands) to ensure that they incorporate and store as much carbon as possible. However, the modeling for the 2022 Scoping Plan indicates that natural and working lands, on their own, will not provide enough sequestration and storage to address all residual emissions. Therefore, it will be necessary to research, develop, and deploy additional methods of capturing CO₂ that include pulling it from smokestacks of facilities, or drawing it out of the atmosphere itself and then safely and permanently utilizing and storing it (CARB 2022).

The SCAQMD has not formally adopted a significance threshold for GHG emissions generated by a proposed project for which the SCAQMD is not the lead agency, nor has it adopted a uniform methodology for analyzing impacts related to GHG emissions on global climate change. In the absence of any industry-wide accepted standards, the SCAQMD's significance threshold of 10,000 metric tons per year (MT/year) CO₂e for projects in which it is the lead agency is the most relevant air district-adopted GHG significance threshold and is used as a benchmark for the proposed project. It should be noted that the SCAQMD's significance threshold of 10,000 MT/year CO₂e for industrial projects is intended for long-term operational GHG emissions. The SCAQMD has developed guidance for the determination of the significance of GHG construction emissions that recommends that total emissions from construction be amortized over 30 years and added to operational emissions and then compared to the threshold (SCAQMD 2008). The GHG impacts of the proposed project would be evaluated based on the recommended methodologies from the SCAQMD in this EIR.

In May 2022, Metropolitan adopted a Climate Action Plan (CAP) and certified the associated Program EIR (Metropolitan 2022a; 2022b). Metropolitan's CAP complies with the requirements of CEQA Guidelines Section 15183.5(b)(1) for a qualified greenhouse gas (GHG) reduction plan, and as such, can be used to streamline and tier CEQA GHG analysis and mitigate for GHG impacts associated with construction and operational activities (Metropolitan 2022a). The CAP includes a baseline GHG emissions inventory of

¹¹ *Carbon neutrality* means "net zero" emissions of GHGs. In other words, it means that GHG emissions generated by sources such as transportation, power plants, and industrial processes must be less than or equal to the amount of CO₂ that is stored, both in natural sinks and through mechanical sequestration. AB 1279 uses the terminology "net zero" and the 2022 Scoping Plan uses the terminology "carbon neutrality" or "carbon neutral." For purposes of this MND, these terms mean the same thing and are used interchangeably.

Metropolitan's operations from 1990 through 2020 and a GHG emissions forecast through 2045. The CAP established Metropolitan's GHG emissions reduction targets to be consistent with SB 32 (40 percent reduction below 1990 levels by 2030) and AB 1279, which codifies the State's goal of achieving carbon neutrality by 2045. The CAP also establishes actions and policies that Metropolitan could implement to achieve its GHG reduction targets. The CAP includes a suite of GHG emissions reduction measures to be implemented that would reduce Metropolitan's GHG emissions to achieve the adopted emissions reduction targets established in the CAP. By following these emissions reduction measures, Metropolitan would exceed the State's target of 40 percent below 1990 levels by 2030 and make significant progress toward ultimately achieving carbon neutrality by 2045 (Metropolitan 2022a).

METHODOLOGY

Similar to the air pollutant emissions modeling, GHG emissions associated with the proposed Project were estimated using CalEEMod (Version 2022.1.1). CalEEMod uses Project-specific information, including the Project's land uses and location, to estimate a Project's emissions (Refer to Appendix B for the air quality and greenhouse gas emissions modeling). Operations and maintenance activities, including the frequency of staff visits, maintenance, shutdowns, would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources. The only source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities. Due to the minimal emissions that would result from these periodic vehicle trips by Metropolitan employees to the proposed Project Areas, the proposed Project's operational emissions are evaluated qualitatively in this MND.

ANALYSIS OF IMPACTS

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less-Than-Significant Impact. No, the proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. As outlined in Section 1.1 of Metropolitan's CAP, the CAP meets the requirements of CEQA Guidelines Section 15183.5(b)(1) for a qualified GHG emissions reduction plan (Metropolitan 2022a). As a result, pursuant to CEQA Guidelines Section 15183.5(a) and 15183.5(b), Metropolitan can streamline the CEQA review of its projects using the GHG emissions analysis completed for the CAP if the proposed program is consistent with the adopted CAP. Therefore, this analysis relies upon the streamlining provisions of CEQA Guidelines Section 15183.5 to determine whether the proposed Program would generate GHG emissions that may have a significant impact on the environment by evaluating whether the proposed Program would be consistent with the CAP.

Proposed Project construction activities would generate temporary GHG emissions through the use of construction vehicles and equipment, haul trips, and transport of employees and materials to and from the work site, electricity from construction trailers and water usage for fugitive dust control. Proposed Project construction emissions were modeled consistent with construction modeling in Section 3.3, *Air Quality*. Table 3.8-1 represents the greenhouse gas emissions for construction of the proposed Project.

**TABLE 3.8-1
PROPOSED PROJECT CONSTRUCTION GHG EMISSIONS**

Source	Maximum GHG Emissions (MTCO₂e/year)
Construction Equipment and On-Site Trucks	192
On-Road Mobile Sources	175
Water + Construction Office	16
Total Construction CO₂e	383
Amortized Construction Emissions	13
SOURCE: ESA 2024	

Industry standards recommend that construction project GHG emissions should be amortized over a 30-year project lifetime, so that construction GHG emissions are included as part of the operational GHG life cycle. Per the recommendation, GHG emissions from construction were amortized over the 30-year lifetime of the proposed Project (SCAQMD 2008). Total estimated construction related GHG emissions for the proposed Project are estimated at approximately 379 MTCO₂e. This would equal to approximately 13 MTCO₂e per year after amortization over 30 years.

As explained above, the proposed Project is a water infrastructure project that would not increase water supply, but rather enhance water delivery flexibility in response to drought conditions and limited SWP allocations. Metropolitan is proposing an intertie connection between the Inland Feeder and Foothill Pump Station and would not directly or indirectly cause growth (see Section 1.0, *Project Description*, for additional details). Operations and maintenance activities at the Foothill Pump Station facility, including the frequency of staff visits, maintenance, shutdowns, would be similar to existing conditions once construction activities are completed and would only slightly increase the demand for electricity resources. The main source of emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities.

Emissions reduction measures listed in the CAP would be incorporated into the proposed Project, if applicable and proposed Project GHG emissions would be quantified as part of the CAP annual reporting. As noted previously, Metropolitan adopted a CAP to address and mitigate organization-wide GHG emissions associated with construction and operational activities. Metropolitan's annual 2022 CAP Progress Report states approximately 9,678,470 MT of CO₂e remains in the carbon budget for years 2022 through 2045 years (Metropolitan 2023). Pursuant to the annual CAP GHG emissions inventory and reporting procedures, GHG emissions generated by proposed Project activities would be tracked as part of Metropolitan's overall carbon budget through data collected from construction contractors, utility and service providers (electricity, natural gas, water, wastewater, and solid waste), and the employee commute survey. In addition, organization-wide CAP measures would be implemented to reduce Metropolitan's GHG emissions over time such that GHG emissions remain within the carbon budget. As shown in Table 3.8-1, the construction of the Project would generate approximately 13 metric tons of CO₂e per year, which would be less than the SCAQMD 10,000 metric tons of CO₂e per year quantitative significance threshold for industrial projects. In addition, as discussed above, Project operational GHG emissions were

discussed qualitatively because the main source of Project operations emissions would be associated with periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. Therefore, once constructed, the proposed Project would result in minimal operational emissions associated with operations and maintenance, and no long-term GHG impact would occur. As such, due to the Project's minimal construction and operational GHG emissions, the Proposed Project would result in a less than significant impact related to GHG emissions.

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. No, the proposed Project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purposes of reducing GHG emissions. Applicable plans, policies, and regulations consist of Metropolitan's CAP, SB 32, EO B-55-18, the 2022 Scoping Plan, and AB 1279. As discussed under Threshold GHG-A, the proposed Project would be consistent with Metropolitan's CAP because 1) GHG emissions generated by proposed Project activities would be tracked as part of Metropolitan's overall carbon budget implementing its organization-wide CAP measures to reduce Metropolitan's GHG emissions over time such that GHG emissions remain within the carbon budget; and 2) the proposed Project would incorporate applicable CAP measures. Also, by being consistent with the CAP, the proposed Project would also be consistent with state GHG emission reduction plans, policies, and regulations, such as the 2022 Scoping Plan, SB 32, EO B-55-18, and AB 1279, because the GHG emission reduction targets established by these plans, laws, and policies are incorporated into and consistent with Metropolitan's GHG emissions reduction targets. Therefore, the proposed Project would not conflict with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, and no impact would occur.

REFERENCES

- CARB (California Air Resource Board), November 16, 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Accessed April 3, 2022. Accessed: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf.
- Metropolitan (The Metropolitan Water District of Southern California), May 2022a. Climate Action Plan (CAP). Accessed April 3, 2024. Available: mwdh2o.com/media/12469/final-cap.pdf.
- Metropolitan (The Metropolitan Water District of Southern California), May 2022b. Final Program Environmental Impact Report. Accessed April 3, 2024. Available: mwdh2o.com/media/12469/final-cap.pdf.
- Metropolitan (The Metropolitan Water District of Southern California), April 2024. Final Program Environmental Impact Report. Accessed May 6, 2024. Available: https://www.mwdh2o.com/media/xo5ilx4l/metropolitan_climate_action_plan_2023_annual_progress_report.pdf.
- SCAQMD (South Coast Air Quality Management District), December 5, 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, page 5. Accessed 3 April, 2024. Available: [https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2](https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2).

3.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less-Than-Significant Impact. No, the proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The proposed Project does not involve routine or permanent transport, use, storage, or disposal of hazardous materials. Construction of the proposed Project would require the temporary transport of hazardous materials to and from the proposed Project Area and the use and storage of these materials. Construction activities would occur in two stages as described in Section 1.0, *Project Description*. The proposed Project's construction equipment and materials would include fuels, oils and lubricants, cement, and concrete, which are all commonly used in construction. Proposed Project construction activities would be required to comply with numerous regulations to ensure that construction-related fuels and other hazardous materials

are transported, used, stored, and disposed of safely to protect employee safety, and to reduce the potential for such fuels or other hazardous materials to be released into the environment, including stormwater and downstream receiving water bodies. In addition, construction contractors would be required to acquire coverage under the National Pollutant Discharge Elimination System (NPDES) General Stormwater Permit, which requires the preparation and implementation of a SWPPP for construction activities. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, and equipment and fuel storage; describe protocols for responding immediately to spills; and describe BMPs for controlling site run-on and runoff. Details regarding BMPs designed to minimize erosion are discussed in Appendix A.

Proposed Project operations would not change from existing conditions. In addition, as outlined in Appendix A (Metropolitan Standard Practices), the Project Contractor(s) would be required to follow regulations related to the proper handling, storage, application, disposal, and clean-up of hazardous materials, install drip pans on stationary equipment, and dispose of contaminated materials consistent with all applicable federal, state, and local laws and regulations.

The temporary nature of any hazardous material transport, compliance with federal, state, and local laws and regulations, and implementation of Metropolitan Standard Practices, would ensure that the proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, storage, or disposal of hazardous materials. Impacts would be less than significant.

- 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?*

Less-Than-Significant Impact. No, the proposed Project would not create a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As discussed in Section 3.9 (a) above, the proposed Project would require the temporary use and storage of hazardous materials at the proposed Project Area during construction activities for use in equipment operation, cleaning, and maintenance. The transport, use, storage, and disposal of hazardous materials during proposed Project construction would be conducted in accordance with applicable state and federal laws, as discussed above. As outlined in Appendix A, the Project Contractor(s) would be required to clean up all spills in accordance with all applicable environmental laws and regulations and notify the Engineer immediately in the event of a spill.

The proposed Project does not involve changes to roadways, traffic conditions, permanent ingress or egress, or routine transport of hazardous materials that would create a foreseeable upset or accident conditions. Metropolitan would also comply with their Standard Practices as outlined in Appendix A for requirements related to hazardous materials storage. Compliance with federal, state, and local laws and regulations, Metropolitan Standard Practices, and temporary nature of hazardous materials handling would ensure that the proposed Project would not create a significant hazard to the public or the environment through upset and accident conditions involving the release of hazardous materials. Impacts would be less than significant.

- c. *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. No, the proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The nearest school to the proposed Project Area would be approximately one mile to the northwest. No schools are located within one-quarter mile of the proposed Project Area. The proposed Project would not 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 would occur.

- d. *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?*

No Impact. No, the proposed Project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No known hazardous material sites are located within or adjacent to the proposed Project Area, including sites that are on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Department of Toxic Substances Control 2023; State Water Resources Control Board 2023). Therefore, no impact would occur.

- 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 or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?*

Less-Than-Significant Impact. No, the proposed Project would not result in a safety hazard or excessive noise for people residing or working in the proposed Project Area due to an airport land use plan or location within two miles of a public airport or public use airport. The nearest airport is Redlands Municipal Airport, located approximately 1.5 miles south of the proposed Project. The proposed Project Area would not be located within the Redlands Municipal Airport Influence Area or Area of Special Compatibility Concern (City of Highland 2006b). The proposed Project would include temporary construction within the existing Foothill Pump Station facility. The proposed Project would not include habitable structures and construction employees would not experience impacts associated with airport safety and excessive noise from aircraft. Therefore, impacts would be less than significant.

- f. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less-Than-Significant Impact. No, the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The City of Highland General Plan Public Health, Safety, and Environmental Justice Element includes an Emergency Preparation and Response section, which includes information on emergency response facilities and evacuation routes. In the event of an extreme fire, flood, or other circumstances, evacuation may be necessary. To preserve the lives of Highland residents, it is important to ensure that the routes used for evacuation are unobstructed and in good condition. Depending on the hazard, evacuation routes in Highland may involve a variety of highways and arterials. Interstates and highways that could be used by residents to evacuate the area include Interstates 10, 15, and 215, as well as State Routes 30, 31, 38, 60, 66, and 210. Major east/west roads within Highland that could be used for evacuation include Greenspot Road, Base

Line Street, East Highland Avenue, and Pacific Street (City of Highland 2006b). The proposed Project Area would be located south of Greenspot Road which is identified as a possible evacuation route. Proposed Project construction would occur mainly within a Metropolitan right-of-way and would not permanently alter public roadways or change the existing access points at the proposed Project Area. Construction vehicles carrying construction equipment and materials would utilize local roadways and freeways to bring equipment and materials to the site. These activities would be temporary, during construction, and provide direct access to the proposed Project Area. The proposed Project would not require lane or road closures. Based on the temporary nature of the construction activities, the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

- g. *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Less-Than-Significant Impact. No, the proposed Project would not expose people or structures to a significant risk of loss, injury or death involving wildfires. The proposed Project would not be located in or near a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone (CAL FIRE 2023). The proposed Project would be located at the existing Foothill Pump Station facility and immediately south of the facility. As outlined in Appendix A the Project Contractor(s) would be required to comply with Metropolitan standard practices related to fire protection including requirements for standard exhaust control and muffling devices that would act as spark arrestors on gasoline- or diesel-powered construction machinery, and the presence of fire containment and extinguishing equipment on-site during construction activities. All vehicles would contain fire extinguishers, and staff are trained in fire suppression in accordance with Metropolitan's standard protocols. The proposed Project does not propose the construction of habitable structures. Following construction activities, maintenance of the Foothill Pump Station facility would be the same as current maintenance activities and would not result in the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be less than significant.

REFERENCES

- California Department of Forestry and Fire Protection (CAL FIRE), 2023. Fire Hazard Severity Zones in State Responsibility Area. Available online at <https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008>. Accessed December 11, 2023.
- California Department of Toxic Substances Control (DTSC). 2023. DTSC's Hazardous Waste and Substances Site List—Site Cleanup (Cortese List). Available: <https://calepa.ca.gov/sitecleanup/corteselist/>. Accessed December 12, 2023.
- City of Highland, 2006b. General Plan *Public Health, Safety, and Environmental Justice Element*. March 2006. Available online at: <https://www.cityofhighland.org/DocumentCenter/View/4193/Public-Health-Safety-and-Environmental-Justice-Element-PDF>
- State Water Resources Control Board (SWRCB), 2023. GeoTracker database. Available: <https://geotracker.waterboards.ca.gov/>. Accessed December 12, 2023.

3.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate Regional Water Quality Control Board water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

REGULATORY FRAMEWORK

The Clean Water Act (CWA) is the primary federal legislation governing water quality. Sections 303 and 304 of the CWA provide water quality standards, criteria, and guidelines. Section 402 of the CWA establishes the National Pollution Elimination Discharge System (NPDES), a permitting system for the discharge of pollutants (except for dredged or fill material) into Waters of the United States. The California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) administer the NPDES Project in California. Each RWQCB has Projects for implementing individual and general permits related to construction activities, municipal stormwater discharge, and various kinds of non-stormwater discharges.

The NPDES Project controls water pollution by regulating point sources that discharge pollutants into Waters of the United States. The NPDES Project is a federal project that has been delegated to the SWRCB

and the nine RWQCBs to implement and regulate. The majority of NPDES permits are issued by the RWQCBs, which ensure compliance with their permits through compliance inspections, monitoring report reviews, and enforcement actions, if necessary. In California, NPDES permits are also referred to as waste discharge requirements (WDR) that regulate discharges to waters of the United States.

The Porter-Cologne Water Quality Control Act is the primary water quality control act for the State of California. The Porter-Cologne Act is implemented by the SWRCB and the nine RWQCBs and applies to Waters of the State, which includes any surface water or groundwater, including saline waters, within the boundaries of the state (Water Code Section 13050(e)). The Porter-Cologne Act requires a report of Water Discharge for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair beneficial use of surface or groundwater of the State. For discharges directly to surface water, an NPDES permit is required. For waste discharges to land (such as spoils disposal and storage), erosion from soil disturbance, or discharges to Waters of the State, Waste Discharge Requirements (WDRs) are required.

ANALYSIS OF IMPACTS

- a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Less-Than-Significant Impact. No, the proposed Project would not violate RWQCB water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. The proposed Project would not involve work within surface waterbodies, as no surface waterbodies are present, or to groundwater, nor would it create waste that would be subject to regulation under a WDR. If groundwater is encountered and extraction is required, these construction activities would be temporary and short-term in nature. Earthmoving activities associated with the proposed Project would include excavation, trenching, grading, and construction over an area that would be more than one acre. These activities could expose soils to erosion processes; the extent of erosion, if any, would vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions.

Projects that disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one acre or more, are required to obtain coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2022-0057-DWQ, NPDES No. CAS000002 (Construction General Permit)). Construction activity subject to this permit includes clearing, grading, excavation, and stockpiling of excavated soil. The proposed Project would be required to prepare and implement a SWPPP. Limited quantities of common materials such as vehicle/equipment fuels/lubricants and sealants would be used during construction. This use would include standard measures to ensure appropriate handling (e.g., temporary containment to avoid spills), proper disposal of associated wastes, and describe BMPs to control run-on and runoff from the construction site. Following completion of construction, the proposed Project Area would be returned to pre-Project conditions in areas where underground facilities are constructed. Operations of the facility would be similar to existing conditions and would be implemented by existing Metropolitan staff. Compliance with the NPDES Construction General Permit, required SWPPP, and identified BMPs would ensure that construction and operation of the proposed Project would not violate water quality standards or waste discharge requirements.

As shown in Appendix A, per Metropolitan's Standard Practices, any Project Contractor(s) shall not create a nuisance or pollution as defined in the California Water Code, or cause a violation of any applicable water quality standards for receiving waters, as required by the CWA. Therefore, the potential for proposed Project activities to violate RWCQB water quality standards, waste discharge requirements or cause erosion or the downstream transport of sediment (sedimentation) that could adversely affect water quality would be less than significant.

- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?*

No Impact. No, the proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed Project may impede sustainable groundwater management of the basin. The proposed Project includes implementation of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The proposed Project would not affect or propose the use of groundwater. The proposed Project would not result in any increased use or extraction of local groundwater. In addition, no sole source aquifers would be located within the proposed Project Area (US EPA 2023). Therefore, there would be no impact.

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*
- i) Result in substantial erosion or siltation on- or off-site?*
 - ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*
 - iii) 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?*
 - iv) Impede or redirect flood flows?*

Less-Than-Significant Impact. No, the proposed Project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion on- or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff water; or impede or redirect flood flows. The proposed Project is an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Construction of the proposed Project would temporarily alter the localized drainage pattern in the proposed Project Area due to ground-disturbing activities, such as grading, trenching, and excavation. Such alternations in the drainage pattern may temporarily result in erosion or siltation and/or increase the rate or amount of surface runoff if substantial drainage is rerouted. As discussed in *Geology and Soils*, potential construction-related erosion and sedimentation impacts would be avoided or reduced below a level of significance through conformance with the existing NPDES Construction General Permit and related requirements). Specifically, the proposed Project would implement a SWPPP and Project-specific BMPs would be identified to control erosion and

sedimentation impacts. BMPs would be implemented, as required, during the construction of the proposed Project to ensure that erosion and sedimentation impacts would be less than significant.

As discussed above, construction of the proposed Project could temporarily alter seasonal flow within the proposed Project Area due to ground disturbing activities. However, with implementation of the required Project-specific SWPPP and associated BMPs, construction of the proposed Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff. Metropolitan would also comply with their Standard Practices, (Appendix A) requiring that the Contractor not allow any equipment or vehicle storage within any drainage course or channels and any material placed in areas where it could be washed into a drainage course or channel would be removed prior to the rainy season. Once construction is completed, the components of the proposed Project located within a flood zone would be located underground and the proposed Project Area would be returned to similar existing conditions. Therefore, the proposed Project would not impede or redirect flood flows and impacts would be less than significant.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

Less-Than-Significant Impact. No, the proposed Project would not risk release of pollutants due to inundation in a flood hazard, tsunami, or seiche zone. The southern portion of the proposed Project Area, generally outside of the existing facility, would be located within an area determined by FEMA to be Zone X, an area protected from flooding from the 100-year storm event (FEMA 2016). Components of the proposed Project that would be located within the flood zone include a portion of the discharge pipeline and one vault structure. Once constructed, the proposed Project components within the flood zone would be located mainly belowground. Due to the components being located underground, impacts would be less than significant relative to being located in a flood zone.

The proposed Project Area would be located approximately 75 miles away from the Pacific Ocean and would not be subject to tsunamis. Seiches are defined as wave-like oscillatory movements in enclosed or semi-enclosed bodies of water such as lakes or reservoirs and are most typically associated with seismic activity. The nearest lake to the proposed Project Area would be the Seven Oaks Reservoir located approximately 2.5 miles to the northeast. According to the United States Geological Survey (USGS) Flood Inundation Mapper, the proposed Project Area would be located outside of the inundation zone (USGS 2024). During proposed Project construction activities, minor pollutants would be present at the proposed Project Area. The proposed Project would not result in impacts associated with flood, tsunami, or seiche hazards during long-term operation of the proposed Project, as operations of the Foothill Pump Station facility would be a continuation of existing activities at the facility and the proposed Project would not result in operational changes at the facility. Therefore, impacts due to potential release of pollutants due to proposed Project inundation in a flood hazard, tsunami, or seiche zones would be less than significant.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-Than-Significant Impact. No, the proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The Project consists of temporary construction activities to implement an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks, and would not require

the use of groundwater and therefore would not conflict with a sustainable groundwater management plan. The proposed Project would require preparation of a SWPPP, including implementation of BMPs to minimize soil erosion and water quality impacts. The proposed Project would not result in impacts associated with groundwater recharge or a groundwater management plan. With conformance to applicable regulatory requirements, including the NPDES Project, preparation of a SWPPP, and implementation of BMPs, impacts would be less than significant.

REFERENCES

Federal Emergency Management Agency (FEMA), 2016. FEMA Flood Map Service Center, Available online at: <https://msc.fema.gov/portal/home>, Accessed on February 23, 2024.

U.S. Environmental Protection Agency (US EPA), 2023. Map of Sole Source Aquifer Locations, Available online at: <https://www.epa.gov/dwssa/map-sole-source-aquifer-locations>, Accessed on February 23, 2024.

United States Geological Survey (USGS), 2024. USGS Flood Inundation Mapper, Available online at: <https://fim.wim.usgs.gov/fim/>, Accessed on March 12, 2024.

3.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

a. Physically divide an established community?

No Impact. No, the proposed Project would not physically divide an established community. The proposed Project would be located mainly within the existing Foothill Pump Station facility, with a small portion of the construction of the discharge pipeline and one vault being constructed belowground just to the south of the facility. The Project consists of improvements to an existing Metropolitan facility and does not include new components that would physically divide a community. Temporary work staging areas and construction areas would occur along or within the proposed Project Area. The proposed Project would not result in changes to the existing land use or any surrounding land use. Therefore, no impact would occur.

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. No, the proposed Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The proposed Project would be located under the jurisdiction of the City of Highland. There are no land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect at or within the vicinity of the proposed Project Area. Therefore, the proposed Project would not cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and no impact would occur.

3.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?*

No Impact. No, the proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. The proposed Project would be located within the existing Foothill Pump Station facility and contains existing Metropolitan infrastructure. The City of Highland, due to its large washes and stream channels, contains regionally significant construction aggregate and mineral resources. The primary minerals found in the area are iron, decorative rocks, clay, limestone, sand and gravel (City of Highland 2006a). The proposed Project Area would be located mainly on developed land within the existing Foothill Pump Station facility, with a small portion of the footprint extending to the south. The proposed Project Area would not be utilized for mineral extraction activities, nor is it planned for mineral extraction activities, and would not result in the loss of availability of known mineral resources. Therefore, no impact would occur.

- 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?*

No Impact. No, the proposed Project would not 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. The proposed Project would be located within the existing Foothill Pump Station facility which contains existing Metropolitan infrastructure. The proposed Project Area would not be used or zoned for mineral resource recovery (USGS 2023). The proposed Project would not result in loss of known mineral resources of local importance. Therefore, no impact would occur.

REFERENCES

City of Highland, 2006a. General Plan Conservation and Open Space Element. Available: <https://www.cityofhighland.org/DocumentCenter/View/148/Conservation-and-Open-Space-Element-PDF>, accessed December 14, 2023.

United States Geological Survey (USGS), 2023. Mineral Resources On-Line Spatial Data Interactive Map. Available online at <http://mrddata.usgs.gov/general/map.html>. Accessed on December 8, 2023.

3.13 Noise

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or 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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

This section provides an analysis of proposed Project impacts associated with noise and is based on Noise emissions calculations and modeling, attached as Appendix F.

OVERVIEW OF NOISE AND VIBRATION

Sound is a vibratory disturbance created by a moving or vibrating source that is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Crocker 2007).

Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas sound is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise (e.g., the rattling of windows from passing trucks). Typically, groundborne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Groundborne vibration is a concern almost exclusively inside buildings and is based on a number of factors, including foundation type, building construction characteristics, and acoustical adsorption of building materials (Federal Transit Administration [FTA] 2018).

Vibration amplitudes are usually expressed in peak particle velocity (PPV) for buildings and Root Mean Square (RMS) vibration velocity for people and are normally described in inches per second (in/sec). PPV

is defined as the maximum instantaneous positive or negative peak of a vibration signal (Caltrans 2020). RMS is generally the equivalent to 71 percent of the PPV. Thus, evaluating human annoyance to vibration usually results in a more restrictive vibration limit than structural damage limits. Table 3.13-1 summarizes the vibration limits recommended by the American Association of State Highway and Transportation Officials to avoid structural damage to buildings.

**TABLE 3.13-1
MAXIMUM VIBRATION LEVELS FOR PREVENTING BUILDING DAMAGE**

Type of Situation	Vibration Level (in/sec PPV)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5
NOTES: in/sec (inches per second), PPV (peak particle velocity)	
SOURCE: ESA 2024	

The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 3.13-2.

**TABLE 3.13-2
VIBRATION ANNOYANCE POTENTIAL CRITERIA FOR HUMANS (IN/SEC PPV)**

Human Response	Transient Sources	Continuous/Frequent Intermittent Sources
Severe	2.0	0.4
Strongly Perceptible	0.9	0.10
Distinctly Perceptible	0.25	0.04
Barely Perceptible	0.04	0.01
NOTES: in/sec (inches per second), PPV (peak particle velocity)		
SOURCE: Caltrans 2020		

REGULATORY FRAMEWORK

National Institute for Occupational Safety and Health

The National Institute for Occupational Safety and Health (NIOSH) establishes Recommended Exposure Limits (REL) for noise based on the best available science and practice. The NIOSH REL for noise is 85 decibels, using the A-weighted frequency response (dBA) over an 8-hour average, usually referred to as Time-Weighted Average (TWA). Exposures at or above this level are considered hazardous.

California Government Code

California Government Code Section 53091(d) states that building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.

California Government Code Section 53091(e) states that zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts.

City of Highland Municipal Code

The municipal code sets forth the standards, guidelines and procedures concerning the regulation of noise use in the City of Highland. Specifically, the code includes Title 8, Health and Safety, which includes Chapter 8.50, Noise Control, and Title 16, Land Use and Development. Title 8 directly regulates noise while Title 16 lays out land use standards that indirectly regulate noise-generating and sensitive land uses. These regulations are intended to implement the goals, objectives and policies of the General Plan; protect property values and the health and general well-being of the public; and ensure that any negative effects of noise are minimized or completely avoided. The City of Highland categorizes land uses into designated noise zones to assign appropriate interior and exterior noise standards. The appropriate interior and exterior noise standards are identified in Tables 3.13-3 and 3.13-4, respectively.

**TABLE 3.13-3
CITY OF HIGHLAND INTERIOR NOISE STANDARDS**

Type of Land Use	CNEL (dBA)
Residential	45
Educational/churches, other institutional uses	45
General offices	50
Retail stores, restaurants	55
Manufacturing, warehousing	65
Agricultural	55
Sand and Gravel Operations	75
NOTES: CNEL – community noise equivalent level, dBA – A-weighted scale SOURCE: Chapter 8.50.Noise Control, City of Highland Municipal Code	

**TABLE 3.13-4
CITY OF HIGHLAND EXTERIOR NOISE STANDARDS**

Type of Land Use	Time Interval	CNEL (dBA)
Residential	10:00 p.m. – 7:00 a.m.	55
	7:00 a.m. – 10:00 p.m.	60
Agricultural/Equestrian	10:00 p.m. – 7:00 a.m.	60
	7:00 a.m. – 10:00 p.m.	65
Commercial	10:00 p.m. – 7:00 a.m.	65
	7:00 a.m. – 10:00 p.m.	70
Manufacturing or Industrial	Any Time	75
Open Space	Any Time	75
NOTES: CNEL – community noise equivalent level, dBA – A-weighted decibel scale SOURCE: Chapter 8.50, Noise Control, City of Highland Municipal Code		

City of Highland Municipal Code Chapter 8.50.060 Exemptions, lists the activities and noise sources that shall not be subject to the provisions of Title 8.50, Noise Control. Chapter 8.50.060(K) states construction, operation, maintenance and repair of equipment, apparatus or facilities of the park and recreation department, public work projects or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the Public Utilities Commission are exempt from Chapter 8.50, Noise Control.

City of Highland Municipal Code Chapter 15.48.020 establishes the allowable hours of operation of construction activities where it states construction activities shall not commence prior to 7:00 a.m. and construction activity shall terminate no later than 7:00 p.m. Monday through Saturday with no construction activities performed during city or federal observed holidays. City of Highland Municipal Code 15.48.020(B)(4) exempts construction activities not regulated by the City of Highland from the established construction hours.

METHODOLOGY

The proposed Project construction would take approximately 12 months to complete, occurring over a 31-month period, with a break in between two construction stages. Stage 1 would occur from approximately January 2025 through November 2025, Stage 2 would occur between approximately fall 2026 through July 2027 (see Section 1.5.1, *Schedule*, for additional details). Construction activities would include pipeline trenching and installation vault and surge tank excavation, and vault and surge tank installation for both the supply and discharge pipelines. Project construction would require soil import and export during the pipeline trenching and vault and surge tank excavation components and concrete import during the vault and surge tank installation components. Construction equipment would include air compressors, cement and mortar mixers, cranes, excavators, forklifts, graders, generator sets, plate compactors, sweeper/scrubbers, tractor/loader/backhoes, and welders. Assumptions, including detailed phasing, construction employee vehicle, haul truck, concrete truck and vendor trucks and equipment list and modeling output are included in Appendix F. Noise from on-site construction activities would be generated by the use of equipment involved during various stages of the construction activities. The noise levels generated by construction equipment would vary depending on factors such as the type and number of equipment, the specific model (horsepower rating), the construction activities being performed, and the maintenance condition of the equipment. Individual pieces of construction equipment anticipated to be used during the proposed Project construction could produce maximum noise levels of 73 dBA to 85 dBA L_{max}^{12} at a reference distance of 50 feet from the noise source, as shown in Table 3.13-5. These maximum noise levels would occur when equipment is operating under full power conditions. The estimated usage factor for the equipment is also shown in Table 3.13-5. The usage factors are based on the Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide (FHWA 2006). Table 3.13-5 below provides a list of the anticipated construction equipment for the Project and typical noise emission levels at a distance of 50 feet.

¹² L_{max} : The maximum, instantaneous noise level.

**TABLE 3.13-5
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS**

Source	Reference Noise Level at 50 feet (dBA Lmax)	Estimated Usage Factor (%)
Air Compressor	80	40%
Cement and Mortar Mixer	80	50%
Cranes	85	16%
Excavator	85	40%
Forklifts	75	10%
Graders	85	40%
Generator Sets	82	50%
Plate Compactors	80	20%
Sweeper/Scrubbers	80	10%
Tractors/Loaders/Backhoes	80	40%
Welders	73	40%
NOTES: dBA – A-weighted decibel scale, Lmax – maximum, instantaneous noise level SOURCE: FHWA 2006		

To characterize construction-period noise levels, the hourly Leq noise level associated with each construction component is estimated based on the quantity, type, and usage factors for each type of equipment used during each construction component and are typically attributable to multiple pieces of equipment operating simultaneously.¹³ Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are operated concurrently. The estimated noise levels at noise sensitive receptors were calculated using the FHWA's RCNM and were based on a maximum concurrent operation of construction equipment, which is considered a worst-case evaluation.¹⁴ This is considered a worst-case scenario because the Project would typically use less equipment simultaneously, and as such would generate lower noise levels during construction.

ANALYSIS OF IMPACTS

- a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not generate substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Metropolitan, as a regional public water purveyor and utility, is exempt from local zoning and building ordinances. Despite this exemption from local land use planning jurisdiction, for purposes of full disclosure of potential impacts on the environment from the Project, the Project's compatibility with relevant general plans and local policies was analyzed.

¹³ Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically one, eight or 24 hours.

¹⁴ FHWA, Roadway Construction Noise Model, 2006.

Metropolitan is exempt from compliance with City of Highland Municipal Code Chapter 8.50, Noise Control under City of Highland Municipal code 8.50.060(K) that exempts construction, operation, maintenance and repair of equipment, apparatus or facilities of the park and recreation department, public work projects or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the Public Utilities Commission. Metropolitan is also exempt from City of Highland Municipal Code 15.48.020, where it states construction activities shall not commence prior to 7:00 a.m. and construction activity shall terminate no later than 7:00 p.m. Monday through Saturday with no construction activities performed during city or federal observed holidays, under City of Highland Municipal Code 15.48.020(B)(4) that exempts construction activities not regulated by the City of Highland from the established construction hours. Nevertheless, noise impacts are further analyzed herein. Construction activities associated with the proposed Project would be limited to Mondays through Fridays, 7:00 a.m. to 4:00 p.m., with occasional work on Saturday and nighttime activities that may be required, which would be consistent with the City's codes. Construction activities would not occur on Sundays or federal holidays. The nearest noise sensitive receptors to the proposed Project Area are R1: single-family residences located approximately 30 feet to the west past Weaver Street, R2: a single-family residence approximately 40 feet to the east along Cone Camp Road, R3: single-family residences located approximately 250 feet to the north across Greenspot Road, and R4: a single-family residence approximately 275 feet to the west of the proposed Project Area south of Greenspot Road.¹⁵

Project construction would be located approximately 30 feet from the nearest noise sensitive receptors. Noise levels attenuate (reduce) from a source at a rate between 6 dBA for acoustically "hard" sites and 7.5 dBA for "soft" sites for each doubling of distance from the reference measurement, as their energy is continuously spread out over a spherical surface (e.g., for hard surfaces, 80 dBA at 50 feet attenuates to 74 dBA at 100 feet, 68 dBA at 200 feet, etc.). Noise modeling was conducted based on the types of equipment that would be used for construction of the Project. To characterize construction-period noise levels more accurately, the average (Leq) noise levels associated with each construction stage at the listed sensitive receptors above is provided in Table 3.13-6. These average noise levels are based on the quantity, type, and usage factors for each type of equipment that would likely be used during each construction stage and are typically attributable to multiple pieces of equipment operating simultaneously.

As shown in Table 3.13-6, the Project construction noise levels would range from approximately 68 to 89 dBA at the sensitive receptor locations. As described in detail above, Metropolitan is exempt from the City's noise regulations for construction. However, exposure of sensitive receptors would potentially exceed the NIOSH's 85 dBA REL over an 8-hour period. Exposures at or above this level are considered hazardous resulting in a potentially significant impact. As the proposed Project construction would result in temporary increases in ambient noise that would meet or exceed the thresholds of significance at nearby noise sensitive receptors, construction noise impacts would be potentially significant, and mitigation measures would be required.

¹⁵ The distance to vibration sensitive receptors is based on the distance to the receptor building footprint from the Project area to the receptor building footprint, whereas the distance to distance to noise sensitive receptors is based on the distance to the receptor property line to the Project area. Thus, for the same sensitive receptor, the distance to determine vibration impacts is generally greater than the distance to determine noise impacts.

**TABLE 3.13-6
CONSTRUCTION AVERAGE LEQ NOISE LEVELS BY DISTANCE AND CONSTRUCTION COMPONENT**

Construction Component	Sound Level in dBA (Leq) at Sensitive Receptor			
	R1	R2	R3	R4
Supply Connection / Discharge Connection Components				
Pipeline Trenching and Installation	89	86	71	70
Vault Structure Excavation	87	84	69	68
Vault Structure Installation	87	84	69	68
Vault Structure Installation – Concrete	87	84	69	68
Surge Tank Excavation	89	86	71	70
NOTE: Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - 20LOG [x/50]), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation. SOURCE: ESA 2024				

Implementation of **Mitigation Measure NOI-1**, as described below, would reduce the Project's on-site construction noise impacts at noise sensitive receptors. Table 3.13-7 presents the estimated, conservative construction noise levels at the off-site receptor locations with implementation of mitigation measures. As indicated in Table 3.13-7, the construction noise levels at all receptor locations would be reduced below the significance threshold. Therefore, with implementation of **Mitigation Measure NOI-1**, impacts from construction noise would be less than significant.

**TABLE 3.13-7
CONSTRUCTION AVERAGE LEQ NOISE LEVELS BY DISTANCE AND CONSTRUCTION COMPONENT WITH MITIGATION**

Construction Component	Sound Level in dBA (Leq) at Sensitive Receptor			
	R1	R2	R3	R4
Supply Connection Components				
Pipeline Trenching and Installation	84	81	71	70
Vault Structure Excavation	82	79	69	68
Vault Structure Installation	82	79	69	68
Vault Structure Installation – Concrete	82	79	69	68
Surge Tank Excavation	84	81	71	70
Discharge Connection Components				
Pipeline Trenching and Installation	84	81	71	70
Vault Structure Excavation	82	79	69	68
Vault Structure Installation	82	79	69	68
Vault Structure Installation – Concrete	82	79	69	68
Surge Tank Excavation	84	81	71	70
NOTE: Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - 20LOG [x/50]), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation. SOURCE: ESA 2024				

Regarding construction truck and vehicle trips, construction employee commutes and trucks hauling materials and debris to and from the proposed Project Area would be the primary generator of off-site mobile sources. A maximum of approximately 18 employee trips per day, and up to 44 haul truck trips, resulting in approximately 6 haul truck trips per hour, and 6 material truck trips per day during construction (based on the air quality modeling included in Appendix B). Therefore, only a minimal increase in traffic would be entering and leaving the site would occur at any given time of construction activities. Construction of the proposed Project would temporarily generate additional truck and vehicle trips within San Bernardino and the regional circulation system. Due to the proposed Project's location, construction traffic would primarily utilize Greenspot Road to Cone Camp Road. However, as noted above, traffic levels would not substantially increase and would be temporary in nature and traffic levels would return to pre-construction conditions once construction is complete. Thus, the proposed Project's construction traffic noise impact would be less than significant.

Operational and maintenance noise would be approximately the same as that already occurring at the proposed Project Area which includes the SBVMWD Foothill Pump Station. In addition, operation and maintenance activities would generally occur between 7 am to 4 pm. Metropolitan is exempt from compliance with the local San Bernardino County noise abatement and control regulations under San Bernardino County Code Section 24.0707(e) that states that noise sources associated with maintenance and repair operations conducted by utility companies or their contractors which are deemed necessary to serve the best interest of the public and to protect the public health, welfare, and safety are exempt, including both stationary and mobile sources. Furthermore, Metropolitan is exempt from compliance with City of Highland Municipal Code Chapter 8.50, Noise Control under City of Highland Municipal code 8.50.060(K) that exempts construction, operation, maintenance and repair of equipment, apparatus or facilities of the park and recreation department, public work projects or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the Public Utilities Commission from Chapter 8.50, Noise Control of the City of Highland Municipal Code. Thus, while the proposed Project and associated operational activities are exempt from applicable County and City codes, the proposed Project would not be expected to generate significant operational noise. The stationary equipment associated with the proposed Project would mainly be located below ground. Surge tanks would be located aboveground and would not be a source of noise. Thus, on-site noise sources from proposed Project operations would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed Project in excess of established standards.

As described above, operations and maintenance activities at the Foothill Pump Station facility, including the frequency of staff visits, maintenance, shutdowns, would be similar to existing conditions once construction activities are completed. Operational activities associated with the proposed Project would involve periodic vehicle trips by Metropolitan employees for maintenance activities and the proposed Project would not increase the number of Metropolitan employees required for operations and maintenance activities. On days of proposed Project maintenance trips, proposed Project related trips would increase average daily trips on these roads by approximately 2 one-way vehicle trips, which would result in a minimal increase in traffic on proposed Project Area roadways. Consequently, proposed Project maintenance trips would not result in a perceptible increase in roadway noise, and this impact would be less than significant.

Mitigation Measures

NOI-1: Temporary Noise Barriers. Temporary noise barriers shall be used along the western and eastern property boundaries to block the line-of-sight between the construction equipment and the noise sensitive receptors.

b. Generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. No, the proposed Project would not generate excessive groundborne vibration or groundborne noise levels. Construction activities would require the use of heavy equipment and heavy truck haul trips that may produce short-term vibration. Typically, groundborne vibrations generated by construction activities attenuate rapidly with distance from the source. Therefore, construction vibration issues are typically confined to short distances from the source. Additionally, groundborne vibration is a concern almost exclusively inside buildings (FTA 2018).

The nearest vibration sensitive receptor to the proposed Project Area would be a residential use located approximately 50 feet from the proposed Project Area. The distance to vibration sensitive receptors is based on the distance from the Project area to the receptor building footprint, whereas the distance to noise sensitive receptors is based on the distance to the receptor property line to the Project area. Thus, for the same sensitive receptor, the distance to determine vibration impacts is generally greater than the distance to determine noise impacts. All other vibration sensitive receptors are located at greater distances from the proposed Project Area and would be less impacted by proposed Project vibration impacts. Proposed Project work would be temporary in nature, with activities occurring in a specific location for a short period of time. The longest construction component, surge tank installation, would occur over a two-month period. The proposed Project would utilize construction equipment such as use of loaded trucks, which would generate groundborne vibration during construction activities. The vibration velocities at various distances for loaded trucks that can generate perceptible vibration levels are identified in Table 3.13-8. Based on the information presented in Table 3.13-8, vibration velocities at the nearest sensitive receptor would be 0.027 PPV (in/sec) at 50 feet from the source of activity. At this distance, groundborne vibration generated by proposed Project construction would be below the American Association of State Highway and Transportation Official's building damage vibration level thresholds for residential buildings, as well as below the most stringent vibration threshold for historic sites or other critical locations. In addition, at this distance, groundborne vibration generated by proposed Project construction would be above the barely perceptible, but below the distinctly perceptible thresholds for continuous/frequent intermittent sources from Caltrans' Vibration Annoyance Potential Criteria for Humans. Therefore, proposed Project vibration impacts from heavy construction equipment impacts would be less than significant.

**TABLE 3.13-8
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT**

Equipment	Approximate PPV (in/sec)				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Loaded Trucks	0.076	0.027	0.020	0.015	0.010

Truck haul trips would occur during the construction period. These trucks would utilize area roadways in the proposed Project vicinity. Trucks would utilize the Greenspot Road which is paved and then turn onto

Cone Camp Road which is also paved. The nearest vibration sensitive receptors to the proposed Project Area are single-family residences located approximately 50 feet to the west of the Project Area, past Weaver Street.¹⁶ All other vibration sensitive receptors are located at greater distances from the proposed Project Area, and would be less impacted by proposed Project vibration impacts. Sensitive receptors along the construction route would be subject to temporary effects; however, these effects would be short-term during the construction period; and similar to other heavy vehicles passing on existing roadways.

Proposed Project operational activities would not generate excessive groundborne vibration or groundborne vibration noise levels. The proposed Project's day-to-day operations would include typical commercial-grade stationary mechanical equipment, which would produce vibration at low levels that would not cause structural damage, vibration impacts, or human annoyance impacts to the proposed Project structures or to the off-site environment. Groundborne vibration generated by such equipment would generate approximately up to 0.005 in/sec PPV adjacent to the proposed Project Area (FTA 2018).¹⁷ In addition, the primary sources of transient vibration would result from periodic vehicle trips by Metropolitan employees for maintenance activities where maintenance activities at the Foothill Pump Station facility, including the frequency of staff visits, maintenance, shutdowns, would be similar to existing conditions once construction activities are completed. Operations and maintenance activities for the Inland Feeder intertie would require approximately one to two vehicles during a day with maintenance activities that would visit the proposed Project Area. Therefore, structural damage and human annoyance vibration impacts from the proposed Project operation would be less than significant.

Based on the above discussions, the proposed Project would not generate excessive groundbourne vibration or groundborne noise levels at sensitive receptors. Construction and operational groundbourne vibration and noise levels would result in less-than-significant impacts.

- c. For a Project located within the vicinity of a private airstrip or 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, expose people residing or working in the Project area to excessive noise levels?*

No Impact. No, the proposed Project would not expose people residing or working in the proposed Project Area to excessive noise levels. The nearest airport to the proposed Project Area would be the Redlands Municipal Airport, located approximately 1.5 miles south of the proposed Project Area. The proposed Project consists of temporary construction activities and would not result in the presence people working in the area beyond the temporary construction period, which would take approximately 12 months to complete, occurring over a 31-month period, with a break in between two construction stages (see Section 1.5.1, *Schedule*, for additional details). Additionally, the proposed Project would not result in people residing in the proposed Project Area. Based on the lack of people that would reside or work in the area as a result of the proposed Project, no impact would occur.

¹⁶ The distance to vibration sensitive receptors is based on the distance from the Project area to the receptor building footprint, whereas the distance to noise sensitive receptors is based on the distance to the receptor property line to the Project area. Thus, for the same sensitive receptor, the distance to determine vibration impacts is generally greater than the distance to determine noise impacts.

¹⁷ This vibration estimate is based on data presented in the USDOT Federal Transit Administration, 2018

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3.14 Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. Induce substantial unplanned 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)?*

No Impact. No, the proposed Project would not directly or indirectly induce substantial unplanned growth, either directly or indirectly. The proposed Project does not propose construction of new homes or businesses. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The proposed Project is a water infrastructure project that would not increase water supply. The proposed Project would allow for greater water infrastructure reliability by improving the water distribution system flexibility to operate more efficiently in both wet years and under drought conditions.. There would be no construction of habitable or occupied structures. Operations and maintenance activities would remain similar to existing and would not require additional Metropolitan employees. Thus, the proposed Project would not directly or indirectly induce substantial unplanned population growth, and no impact would occur.

- b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

No Impact. No, the proposed Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. The proposed Project would be located along existing Metropolitan infrastructure and is owned by Metropolitan. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The majority of the proposed Project construction would occur within the existing Foothill Pump Station facility. The proposed Project does not propose occupied dwelling units. As such, the proposed Project would not displace any people or housing, and no impact would occur.

3.15 Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 the public services:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 the public services:

- a. Fire protection?*
- b. Police protection?*
- c. Schools?*
- d. Parks?*
- e. Other public facilities?*

No Impact. No, the proposed Project would not result in substantial adverse physical impacts associated with the provision of fire protection services, police protection services, schools, parks, and other public facilities. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Operation and maintenance associated with the proposed Project would be similar to existing conditions. As discussed in Population and Housing, the proposed Project would not directly or indirectly induce population growth and thus would not increase demand for fire protection services, police protection services, schools, parks, or other public facilities. Thus, the proposed Project would not result in a need for new or physically altered fire protection services, police protection services, schools, parks, or other public facilities to maintain acceptable service ratios, response times, or other performance objectives, and no impact would occur.

3.16 Recreation

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- 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?*

No Impact. No, the proposed Project would not 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. As discussed in *Population and Housing*, the proposed Project is a water infrastructure project that would not increase water supply. The proposed Project would allow for greater water infrastructure reliability by improving the water distribution system flexibility to operate more efficiently in both wet years and under drought conditions. Therefore, the proposed Project would not increase water supply to the region or otherwise indirectly induce population growth. As no population growth would occur, the proposed infrastructure improvements would not result in increased use of existing neighborhood and regional parks and would not result in substantial deterioration of existing recreational facilities. No impact would occur.

- 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?*

No Impact. No, the proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities. The proposed Project would not include growth-inducing components. The proposed Project would not include the construction of recreational facilities and no expansion of recreational facilities would occur. No impact would occur.

3.17 Transportation

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a Project, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. *Conflict with a project, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?*

No Impact. No, the proposed Project would not conflict with a project, plan, ordinance, or policy addressing the circulation system. The San Bernardino County Transportation Authority's Transportation Plan Update of 2021 identifies no major improvements to Greenspot Road. The City of Highland Circulation Element of the General Plan identifies Greenspot Road as a Major Highway and identifies goals and policies to maintain roads and level of service. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks and would be located within a Metropolitan right-of-way. The proposed Project would be accessed via Greenspot Road and Cone Camp Road, but would not involve construction within these roadways or increase traffic in ways that would increase delays. Any operations and maintenance activities to the Inland Feeder and new interconnection pipelines would be similar to existing conditions once construction activities are completed. The proposed Project would result in temporary traffic trips on local roadways during the construction period, but would not result in any changes to transit, roadways, bicycle systems, or pedestrian facilities. As a result, the proposed Project would not conflict with any project, plan, ordinance, or policy related to transit, roadway, bicycle, or pedestrian facilities in the vicinity of the proposed Project Area, and no impact would occur.

- b. *Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?*

Less-Than-Significant Impact. No, the proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). The Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* prepared in 2018, provides screening thresholds to screen out less-than-significant Vehicle Miles Traveled (VMT) impacts using project size, maps, transit availability, and the provision of affordable housing. Although the proposed Project is not a land use development project, OPR identifies a screening threshold for small projects, which indicates that

projects that generate fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. The proposed Project would generate temporary construction traffic trips over the course of the construction period. Construction activities would typically occur Monday through Friday during daytime hours, although work may be conducted on Saturdays, as needed. Nighttime construction activities may be required to shut down the Inland Feeder and install the tie-in connection. As discussed in Section 1.0, *Project Description*, the proposed Project would result in a maximum amount of approximately 44 truck trips per day. Following completion of construction activities, maintenance and operational activities at the Foothill Pump Station facility would not change and would not result in new traffic trips. As such, the proposed Project would not generate more the 110 daily trips during the construction or operational period and would not result in significant VMT impacts. Therefore, the proposed Project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and impacts would be less than significant.

- c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

No Impact. No, the proposed Project would not increase hazards due to a geometric design feature or incompatible uses. The proposed Project would not include reconfiguration of existing roadways, driveways, or intersections. Additionally, the proposed Project would not include the construction of new roadways, driveways, or intersections. The proposed Project and construction staging areas would be located mainly within the existing Foothill Pump Station facility and just outside of the fenced area to the south. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Proposed Project components outside of the fenced area would be mainly underground. The proposed Project would not result in increased hazards due to geometric design feature or incompatible uses. No impact would occur.

- d. Result in inadequate emergency access?*

No Impact. No, the proposed Project would not result in inadequate emergency access. Proposed Project access would be provided via Greenspot Road and Cone Camp Road. Proposed Project construction would occur within Metropolitan's fee property and rights-of-way and would not alter public roadways or change the existing access points at the proposed Project Area. Construction vehicles, including oversize vehicles carrying construction equipment and materials would utilize local roadways and freeways to bring equipment and materials to the site. The proposed Project would not require lane or road closures. As outlined in Appendix A, per Metropolitan's Standard Practices, the Contractor shall provide flagmen at intersections to assist trucks entering/exiting the work limits as appropriate. Based on the location of the proposed Project Area within a fenced water treatment facility or Metropolitan patrol road areas that are not accessible to the public, the proposed Project would not impede emergency access to either the proposed Project Area or the public. As such, the proposed Project would not result in inadequate emergency access and no impact would occur.

3.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ANALYSIS OF IMPACTS

- 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:*
- i) *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*
- 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?*

No Impact. No, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource (TCR). Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the CRHR. A formal consultation process with California Native American tribes regarding tribal cultural resources must commence prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project.

On December 7, 2023, Metropolitan sent letters via certified mail to four Native American tribes that had previously requested to be informed through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with those tribes under Public Resource Code Section 21080.3.1. Tribes notified include the Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians), Soboba Band of Luiseño Indians, Gabrieleño Band of Mission Indians-Kizh Nation, and San Gabriel Band of Mission Indians.

Yuhaaviatam of San Manuel Nation Tribal Archaeologist, Ms. Kristen Tousto, responded on December 12, 2023, that the proposed Project Area would be located with Yuhaaviatam of San Manuel Nation ancestral territory and requested copies of the proposed Project cultural resources report, geotechnical report, and project plans. Metropolitan Senior Environmental Specialist Michelle Morrison, MA, RPA, replied on December 13, 2023, and provided the proposed Project geotechnical report and the cultural resources report created for the construction of the Inland Feeder, which includes surveys and findings for the entire proposed Project Area. Ms. Tousto of the Yuhaaviatam of San Manuel Nation responded and noted that the Tribe does not have concerns with the proposed Project implementation, but requested the inclusion of three cultural resources mitigation measures, which consisted of the following:

- In the event cultural resources are discovered during Program activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease until the find can be assessed by a qualified archaeologist. Additionally, if discovered, the Tribe shall be notified regarding any pre-contact and/or historic-era cultural resources, so as to be provided the opportunity to provide input for significance and treatment.
- Implementation of a Monitoring and Treatment Plan with archaeological monitoring in the event a significant pre-contact and/or historic-era cultural resource is identified with review by the Tribe.
- Implementation of procedures in the event human remains or funerary objects are encountered pursuant to California Health and Safety Code Section 7050.5.

The Yuhaaviatam of San Manuel nation also requested mitigation measures for TCRs, which consisted of the following:

- Tribal notification and input with regard to significance and treatment if any pre-contact and/ cultural resources are discovered during proposed Project implementation and implementation of a cultural resources Monitoring and Treatment Plan with Native American monitoring in the event a significant resource is identified.
- Submittal of all archaeological/cultural documentation prepared for the proposed Project to Yuhaaviatam of San Manuel Nation and consultation with Yuhaaviatam of San Manuel Nation throughout the life of the proposed Project.

On December 19, 2023, Ms. Morrison contacted Ms. Tousto via telephone to discuss the Tribe's proposed mitigation measures. Ms. Morrison stated that some of the mitigation measures proposed by the Tribe are generally consistent with the standard procedures Metropolitan implements for all projects (Section 01065 of Metropolitan's construction contractor specifications), including procedures to follow in the event archaeological resources are unexpectedly encountered during construction and procedures to follow in the event human remains are unexpectedly encountered, pursuant to California Health and Safety Code Section 7050.5. Ms. Morrison also clarified that a cultural or tribal resource must be identified in the vicinity of the proposed Project Area in order to mitigate for potential impacts to a resource. Ms. Tousto concurred with

the use of Metropolitan's standard procedures pertaining to cultural resources to be incorporated into the proposed Project construction contractor specifications. The telephone conversation was summarized in a December 19, 2023, email to the Tribe.

No additional tribal cultural resource consultation requests were received during the consultation period. Metropolitan's cultural resource and archaeological resource identification efforts did not identify the presence of any prehistoric archaeological resources or resources eligible for or listed on the CRHR or local register within the proposed Project Area. Because no tribal cultural resources have been identified on or near the proposed Project Area, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined, and no impact would occur.

3.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. *Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects?*

No Impact. No, the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Once construction activities are completed, operations and maintenance would not require any expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities. Therefore, no impacts related to new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities would occur.

- b. *Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?*

No Impact. Yes, the proposed Project would have sufficient water supplies available to serve the proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years. The proposed Project would include construction of an intertie connection between the Inland Feeder and

Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Temporary water usage would be required during the construction period for dust control and other construction activities. Water usage for proposed Project construction would be temporary and would not require a long-term supply of water over multiple years. Once construction activities are completed, operations would not require additional water. Therefore, there would be no impact.

- c. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?*

No Impact. No, the proposed Project would not result in a determination by the wastewater treatment provider which serves or may serve the proposed Project, that it has adequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments. The proposed Project would include construction of an intertie connection between the Inland Feeder and Foothill Pump Station through construction of pipelines, vaults, and surge tanks. Wastewater generated during construction of the proposed Project would be minimal, consisting of portable toilet waste generated by construction employees. No new demand on an existing wastewater treatment provider would occur and no impact would occur.

- d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less-Than-Significant Impact. No, the proposed Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure. The proposed Project would generate solid waste during construction activities, including general construction debris and employee personal waste. The construction contractor would be required to dispose of solid waste in accordance with local solid waste disposal requirements. In compliance with the California Integrated Waste Management Act of 1989 and the California Green Building Code, the proposed Project would be required to divert 50 percent of its construction waste from landfills. The remaining construction solid waste would be taken to a nearby landfill to the proposed Project Area to be determined by the construction contractor. The closest landfill to the proposed Project would be the California Street Landfill, which is located in the city of Redlands approximately 4.5 miles southwest of the proposed Project Area. California Street Landfill has a permitted throughput of 829 tons per day and has a remaining capacity of 5,168,182 cubic yards (CalRecycle 2024). The landfill's cease operation date is anticipated to be in the year 2042. Therefore, the landfill would have sufficient capacity to accommodate the proposed Project's disposal needs. Following construction activities, the operation of the proposed connection pipelines would be similar to existing conditions, and no new sources of operational solid waste generation would occur as a result on the proposed Project. Based on the existing landfill capacity at the California Street Landfill and the temporary nature of solid waste generation associated with the proposed Project, impacts would be less than significant.

- e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less-Than-Significant Impact. Yes, the proposed Project would comply with federal, state, and local management and regulations to reduce solid waste. Construction activities associated with the proposed Project would generate solid waste, including general construction debris and employee personal waste. Federal solid waste regulations are codified under the Resource Conservation and Recovery Act (RCRA).

These regulations generally provide guidelines and procedures for selecting regions and agencies to handle solid waste management problems under RCRA and delegate solid waste management responsibility down to the state or local level where possible. In California, solid waste management and recycling is overseen by the California Department of Resources Recycling and Recovery (known as CalRecycle), a department within the California Environmental Protection Agency. CalRecycle's Waste Permitting, Compliance, and Mitigation Division is responsible for solid waste, waste tire, recycled content product and local government regulatory mandates and activities. The State of California has delegated solid waste management responsibility to the local level. The City of Highland contracts with Burrtec Waste Industries, Inc. to collect trash and assist the City in meeting mandated diversion goals established by the State of California.

The majority of state and local laws regarding solid waste management and reduction (AB 1826, AB 341, AB 1383, Government Code Title 7.97 68055-68055.9) pertain to state agencies or businesses, and therefore do not apply to Metropolitan as a public agency and water utility. The Project Contractor(s) would be required to comply with federal, state, and local statutes and regulations related to solid waste and would not dispose of solid waste in a manner that differs from any federal, state, or local management plans. Therefore, impacts would be less than significant.

REFERENCES

CalRecycle. 2024. SWIS Facility/Site Activity Details: California Street Landfill. Available at <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1855?siteID=2637>. Accessed February 7, 2024.

3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the Project:

- a. *Substantially impair an adopted emergency response plan or emergency evacuation plan?*
- b. *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*
- c. *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*
- d. *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

No Impact. No, the proposed Project would not be located in or near a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone (CAL FIRE, 2023). Therefore, no impacts related to wildfire in or near State Responsibility Areas or lands classified as VHFHSZ would occur.

REFERENCES

California Department of Forestry and Fire Protection (CAL FIRE), 2023. Fire Hazard Severity Zones in State Responsibility Area. Available online at <https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d00>
8. Accessed December 11, 2023.

3.21 Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (<i>Cumulatively considerable</i> means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

ANALYSIS OF IMPACTS

- a. Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not substantially degrade or impact biological resources or eliminate important examples of the major period of California history or prehistory. As discussed in Section 3.4, *Biological Resources* and Appendix C, construction of the proposed Project has the potential to affect threatened, endangered, candidate, or special status species. However, implementation of **Mitigation Measures BIO-1 through BIO-11** would ensure that impacts to biological resources are mitigated to a less than significant level. Therefore, impacts are considered less than significant with mitigation.

As discussed in Section 3.5, *Cultural Resources* and Appendix D, the proposed Project would not cause a substantial adverse change in the significance of a historical resource or of an archaeological resource, and no impacts would occur. Operations and maintenance of the proposed Project would be similar to existing conditions, and no long-term permanent impacts to biological or cultural resources would occur.

Mitigation Measures

Implement Mitigation Measures BIO-1 through BIO-11.

- b. *Does the Project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)*

Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not have impacts that are individually limited, but cumulatively considerable. A cumulative impact could occur if the proposed Project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. No direct or indirect significant impacts were identified for the proposed Project that could not be mitigated to a less than significant level. However, when combined with other projects within the vicinity, the proposed Project could result in a contribution to a potentially significant cumulative impact when combined with other projects in the area. The proposed Project would result in no impacts to agriculture and forestry resources, land use and planning, mineral resources, population and housing, public services, recreation, tribal cultural resources, and wildfire. As a result, cumulative impacts related to these resources would not occur.

In addition, impacts would be less than significant, either with or without mitigation, for aesthetics, air quality, biological resources, cultural resources, energy, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, noise, transportation, and utilities and service systems. The impacts to these environmental resource areas would be localized to the Project Area, would be able to be reduced to a less than significant level with mitigation measures. The proposed Project would occur within the existing Foothill Pump Station facility and immediately south of the facility, which is surrounded by sparse residential properties to the east and west and open space to the south. The proposed Project when considered with other projects would not result in cumulatively considerable impacts with incorporation of mitigation measures.

Operations and maintenance activities associated with the proposed Project would be similar to existing conditions and would not add to cumulative impacts. No cumulative impacts would occur.

Mitigation Measures

Implement Mitigation Measures BIO-1 through BIO-11 and NOI-1.

- c. *Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?*

Less-Than-Significant Impact with Mitigation Incorporated. No, the proposed Project would not result in environmental effects that could cause substantial adverse effects on human beings, either directly or indirectly. Based on the analysis contained within Section 3.0, *Evaluation of Environmental Effects*, the proposed Project, with implementation of mitigation measures, would not exceed any significance thresholds or result in significant impacts creating direct or indirect impacts to human beings. Impacts would be less than significant with mitigation incorporated.

Mitigation Measures

Implement Mitigation Measure NOI-1.

4.0 List of Preparers

4.1 Metropolitan Water District of Southern California

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Stephanie Villegas: Environmental Analysis

5.0 Acronyms List

AB	Assembly Bill
AQMP	air quality management plan
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CNDDDB	California Natural Diversity Database
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRA	Colorado River Aqueduct
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
DVL	Diamond Valley Lake
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GHG	qualified greenhouse gas
IS	Initial Study
ITP	Incidental Take Permit
LACM	History Museum of Los Angeles County
LST	localized significance threshold
MBTA	Migratory Bird Treaty Act of 1918
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NIOSH	National Institute for Occupational Safety and Health
NO _x	nitrogen oxides
NPDES	National Pollution Elimination Discharge System
NRCS	Natural Resource Conservation Service
OPR	Governor's Office of Planning and Research
OS	Open Space
PM ₁₀	particulate matter with a diameter of 10 microns or less
PPV	peak particle velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
REL	recommended exposure limit
RMS	root mean square
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBVMWD	San Bernardino Valley Municipal Water District
SBVWCD	San Bernardino Valley Water Conservation District
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SLF	Sacred Lands File
SWP	State Water Project
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resource
TWA	time-weighted average
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	vehicle miles traveled
VOC	volatile organic compound
WBWG	Western Bat Working Group
WDR	waste discharge requirement
WEAP	worker environmental awareness program

INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Initial Study/Mitigated Negative Declaration APPENDIX

The Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012



Report Number ER 1694

May 2024

Appendix A

Metropolitan Standard Practices

APPENDIX A

Metropolitan Standard Practices

The following are Metropolitan standard practices that are carried out as part of Section 01065 (Environmental Requirements) and Section 01565 (Noise Control) of the construction contractor specifications for all projects (Metropolitan 2022).

General

1. The Contractor shall obtain necessary local, state and federal environmental permits and shall comply with the requirements of all such permits and laws, regulations, acts, codes and ordinances.
2. The Contractor shall perform all construction activities only within the construction boundaries shown on the drawings. The construction boundaries shall be fenced, unless otherwise directed by the Engineer. Any request to use any area outside the construction boundaries for any activity will require review and approval by the Engineer.

Air Quality

1. The Contractor shall not discharge smoke, dust, or other air contaminants into the atmosphere in a quantity that exceeds the legal limit.
2. The Contractor shall use low sulfur fuels (0.5 percent by weight) for all construction vehicles and equipment.
3. The Contractor shall shut-off all idling vehicles when not in use.
4. Construction equipment shall be maintained, and properly tuned and operated in a manner so as to reduce peak emission levels.
5. Construction methods shall include dust reduction activities, including the use of water trucks in construction areas. The Contractor shall spray water on all unpaved roads as often as required to minimize dust and particulates, and as determined by Engineer. Paved streets shall be swept if silt is carried over to these roads from construction activities.
6. The Contractor shall use low emission mobile construction equipment during site preparation, grading, excavation, and construction of the project.
7. The Contractor shall use existing on-site power sources (e.g., power poles) rather than portable generators when feasible and as directed by the Engineer; or clean fuel generators shall be used rather than temporary power generators when feasible.
8. All off-road diesel-fueled construction equipment greater than 25 horsepower (hp) shall be compliant with federally mandated clean diesel engines (USEPA Tier 4), where available, in accordance with the California Air Resources Board's (CARB) In-use Off-road Diesel-fueled Fleet Regulation (Title 13 California Code of Regulations, Division 3, Chapter 9, Article 4.8). The Contractor shall provide a current copy of each unit's certified tier specifications, best available control technology

documentation, and CARB Registrations or SCAQMD operating permit, or the CARB Certificate of Reported Compliance Validation, at the time of mobilization of each unit of equipment.

9. The Contractor shall cover all trucks transporting earthen material or maintain at least two feet of freeboard.
10. The Contractor shall implement the Best Available Control Measures listed in Table 1 of the SCAQMD Rule 403 (Fugitive Dust).
11. When wind speeds, including instantaneous gusts, exceed 25 miles per hour, the Contractor shall implement and record Contingency Control Measures listed in Table 3 in SCAQMD Rule 403.

Biological Resources

1. As part of the project, the following procedures will be implemented to avoid adverse impacts to trees located within the project work limits:
 - a. Impacts to any trees located within the project work limits shall be avoided, when possible.
 - b. No trees within project work limits shall be removed, cut, or trimmed unless identified for removal on project drawings.
 - i. If trees must be removed, cut or trimmed, this activity shall be conducted per any applicable local tree ordinances and any required permits must be obtained prior to any tree removal, cutting or trimming.
 - c. The Contractor shall avoid stockpiling of materials, and driving or parking vehicles and equipment under the canopy of existing trees to protect tree root systems and avoid damage to the trees.
2. No physical disturbance of vegetation, operational structures, buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the federal Migratory Bird Treaty Act and California Fish and Game Code shall occur in the breeding season, except as necessary to respond to public health and safety concerns, or otherwise authorized by the Engineer. The breeding season extends from February 15 through August 31 for passerines and general nesting and from January 1 through August 31 for raptors.
 - a. If nesting habitat must be cleared or project activities must occur in the vicinity of nesting habitat within the breeding season as defined above, a qualified biologist shall perform a nesting bird survey no more than three days prior to clearing or removal of nesting habitat or start of project activities.
 - b. If active nests for sensitive species, raptors and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures, as appropriate, shall be established, as identified by a qualified biologist and approved by the Engineer. The buffer shall be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing shall not be conducted within this zone until the young have fledged and are no longer reliant on the nest.
 - c. A qualified biologist shall monitor active nests or nesting bird habitat within or immediately adjacent to project construction areas, and the Engineer shall provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds.

Biological Resources – Desert

1. Metropolitan conducts Desert Tortoise Awareness Training for all Metropolitan staff and contractors working at Metropolitan's desert facilities or on the CRA. Desert Tortoise Awareness Training consists of a presentation and handout discussing the protected status of the desert tortoise and its habitat, predators, and avoidance measures. Avoidance measures include, but are not limited to the following:
 - a. Work areas shall be delineated with flagging if determined necessary by the qualified staff person.
 - b. Access to project sites shall be restricted to designated existing routes of travel.
 - c. Workers shall inspect for tortoises under vehicles and equipment prior to use. If a tortoise is present, workers would only move the vehicle when the tortoise would not be injured by the vehicle or would wait for the tortoise to move out from under the vehicle.
2. Work areas shall be limited to previously disturbed ground and boundaries delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features such as burrows, identified by the qualified biologist, shall be avoided.
3. Access to the project sites shall be restricted to existing routes of travel as shown on the drawings, or as designated by the Engineer in the field. A qualified biologist will select and flag any access way in addition to established roads, to avoid burrows and to minimize disturbance of vegetation. Driving off-road is prohibited at all times.
4. Prior to commencing construction or mobilization activities, a qualified biologist will survey for desert tortoise burrows or other desert tortoise sign at each of the work sites and laydown areas. Surveys shall be conducted according to the U.S. Fish and Wildlife Service document "Preparing for Any Action that May Occur Within the Range of the Mojave Desert Tortoise. Any desert tortoise burrows located during these surveys will be flagged and fenced to ensure avoidance during construction activities.
5. Immediately prior to commencing any dewatering operations, the Contractor shall arrange a survey of the dewatering route with Metropolitan's biological monitors to ensure that no desert tortoises are at risk along the dewater route.
6. All workers shall inspect for tortoises under vehicles or stationary equipment prior to moving them. If a desert tortoise is present, the worker shall carefully move the vehicle or equipment only when the desert tortoise would not be injured or shall wait for the desert tortoise to move away on its own.
7. The Contractor shall cover all open trenches when not in use at the end of each workday, where feasible and necessary.
8. Dogs or any other pets or animals shall not be allowed in any work area.
9. All trash and food items shall be promptly contained within closed, raven-proof containers. These shall be regularly removed from the site to reduce the attractiveness of the area to ravens and other tortoise predators.
10. The Contractor and the Engineer shall review the rough grading plans, fencing, and staking to ensure that the grading is within the project footprint as described in the drawings. All temporary fencing or other markers shall be clearly visible to construction personnel.
11. The monitor will be empowered to temporarily halt construction activities and make recommendations to ensure impact minimization, compliance with the relevant provisions of all environmental permits, and that work does not take place in habitat areas outside the clearing limits.

12. Traffic speed limit shall be 20 miles per hour on all unpaved roads. The purpose of this speed limit is to enable drivers sufficient time to identify and to avoid striking and killing desert tortoises. Metropolitan will issue the Contractor a warning for the first violation of the speed limit by any of his/her employees, subcontractors, and/or suppliers. Subsequently, Metropolitan reserves the rights to expel from the project repeat speeding offenders, or a first-time offender depending on the severity of the violation as determined by Metropolitan.

Cultural Resources, Paleontological Resources, and Human Remains

1. If archaeological or paleontological resources are encountered at the project site, the Contractor shall not disturb the resources and shall immediately cease all work within 50 feet of the discovery, notify the Engineer, and protect the discovery area, as directed by the Engineer. The Engineer, with the qualified architectural historian, archaeologist and/or paleontologist, shall make a decision of validity of the discovery and designate an area surrounding the discovery as a restricted area. The Contractor shall not enter or work in the restricted area until the Engineer provides written authorization.
2. In the event that human remains are discovered during excavation/construction activity, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5(e), and Public Resources Code (PRC) Section 5097.98 will apply. The Contractor shall notify the Engineer at once and not enter or work in the restricted area until the Engineer provides written authorization.

Hazardous Materials

1. The Contractor shall clean up all spills in accordance with all applicable environmental laws and regulations and notify the Engineer immediately in the event of a spill.
2. Stationary equipment such as motors, pumps, and generators, shall be equipped with drip pans.
3. The Contractor shall handle, store, apply, and dispose of chemicals and/or herbicides consistent with all applicable federal, state and local regulations.
4. The Contractor shall dispose of all contaminated materials in a manner consistent with all applicable local, state and federal environmental laws and regulations.
5. Hazardous materials shall be stored in covered, leak-proof containers when not in use, away from storm drains and heavy traffic areas, and shall be protected from rainfall infiltration. Hazardous materials shall be stored separately from non-hazardous materials on a surface that prevents spills from permeating the ground surface, and in an area secure from unauthorized entry at all times. Incompatible materials shall be stored separately from each other.

Hydrology and Water Quality

1. The Contractor shall not allow any equipment or vehicle storage within any drainage course or channels.
2. Any material placed in areas where it could be washed into a drainage course or channel shall be removed prior to the rainy season.
3. The Contractor shall not create a nuisance or pollution as defined in the California Water Code. The Contractor shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Quality Control Board or the SWRCB, as required by the Clean Water Act (CWA).

4. Dewatering activities shall not affect any vegetation outside of the construction limits. The Contractor shall submit proposed dewatering plans to the Engineer for approval prior to any dewatering activities.

Lighting

1. The Contractor shall exercise special care to direct floodlights to shine downward. These floodlights shall also be shielded to avoid a nuisance to the surrounding areas. No lighting shall include a residence or native area in its direct beam. The Contractor shall correct lighting nuisance whenever it occurs.

Noise

1. The Contractor shall locate all noise-generating and stationary construction equipment as far as feasible from near-site residential and sensitive receivers and situated so that emitted noise is directed away from the sensitive receivers.
2. To the extent feasible, noise-generating equipment shall be oriented such that the source of noise is facing away from the nearest sensitive receivers.
3. Equipment idling time shall be reduced to five minutes on cranes and construction equipment.
4. Areas where workers gather (e.g., break areas, shift-change areas, meeting areas, and sanitary stations) will be located a minimum of 100 feet away from any residence, if feasible.
5. Parking areas shall be located a minimum of 150 feet from sensitive receivers. Parking areas within 500 feet of sensitive receivers will be posted with signs to prohibit workers from gathering during nighttime hours and to prohibit radios and music at any time.
6. Fuel deliveries shall be a minimum of 500 feet from residences or to the greatest extent feasible.
7. The Contractor shall perform all work without undue noise and shall make every effort to alleviate or prevent noise nuisances.
8. The Contractor's construction vehicles and equipment shall have mufflers. The Contractor shall equip all construction equipment, fixed and mobile, with properly operating and maintained noise mufflers and intake silencers, consistent with the manufacturer standards. Equipment shall be maintained to a minimum standard that includes engine noise baffles and mufflers that meet or exceed the original manufacturer requirements.
9. The Contractor shall utilize the following types of equipment whenever possible: electrical instead of diesel-powered equipment, hydraulic tools instead of pneumatic tools, and use of electric welders powered by remote generators.

Traffic

1. The Contractor shall prepare a traffic control plan. This plan shall address temporary traffic control for each construction site in public roadways. The requirements and procedures described in the California Department of Transportation (Caltrans) "Manual of Traffic Controls for Construction and Maintenance Work Zones" or local requirements and procedures that meet or exceed the Caltrans' Manual shall be used in the plan. If required, the Contractor shall submit the plan for review and approval by local and State traffic authorities, as appropriate.
2. As appropriate, the Contractor shall provide flagmen at intersections to assist trucks entering/exiting the work limits.

3. The Contractor shall provide appropriate advance warning signage to alert motorists or pedestrians to the potential for cross construction vehicle traffic from work limits in accordance with Caltrans standards.

Wildfire

1. Gasoline-powered or diesel-powered machinery used during construction shall be equipped with standard exhaust controls and muffling devices that shall also act as spark arrestors.
2. Fire containment and extinguishing equipment shall be located on site and shall be accessible during construction activities. Construction workers shall be trained in use of the fire suppression equipment.

Appendix B

Air Quality and Greenhouse Gas Emissions Calculations and Modeling

This appendix contains highly detailed technical information which is difficult to translate for screen reading software; therefore, the appendix has not been translated into an auditory format. If you have a disability and/or have difficulty accessing any material in this document, please contact us by mail, email, or telephone, and we will work with you to make all reasonable accommodations. Please indicate 1) the nature of the accessibility need; 2) your preferred format; 3) the material you are trying to access and its location within this document; and 4) how to reach you if questions arise while fulfilling your request. You can direct your requests to:

B1 Assumptions

Inland Feeder
Assumptions

3/11/2024

Project Land Uses

Land Use Type	CalEEMod LandUse Type	CalEEMod LandUse Subtype	Amount	Unit	Acres	Landscaping SF	Additional Notes
Project Land Uses							
Other Non-asphalt Surface	Parking	Condo/Townhouse High Rise	6.615	acres	6.615		provided by GIS team

Construction Data¹

					Workdays (5 days/week)	Worker Vehicles/Day	Workers Trips (In/Out)/Day	Vendor/Material Truck /Day (In/Out)	Vendor/Material Truck Trips/Day (In/Out)	Soil Export (CY)	Soil Import (CY)	Total Debris or Concrete Amount	Daily Debris or Concrete Amount	Total Haul (or Concrete) Trips (In/Out)	Total Haul (or Concrete) Trucks/Day	Haul (or Concrete) Trips/Day (In/Out)	Total Onsite Truck Trips	On-site Haul Truck Travel Miles	Days of Hauling	Notes
Supply Connection Components	Pipeline Trenching and Installation	Trenching	1/1/2025	1/31/2025	23	9	18	3	6	1820	1680	3,500	153	0	0	0	6	0.25	23	
	Vault Structure Excavation	Grading/Excavation	2/1/2025	2/28/2025	20	4	8			1470	500	1,970	99	0	0	0	0	0.25	20	
	Vault Structure Installation	Building Construction	3/1/2025	3/31/2025	21	5	10	4	8								8	0.25		
	Vault Structure Installation-Concrete	Building Construction	3/1/2025	3/20/2025	14							2,078	149	462	17	34	34	0.25	14	From data needs
	Surge Tank Excavation	Grading/Excavation	4/1/2025	4/30/2025	22	3	6											0.25		
	Surge Tank Excavation-Haul	Grading/Excavation	4/1/2025	4/2/2025	2					45	45	90	45	0	0	0	0	0.25	2	Adjusted haul to 2 days
	Surge Tank Installation	Building Construction	5/1/2025	6/30/2025	43	5	10	4	8								8	0.25		
	Surge Tank Installation-Concrete	Building Construction	5/1/2025	5/20/2025	14							2,078	149	462	17	34	34	0.25	14	From data needs
Discharge Connection Components	Pipeline Trenching and Installation	Trenching	7/1/2025	7/31/2025	23	9	18	3	6	3700	3100	6800	296	0	0	0	6	0.25	23	
	Vault Structure Excavation	Grading/Excavation	10/1/2026	10/31/2026	22	4	8			1470	1000	2470	113	0	0	0	0	0.25	22	
	Vault Structure Installation	Building Construction	11/1/2026	11/30/2026	21	5	10	4	8								8	0.25		
	Vault Structure Installation-Concrete	Building Construction	11/1/2026	11/19/2026	14							2,078	149	462	17	34	34	0.25	14	From data needs
	Surge Tank Excavation	Grading/Excavation	10/1/2025	10/31/2025	23	9	18											0.25		
	Surge Tank Excavation-Haul	Grading/Excavation	10/1/2025	10/2/2025	2					175	175	350	175	0	0	0	0	0.25	2	Adjusted haul to 2 days
	Surge Tank Installation	Building Construction	11/1/2025	12/31/2025	43	5	10	4	8								8	0.25		
	Surge Tank Installation-Concrete	Building Construction	11/1/2025	11/20/2025	14							2,078	149	462	17	34	34	0.25	14	From data needs
	Total Work Days				261															

1 From Client Construction Data Needs

Inland Feeder
Air Quality and Greenhouse Gas Assessment - Construction Assumptions

last updated: 3/11/2024

Off-Road Heavy-Duty Construction Equipment - Maximum Day

Supply Connection Components

Construction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	No. of hours/day	Hours of Operation/Week Per Equipment	Emissions Tier Rating or Fuel (After Mitigation if needed)	Notes/Comments
Pipeline Trenching and Installation	Cement Mortar Mixer	1	8	48		
	Excavator	1	8	48	Tier 4	
	Generator Set	1	8	48		
	Plate Compactor	2	8	48		
	Sweeper/Scrubber	1	8	48	Tier 4	
	Tractor/Loader/Backhoe	2	8	48	Tier 4	
	Welder	1	8	48	Tier 4	
Vault Structure Excavation	Excavator	1	8	48	Tier 4	
	Sweeper/Scrubber	1	8	48	Tier 4	
	Tractor/Loader/Backhoe	2	8	48	Tier 4	
Vault Structure Installation	Air Compressor	1	8	48	Tier 4	
	Crane	1	8	48	Tier 4	
	Forklift	1	8	48	Tier 4	
	Generator	1	8	48	Tier 4	
	Plate Compactor	2	8	48		
	Sweeper/Scrubber	1	8	48	Tier 4	
Surge Tank Excavation	Excavator	1	8	48	Tier 4	
	Sweeper/Scrubber	1	8	48	Tier 4	
	Tractor/Loader/Backhoe	2	8	48	Tier 4	
Surge Tank Installation	Air Compressor	1	8	48	Tier 4	
	Crane	1	8	48	Tier 4	
	Generator	1	8	48		
	Grader	1	8	48	Tier 4	
	Plate Compactor	2	8	48		
	Sweeper/Scrubber	1	8	48	Tier 4	
	Welder	1	8	48	Tier 4	

Discharge Connection Components

Discharge Connection Components	Pipeline Trenching and Installation	Cement Mortar Mixer	1	8	48	
		Excavator	1	8	48	Tier 4
		Generator Set	1	8	48	
		Plate Compactor	2	8	48	
		Sweeper/Scrubber	1	8	48	Tier 4
		Tractor/Loader/Backhoe	2	8	48	Tier 4
		Welder	1	8	48	Tier 4
	Vault Structure Excavation	Excavator	1	8	48	Tier 4
		Sweeper/Scrubber	1	8	48	Tier 4
		Tractor/Loader/Backhoe	2	8	48	Tier 4
	Vault Structure Installation	Air Compressor	1	8	48	Tier 4
		Crane	1	8	48	Tier 4
		Forklift	1	8	48	Tier 4
		Generator	1	8	48	Tier 4
		Plate Compactor	2	8	48	
		Sweeper/Scrubber	1	8	48	Tier 4
	Surge Tank Excavation	Excavator	1	8	48	Tier 4
		Sweeper/Scrubber	1	8	48	Tier 4
		Tractor/Loader/Backhoe	2	8	48	Tier 4
	Surge Tank Installation	Air Compressor	1	8	48	Tier 4
		Crane	1	8	48	Tier 4
		Generator	1	8	48	
		Grader	1	8	48	Tier 4
		Plate Compactor	2	8	48	
		Sweeper/Scrubber	1	8	48	Tier 4
		Welder	1	8	48	Tier 4

**Inland Feeder Intertie
Air Quality Assessment**

Localized Significance Thresholds
(SCAQMD, Final Localized Significance Threshold Methodology, Appendix C (2008))

Source Receptor Area 34
25 meters to Sensitive Receptor

Acres	Screening Values			Project Site
	1	2	5	6.615
Construction LSTs				
NOX	118	170	270	270.0
CO	667	972	1,746	1,746.0
PM10	4	7	14	14.0
PM2.5	3	4	8	8.0

B2 Construction Air Quality and Greenhouse Gas Calculations and Modeling

[illegible]

Localized Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10 lb/day	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
Pipeline Trenching and Installation	0.37	4.89	9.36	0.02	0.09	2.60	2.69	0.08	0.26	0.34
Vault Structure Excavation	0.11	1.99	6.44	0.01	0.02	1.49	1.50	0.02	0.15	0.17
Vault Structure Installation	0.35	4.18	9.92	0.02	0.08	4.01	4.09	0.08	0.40	0.48
Surge Tank Excavation	0.11	1.87	6.34	0.01	0.02	0.74	0.76	0.02	0.07	0.09
Surge Tank Installation	0.43	5.34	14.27	0.02	0.09	3.90	3.99	0.09	0.39	0.48
Pipeline Trenching and Installation	0.39	5.19	9.61	0.02	0.09	4.65	4.73	0.08	0.46	0.55
Vault Structure Excavation	0.11	2.02	6.47	0.01	0.02	1.67	1.69	0.02	0.17	0.18
Vault Structure Installation	0.35	4.15	9.90	0.02	0.08	3.90	3.98	0.08	0.39	0.47
Surge Tank Excavation	0.12	2.15	6.57	0.01	0.02	2.42	2.43	0.02	0.24	0.26
Surge Tank Installation	0.42	5.37	14.29	0.02	0.09	3.90	3.99	0.09	0.39	0.48
Project Daily Maximum Emissions	0.43	5.37	14.29	0.02	0.09	4.65	4.73	0.09	0.46	0.55
Threshold Exceed Threshold (Y/N)?	None	270.0	1746.0	None	None	None	14.0	None	None	8.0

Summer	Onsite Emissions										Offsite Emissions									
	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10 lb/day	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Exhaust PM10 lb/day	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
Source																				
Pipeline Trenching and Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vault Structure Excavation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vault Structure Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Surge Tank Excavation	0.108	1.868	6.340	0.008	0.016	0.743	0.760	0.016	0.074	0.091	0.039	0.689	0.840	0.004	0.007	0.227	0.234	0.007	0.059	0.066
Surge Tank Installation	0.426	5.340	14.274	0.025	0.092	3.897	3.989	0.087	0.390	0.477	0.103	3.135	2.509	0.018	0.034	0.830	0.863	0.034	0.222	0.256
Pipeline Trenching and Installation	0.386	5.192	9.614	0.016	0.089	4.645	4.734	0.083	0.465	0.548	0.153	3.930	3.561	0.022	0.041	1.102	1.144	0.041	0.293	0.334
Vault Structure Excavation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vault Structure Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Surge Tank Excavation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Surge Tank Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Regional Emissions		ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5									
Pipeline Trenching and Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									
Vault Structure Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									
Vault Structure Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									
Surge Tank Excavation	0.15	2.56	7.18	0.01	0.02	0.97	0.99	0.02	0.13	0.16										
Surge Tank Installation	0.53	8.48	16.78	0.04	0.13	4.73	4.85	0.12	0.61	0.73										
Pipeline Trenching and Installation	0.54	9.12	13.17	0.04	0.13	5.75	5.88	0.12	0.76	0.88										
Vault Structure Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Vault Structure Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Surge Tank Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Surge Tank Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Project Daily Maximum Emissions		0.54	9.12	16.78	0.04	0.13	5.75	5.88	0.12	0.76	0.88									

Winter	Onsite Emissions										Offsite Emissions												
	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5			
Source	lb/day										lb/day												
Pipeline Trenching and Installation	0.371	4.892	9.355	0.015	0.088	2.601	2.690	0.083	0.260	0.343	0.113	2.206	2.199	0.012	0.022	0.694	0.717	0.022	0.181	0.203			
Vault Structure Excavation	0.111	1.994	6.442	0.009	0.016	1.487	1.503	0.016	0.149	0.165	0.057	1.424	1.219	0.007	0.014	0.401	0.415	0.014	0.106	0.120			
Vault Structure Installation	0.352	4.180	9.917	0.018	0.080	4.014	4.095	0.076	0.401	0.477	0.098	3.278	2.329	0.018	0.034	0.830	0.863	0.034	0.222	0.256			
Surge Tank Excavation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Surge Tank Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Pipeline Trenching and Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Vault Structure Excavation	0.112	2.022	6.466	0.009	0.016	1.672	1.689	0.016	0.167	0.184	0.050	1.536	1.262	0.008	0.016	0.438	0.454	0.016	0.116	0.132			
Vault Structure Installation	0.350	4.151	9.897	0.018	0.080	3.897	3.977	0.076	0.390	0.465	0.078	3.151	2.249	0.018	0.034	0.830	0.863	0.034	0.222	0.256			
Surge Tank Excavation	0.117	2.146	6.567	0.009	0.017	2.416	2.433	0.017	0.242	0.258	0.114	2.338	2.275	0.012	0.023	0.717	0.740	0.023	0.187	0.210			
Surge Tank Installation	0.423	5.368	14.287	0.025	0.092	3.897	3.989	0.087	0.390	0.477	0.098	3.278	2.329	0.018	0.034	0.830	0.863	0.034	0.222	0.256			
Regional Emissions																							
	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5													
Pipeline Trenching and Installation	0.48	7.10	11.55	0.03	0.11	3.30	3.41	0.11	0.44	0.55													
Vault Structure Excavation	0.17	3.42	7.66	0.02	0.03	1.89	1.92	0.03	0.25	0.29													
Vault Structure Installation	0.45	7.46	12.25	0.04	0.11	4.84	4.96	0.11	0.62	0.73													
Surge Tank Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00													
Surge Tank Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00													
Pipeline Trenching and Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00													
Vault Structure Excavation	0.16	3.56	7.73	0.02	0.03	2.11	2.14	0.03	0.28	0.32													
Vault Structure Installation	0.43	7.30	12.15	0.04	0.11	4.73	4.84	0.11	0.61	0.72													
Surge Tank Excavation	0.23	4.48	8.84	0.02	0.04	3.13	3.17	0.04	0.43	0.47													
Surge Tank Installation	0.52	8.65	16.62	0.04	0.13	4.73	4.85	0.12	0.61	0.73													
Project Daily Maximum Emissions											0.52	8.65	16.62	0.04	0.13	4.84	4.96	0.12	0.62	0.73			

Winter	Onsite Emissions										Offsite Emissions										
	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5	
Source	lb/day										lb/day										
Pipeline Trenching and Installation	0.371	4.892	9.355	0.015	0.088	2.601	2.690	0.083	0.260	0.343	0.113	2.206	2.199	0.012	0.022	0.694	0.717	0.022	0.181	0.203	
Vault Structure Excavation	0.111	1.994	6.442	0.009	0.016	1.487	1.503	0.016	0.149	0.165	0.057	1.424	1.219	0.007	0.014	0.401	0.415	0.014	0.106	0.120	
Vault Structure Installation	0.352	4.180	9.917	0.018	0.080	4.014	4.095	0.076	0.401	0.477	0.098	3.278	2.329	0.018	0.034	0.830	0.863	0.034	0.222	0.256	
Surge Tank Excavation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Surge Tank Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Pipeline Trenching and Installation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Vault Structure Excavation	0.112	2.022	6.466	0.009	0.016	1.672	1.689	0.016	0.167	0.184	0.050	1.536	1.262	0.008	0.016	0.438	0.454	0.016	0.116	0.132	
Vault Structure Installation	0.350	4.151	9.897	0.018	0.080	3.897	3.977	0.076	0.390	0.465	0.078	3.151	2.249	0.018	0.034	0.830	0.863	0.034	0.222	0.256	
Surge Tank Excavation	0.117	2.146	6.567	0.009	0.017	2.416	2.433	0.017	0.242	0.258	0.114	2.338	2.275	0.012	0.023	0.717	0.740	0.023	0.187	0.210	
Surge Tank Installation	0.423	5.368	14.287	0.025	0.092	3.897	3.989	0.087	0.390	0.477	0.098	3.278	2.329	0.018	0.034	0.830	0.863	0.034	0.222	0.256	
Regional Emissions	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5											
Pipeline Trenching and Installation	0.48	7.10	11.55	0.03	0.11	3.30	3.41	0.11	0.44	0.55											
Vault Structure Excavation	0.17	3.42	7.66	0.02	0.03	1.89	1.92	0.03	0.25	0.29											
Vault Structure Installation	0.45	7.46	12.25	0.04	0.11	4.84	4.96	0.11	0.62	0.73											
Surge Tank Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
Surge Tank Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
Pipeline Trenching and Installation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
Vault Structure Excavation	0.16	3.56	7.73	0.02	0.03	2.11	2.14	0.03	0.28	0.32											
Vault Structure Installation	0.43	7.30	12.15	0.04	0.11	4.73	4.84	0.11	0.61	0.72											
Surge Tank Excavation	0.23	4.48	8.84	0.02	0.04	3.13	3.17	0.04	0.43	0.47											
Surge Tank Installation	0.52	8.65	16.62	0.04	0.13	4.73	4.85	0.12	0.61	0.73											
Project Daily Maximum Emissions	0.52	8.65	16.62	0.04	0.13	4.84	4.96	0.12	0.62	0.73											

Inland Feeder

Construction Annual GHG

Year	Metric Tons/Year			Total
	CalEEMod On-Road Mobile Sources	CalEEMod Construction Equipment and Onsite Trucks	Water + Construction Office	
2025	142	165	12	319
2026	33	26	4	63
Total	175	192	16	383
Amortized - 30 years	6	6	1	13

Inland Feeder
Construction GHG
Construction Water Energy Estimates

Supply Connection Components

Discharge Connection Components

			Total Construction Water Use	Electricity Demand from	Annual Electricity
Source	Acreage/Day	Number of Days	(Mgal)	Water Conveyance (MWh)	Demand from Water Conveyance (MWh)
Pipeline Trenching and Installation	6.615	23	0.456	3.1	1.2
Vault Structure Excavation	6.615	20	0.397	2.7	1.1
Surge Tank Excavation	6.615	22	0.437	3.0	1.2
Pipeline Trenching and Installation	6.615	23	0.456	3.1	1.2
Vault Structure Excavation	6.615	21	0.417	2.8	1.1
Surge Tank Excavation	6.615	23	0.456	3.1	1.2
Total			2.620	17.8	7.2
	CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		3044	725	1537	1501

Sources and Assumptions:

CalEEMod Appendix G, Table G-32

-Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

-Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of landscaped area within the Los Angeles area (Mediterranean climate), which assumes high water demand landscaping materials and an irrigation system efficiency of 85%.
Factor is therefore $(20.94 \text{ GAL/SF/year}) \times (43,560 \text{ SF/acre}) / (365 \text{ days/year}) / (0.85) = 2,940 \text{ gallons/acre/day}$, rounded up to 3,000 gallons/acre/day.

(U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. "Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor - Landscaped Areas with High Water Requirements).

Electricity Emission Factor (MT CO ₂ /MWh)	Electricity Emission Factor (lbs CO ₂ /MWh)	Total GHG Emissions Per Year
2.41E-01	631.98	1.73
(MT CH ₄ /MWh)	(lbs CH ₄ /MWh)	
1.50E-05	0.033	
(MT N ₂ O/MWh)	(lbs N ₂ O/MWh)	
1.81E-06	0.004	

Inland Feeder
Construction GHG Analysis

Temporary Construction Trailer - Electricity				
Land Use	Square Feet	Energy Use per year (kWh)	Total Energy Use (kWh)	Energy Use per SF
General Office	2,000	40,936	40,936.20	20.5
Note: Energy use per sf is derived from CalEEMod User Guide, Appendix G, Table G-28 for the Statewide average for General Office Building land use				

Electricity Emission Factor (MT CO ₂ /MWh)	Electricity Emission Factor (lbs CO ₂ /MWh)	Total GHG Emissions Per Year	Year	Proportion of Year Worked	GHG Emissions Per Construction Year
0.24	531.98	9.92	2025	1.00	9.92
(MT CH ₄ /MWh)	(lbs CH ₄ /MWh)		2026	0.25	2.48
1.50E-05	0.033				
(MT N ₂ O/MWh)	(lbs N ₂ O/MWh)				
1.81E-06	0.004				

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Inland Feeder-Con-T4
Construction Start Date	1/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	11.2
Location	8650 Cone Camp Rd, Highland, CA 92346, USA
County	San Bernardino-South Coast
City	Highland
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5168
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	6.62	Acre	6.62	0.00	0.00	—	—	—

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1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.99	0.54	9.12	16.8	0.04	0.13	5.75	5.88	0.12	0.76	0.88	—	5,136	5,136	0.46	0.57	8.02	5,291
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.88	0.52	8.65	16.6	0.04	0.13	4.73	4.85	0.12	0.61	0.73	—	5,127	5,127	0.41	0.46	0.16	5,276
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.23	3.32	7.11	0.02	0.05	1.39	1.44	0.05	0.19	0.23	—	1,815	1,815	0.13	0.13	0.87	1,859
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.04	0.61	1.30	< 0.005	0.01	0.25	0.26	0.01	0.03	0.04	—	300	300	0.02	0.02	0.14	308

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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2025	0.99	0.54	9.12	16.8	0.04	0.13	5.75	5.88	0.12	0.76	0.88	—	5,136	5,136	0.46	0.57	8.02	5,291
2026	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.88	0.52	8.65	16.6	0.04	0.13	4.73	4.85	0.12	0.61	0.73	—	5,127	5,127	0.41	0.46	0.16	5,276
2026	0.79	0.43	7.30	12.1	0.04	0.11	4.73	4.84	0.11	0.61	0.72	—	4,452	4,452	0.37	0.44	0.15	4,593
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.34	0.23	3.32	7.11	0.02	0.05	1.39	1.44	0.05	0.19	0.23	—	1,815	1,815	0.13	0.13	0.87	1,859
2026	0.06	0.03	0.57	1.13	< 0.005	0.01	0.32	0.33	0.01	0.04	0.05	—	347	347	0.03	0.03	0.18	357
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.06	0.04	0.61	1.30	< 0.005	0.01	0.25	0.26	0.01	0.03	0.04	—	300	300	0.02	0.02	0.14	308
2026	0.01	0.01	0.10	0.21	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	57.4	57.4	< 0.005	0.01	0.03	59.1

3. Construction Emissions Details

3.1. SC-Vault Structure Excavation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	1.75	6.24	0.01	0.02	—	0.02	0.02	—	0.02	—	894	894	0.04	0.01	—	897

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Dust From Material Movement:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.03	0.01	0.24	0.20	< 0.005	< 0.005	1.48	1.48	< 0.005	0.15	0.15	—	42.0	42.0	0.02	0.01	< 0.005	44.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.0	49.0	< 0.005	< 0.005	—	49.2
Dust From Material Movement:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.11	8.11	< 0.005	< 0.005	—	8.14
Dust From Material Movement:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.40
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.47	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	103	103	< 0.005	< 0.005	0.01	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.02	1.38	0.75	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,107	1,107	0.12	0.18	0.06	1,164

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Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.74	5.74	< 0.005	< 0.005	0.01	5.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.6	60.6	0.01	0.01	0.06	63.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.0	10.0	< 0.005	< 0.005	0.01	10.6

3.3. SC-Surge Tank Excavation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	1.75	6.24	0.01	0.02	—	0.02	0.02	—	0.02	—	894	894	0.04	0.01	—	897
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53.9	53.9	< 0.005	< 0.005	—	54.1

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Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.92	8.92	< 0.005	< 0.005	—	8.95
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.47	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	84.5	84.5	< 0.005	< 0.005	0.31	85.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.74	4.74	< 0.005	< 0.005	0.01	4.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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3.5. SC-Surge Tank Excavation-Haul (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.12	0.10	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	20.8	20.8	0.01	< 0.005	0.01	22.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02

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Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.01	0.66	0.37	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	553	553	0.06	0.09	1.18	583
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.03	3.03	< 0.005	< 0.005	< 0.005	3.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.53

3.7. DC-Vault Structure Excavation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Off-Road Equipment	0.10	0.10	1.75	6.24	0.01	0.02	—	0.02	0.02	—	0.02	—	894	894	0.04	0.01	—	897
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.03	0.01	0.27	0.22	< 0.005	< 0.005	1.67	1.67	< 0.005	0.17	0.17	—	46.5	46.5	0.02	0.01	< 0.005	49.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53.9	53.9	< 0.005	< 0.005	—	54.1
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	2.79	2.79	< 0.005	< 0.005	< 0.005	2.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.92	8.92	< 0.005	< 0.005	—	8.95
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.49
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102

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Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.15	0.02	1.50	0.83	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,222	1,222	0.12	0.20	0.06	1,284
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.19	6.19	< 0.005	< 0.005	0.01	6.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.09	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	73.7	73.7	0.01	0.01	0.06	77.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.01	12.8

3.9. DC-Surge Tank Excavation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	1.75	6.24	0.01	0.02	—	0.02	0.02	—	0.02	—	894	894	0.04	0.01	—	897
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.3	56.3	< 0.005	< 0.005	—	56.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.33	9.33	< 0.005	< 0.005	—	9.36
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.06	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	233	233	0.01	0.01	0.02	235
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.03	15.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.46	2.46	< 0.005	< 0.005	< 0.005	2.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. DC-Surge Tank Excavation-Haul (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.05	0.01	0.39	0.32	< 0.005	< 0.005	2.41	2.41	< 0.005	0.24	0.24	—	68.2	68.2	0.03	0.01	< 0.005	72.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.39
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.23	0.04	2.25	1.22	0.01	0.02	0.48	0.50	0.02	0.13	0.15	—	1,798	1,798	0.19	0.29	0.10	1,891
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.85	9.85	< 0.005	< 0.005	0.01	10.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	< 0.005	1.72

3.13. SC-Vault Structure Installation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.33	3.52	9.38	0.02	0.08	—	0.08	0.08	—	0.08	—	1,665	1,665	0.07	0.01	—	1,671
Onsite truck	0.01	< 0.005	0.12	0.10	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	21.0	21.0	0.01	< 0.005	< 0.005	22.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.20	0.54	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.8	95.8	< 0.005	< 0.005	—	96.1
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	1.20	1.20	< 0.005	< 0.005	< 0.005	1.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.9	15.9	< 0.005	< 0.005	—	15.9
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	129	129	0.01	< 0.005	0.01	131
Vendor	0.02	0.01	0.29	0.15	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	247	247	0.02	0.04	0.02	259
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.54	7.54	< 0.005	< 0.005	0.01	7.64
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.35	2.35	< 0.005	< 0.005	< 0.005	2.46
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. SC-Vault Structure Installation-Concrete (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.06	0.02	0.51	0.42	< 0.005	< 0.005	3.15	3.16	< 0.005	0.32	0.32	—	89.2	89.2	0.04	0.02	< 0.005	94.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.40	3.40	< 0.005	< 0.005	< 0.005	3.62
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.60
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.30	0.05	2.94	1.59	0.02	0.03	0.63	0.66	0.03	0.17	0.20	—	2,352	2,352	0.25	0.39	0.13	2,473
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.2	90.2	0.01	0.01	0.08	94.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.01	15.7

3.17. SC-Surge Tank Installation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.40	4.73	13.8	0.02	0.09	—	0.09	0.09	—	0.09	—	2,289	2,289	0.09	0.02	—	2,296
Onsite truck	0.01	< 0.005	0.12	0.10	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	20.8	20.8	0.01	< 0.005	0.01	22.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.56	1.62	< 0.005	0.01	—	0.01	0.01	—	0.01	—	270	270	0.01	< 0.005	—	271
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.46	2.46	< 0.005	< 0.005	< 0.005	2.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	44.6	44.6	< 0.005	< 0.005	—	44.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.78	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	141	141	0.01	< 0.005	0.52	143
Vendor	0.02	0.01	0.27	0.15	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	247	247	0.02	0.04	0.69	259
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.03	15.7
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.04	30.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.56	2.56	< 0.005	< 0.005	< 0.005	2.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.81	4.81	< 0.005	< 0.005	0.01	5.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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3.19. SC-Surge Tank Installation-Concrete (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.06	0.02	0.49	0.41	< 0.005	< 0.005	3.15	3.16	< 0.005	0.32	0.32	—	88.3	88.3	0.04	0.01	0.06	93.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.40	3.40	< 0.005	< 0.005	< 0.005	3.62
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.60
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.30	0.05	2.82	1.58	0.02	0.03	0.63	0.66	0.03	0.17	0.20	—	2,351	2,351	0.25	0.38	4.99	2,477
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.2	90.2	0.01	0.01	0.08	94.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.01	15.7

3.21. DC-Vault Structure Installation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.33	3.52	9.38	0.02	0.08	—	0.08	0.08	—	0.08	—	1,665	1,665	0.07	0.01	—	1,670
Onsite truck	0.01	< 0.005	0.12	0.10	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	20.7	20.7	0.01	< 0.005	< 0.005	21.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.20	0.54	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	95.8	95.8	< 0.005	< 0.005	—	96.1
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.25
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.9	15.9	< 0.005	< 0.005	—	15.9

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Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.54	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.01	128
Vendor	0.02	< 0.005	0.27	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	243	243	0.02	0.04	0.02	254
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.39	7.39	< 0.005	< 0.005	0.01	7.48
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	0.02	14.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.22	1.22	< 0.005	< 0.005	< 0.005	1.24
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.31	2.31	< 0.005	< 0.005	< 0.005	2.42
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. DC-Vault Structure Installation-Concrete (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.06	0.02	0.51	0.42	< 0.005	< 0.005	3.15	3.16	< 0.005	0.32	0.32	—	87.9	87.9	0.04	0.01	< 0.005	93.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.55
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.59
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.28	0.03	2.83	1.56	0.02	0.03	0.63	0.66	0.03	0.17	0.20	—	2,309	2,309	0.23	0.37	0.12	2,425
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	88.5	88.5	0.01	0.01	0.08	93.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4

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3.25. DC-Surge Tank Installation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.40	4.73	13.8	0.02	0.09	—	0.09	0.09	—	0.09	—	2,289	2,289	0.09	0.02	—	2,296
Onsite truck	0.01	< 0.005	0.12	0.10	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	21.0	21.0	0.01	< 0.005	< 0.005	22.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.56	1.62	< 0.005	0.01	—	0.01	0.01	—	0.01	—	270	270	0.01	< 0.005	—	271
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.46	2.46	< 0.005	< 0.005	< 0.005	2.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	44.6	44.6	< 0.005	< 0.005	—	44.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	129	129	0.01	< 0.005	0.01	131
Vendor	0.02	0.01	0.29	0.15	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	247	247	0.02	0.04	0.02	259
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.03	15.7
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.04	30.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.56	2.56	< 0.005	< 0.005	< 0.005	2.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.81	4.81	< 0.005	< 0.005	0.01	5.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. DC-Surge Tank Installation-Concrete (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.06	0.02	0.51	0.42	< 0.005	< 0.005	3.15	3.16	< 0.005	0.32	0.32	—	89.2	89.2	0.04	0.02	< 0.005	94.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.40	3.40	< 0.005	< 0.005	< 0.005	3.62
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.60
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.30	0.05	2.94	1.59	0.02	0.03	0.63	0.66	0.03	0.17	0.20	—	2,352	2,352	0.25	0.39	0.13	2,473
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.2	90.2	0.01	0.01	0.08	94.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.01	15.7

3.29. SC-Pipeline Trenching and Installation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.36	4.47	9.01	0.01	0.09	—	0.09	0.08	—	0.08	—	1,331	1,331	0.05	0.01	—	1,335
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.05	0.02	0.42	0.35	< 0.005	< 0.005	2.60	2.60	< 0.005	0.26	0.26	—	73.5	73.5	0.03	0.01	< 0.005	78.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.28	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	—	83.8	83.8	< 0.005	< 0.005	—	84.1
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	4.60	4.60	< 0.005	< 0.005	< 0.005	4.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.9	13.9	< 0.005	< 0.005	—	13.9
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.81
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.06	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	233	233	0.01	0.01	0.02	235
Vendor	0.02	< 0.005	0.21	0.11	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	185	185	0.01	0.03	0.01	194
Hauling	0.19	0.03	1.90	1.03	0.01	0.02	0.41	0.43	0.02	0.11	0.13	—	1,522	1,522	0.16	0.25	0.08	1,600
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.03	15.1
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.7	11.7	< 0.005	< 0.005	0.01	12.2
Hauling	0.01	< 0.005	0.12	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.9	95.9	0.01	0.02	0.09	101
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.46	2.46	< 0.005	< 0.005	< 0.005	2.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	2.02
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.9	15.9	< 0.005	< 0.005	0.01	16.7

3.31. DC-Pipeline Trenching and Installation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.36	4.47	9.01	0.01	0.09	—	0.09	0.08	—	0.08	—	1,331	1,331	0.05	0.01	—	1,335
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.09	0.03	0.72	0.61	< 0.005	< 0.005	4.64	4.64	< 0.005	0.46	0.46	—	130	130	0.06	0.02	0.09	138

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.28	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	—	83.8	83.8	< 0.005	< 0.005	—	84.1
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.28	0.28	< 0.005	0.03	0.03	—	8.22	8.22	< 0.005	< 0.005	< 0.005	8.73
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.9	13.9	< 0.005	< 0.005	—	13.9
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	1.36	1.36	< 0.005	< 0.005	< 0.005	1.45
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.40	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	254	254	0.01	0.01	0.94	257
Vendor	0.02	0.01	0.21	0.11	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	185	185	0.01	0.03	0.52	194
Hauling	0.39	0.06	3.65	2.05	0.02	0.04	0.82	0.85	0.04	0.22	0.26	—	3,042	3,042	0.32	0.50	6.46	3,205
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.03	15.1
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.7	11.7	< 0.005	< 0.005	0.01	12.2
Hauling	0.02	< 0.005	0.24	0.13	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	192	192	0.02	0.03	0.18	202
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.46	2.46	< 0.005	< 0.005	< 0.005	2.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	2.02
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.7	31.7	< 0.005	0.01	0.03	33.4

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

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Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
SC-Vault Structure Excavation	Grading	2/1/2025	2/28/2025	5.00	20.0	—
SC-Surge Tank Excavation	Grading	4/1/2025	4/30/2025	5.00	22.0	—
SC-Surge Tank Excavation-Haul	Grading	4/1/2025	4/2/2025	5.00	2.00	—

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DC-Vault Structure Excavation	Grading	10/1/2026	10/31/2026	5.00	22.0	—
DC-Surge Tank Excavation	Grading	10/1/2025	10/31/2025	5.00	23.0	—
DC-Surge Tank Excavation-Haul	Grading	10/1/2025	10/2/2025	5.00	2.00	—
SC-Vault Structure Installation	Building Construction	3/1/2025	3/31/2025	5.00	21.0	—
SC-Vault Structure Installation-Concrete	Building Construction	3/1/2025	3/20/2025	5.00	14.0	—
SC-Surge Tank Installation	Building Construction	5/1/2025	6/30/2025	5.00	43.0	—
SC-Surge Tank Installation-Concrete	Building Construction	5/1/2025	5/20/2025	5.00	14.0	—
DC-Vault Structure Installation	Building Construction	11/1/2026	11/30/2026	5.00	21.0	—
DC-Vault Structure Installation-Concrete	Building Construction	11/1/2026	11/19/2026	5.00	14.0	—
DC-Surge Tank Installation	Building Construction	11/1/2025	12/31/2025	5.00	43.0	—
DC-Surge Tank Installation-Concrete	Building Construction	11/1/2025	11/20/2025	5.00	14.0	—
SC-Pipeline Trenching and Installation	Trenching	1/1/2025	1/31/2025	5.00	23.0	—
DC-Pipeline Trenching and Installation	Trenching	7/1/2025	7/31/2025	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
SC-Vault Structure Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
SC-Vault Structure Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37

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SC-Vault Structure Excavation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
SC-Surge Tank Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
SC-Surge Tank Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
SC-Surge Tank Excavation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
DC-Vault Structure Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
DC-Vault Structure Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
DC-Vault Structure Excavation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
DC-Surge Tank Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
DC-Surge Tank Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
DC-Surge Tank Excavation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
SC-Vault Structure Installation	Forklifts	Diesel	Tier 4 Final	1.00	8.00	82.0	0.20
SC-Vault Structure Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
SC-Vault Structure Installation	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
SC-Vault Structure Installation	Air Compressors	Diesel	Tier 4 Final	1.00	8.00	37.0	0.48
SC-Vault Structure Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
SC-Vault Structure Installation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
SC-Surge Tank Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

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SC-Surge Tank Installation	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
SC-Surge Tank Installation	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
SC-Surge Tank Installation	Air Compressors	Diesel	Tier 4 Final	1.00	8.00	37.0	0.48
SC-Surge Tank Installation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
SC-Surge Tank Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
SC-Surge Tank Installation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
DC-Vault Structure Installation	Forklifts	Diesel	Tier 4 Final	1.00	8.00	82.0	0.20
DC-Vault Structure Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
DC-Vault Structure Installation	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
DC-Vault Structure Installation	Air Compressors	Diesel	Tier 4 Final	1.00	8.00	37.0	0.48
DC-Vault Structure Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
DC-Vault Structure Installation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
DC-Surge Tank Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
DC-Surge Tank Installation	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
DC-Surge Tank Installation	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
DC-Surge Tank Installation	Air Compressors	Diesel	Tier 4 Final	1.00	8.00	37.0	0.48
DC-Surge Tank Installation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41

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DC-Surge Tank Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
DC-Surge Tank Installation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
SC-Pipeline Trenching and Installation	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
SC-Pipeline Trenching and Installation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
SC-Pipeline Trenching and Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
SC-Pipeline Trenching and Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
SC-Pipeline Trenching and Installation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
SC-Pipeline Trenching and Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
SC-Pipeline Trenching and Installation	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
DC-Pipeline Trenching and Installation	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
DC-Pipeline Trenching and Installation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
DC-Pipeline Trenching and Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
DC-Pipeline Trenching and Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
DC-Pipeline Trenching and Installation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
DC-Pipeline Trenching and Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
DC-Pipeline Trenching and Installation	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45

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5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
SC-Vault Structure Excavation	—	—	—	—
SC-Vault Structure Excavation	Worker	8.00	18.5	LDA,LDT1,LDT2
SC-Vault Structure Excavation	Vendor	—	10.2	HHDT,MHDT
SC-Vault Structure Excavation	Hauling	16.0	20.0	HHDT
SC-Vault Structure Excavation	Onsite truck	16.0	0.25	HHDT
SC-Surge Tank Excavation	—	—	—	—
SC-Surge Tank Excavation	Worker	6.00	18.5	LDA,LDT1,LDT2
SC-Surge Tank Excavation	Vendor	—	10.2	HHDT,MHDT
SC-Surge Tank Excavation	Hauling	0.00	20.0	HHDT
SC-Surge Tank Excavation	Onsite truck	—	—	HHDT
SC-Surge Tank Excavation-Haul	—	—	—	—
SC-Surge Tank Excavation-Haul	Worker	0.00	18.5	LDA,LDT1,LDT2
SC-Surge Tank Excavation-Haul	Vendor	—	10.2	HHDT,MHDT
SC-Surge Tank Excavation-Haul	Hauling	8.00	20.0	HHDT
SC-Surge Tank Excavation-Haul	Onsite truck	8.00	0.25	HHDT
DC-Vault Structure Excavation	—	—	—	—
DC-Vault Structure Excavation	Worker	8.00	18.5	LDA,LDT1,LDT2
DC-Vault Structure Excavation	Vendor	—	10.2	HHDT,MHDT
DC-Vault Structure Excavation	Hauling	18.0	20.0	HHDT
DC-Vault Structure Excavation	Onsite truck	18.0	0.25	HHDT
DC-Surge Tank Excavation	—	—	—	—
DC-Surge Tank Excavation	Worker	18.0	18.5	LDA,LDT1,LDT2
DC-Surge Tank Excavation	Vendor	—	10.2	HHDT,MHDT

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DC-Surge Tank Excavation	Hauling	0.00	20.0	HHDT
DC-Surge Tank Excavation	Onsite truck	—	—	HHDT
DC-Surge Tank Excavation-Haul	—	—	—	—
DC-Surge Tank Excavation-Haul	Worker	0.00	18.5	LDA,LDT1,LDT2
DC-Surge Tank Excavation-Haul	Vendor	—	10.2	HHDT,MHDT
DC-Surge Tank Excavation-Haul	Hauling	26.0	20.0	HHDT
DC-Surge Tank Excavation-Haul	Onsite truck	26.0	0.25	HHDT
SC-Vault Structure Installation	—	—	—	—
SC-Vault Structure Installation	Worker	10.0	18.5	LDA,LDT1,LDT2
SC-Vault Structure Installation	Vendor	8.00	10.2	HHDT,MHDT
SC-Vault Structure Installation	Hauling	0.00	20.0	HHDT
SC-Vault Structure Installation	Onsite truck	8.00	0.25	HHDT
SC-Vault Structure Installation-Concrete	—	—	—	—
SC-Vault Structure Installation-Concrete	Worker	0.00	18.5	LDA,LDT1,LDT2
SC-Vault Structure Installation-Concrete	Vendor	0.00	10.2	HHDT,MHDT
SC-Vault Structure Installation-Concrete	Hauling	34.0	20.0	HHDT
SC-Vault Structure Installation-Concrete	Onsite truck	34.0	0.25	HHDT
SC-Surge Tank Installation	—	—	—	—
SC-Surge Tank Installation	Worker	10.0	18.5	LDA,LDT1,LDT2
SC-Surge Tank Installation	Vendor	8.00	10.2	HHDT,MHDT
SC-Surge Tank Installation	Hauling	0.00	20.0	HHDT
SC-Surge Tank Installation	Onsite truck	8.00	0.25	HHDT
SC-Surge Tank Installation-Concrete	—	—	—	—
SC-Surge Tank Installation-Concrete	Worker	0.00	18.5	LDA,LDT1,LDT2

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SC-Surge Tank Installation-Concrete	Vendor	0.00	10.2	HHDT,MHDT
SC-Surge Tank Installation-Concrete	Hauling	34.0	20.0	HHDT
SC-Surge Tank Installation-Concrete	Onsite truck	34.0	0.25	HHDT
DC-Vault Structure Installation	—	—	—	—
DC-Vault Structure Installation	Worker	10.0	18.5	LDA,LDT1,LDT2
DC-Vault Structure Installation	Vendor	8.00	10.2	HHDT,MHDT
DC-Vault Structure Installation	Hauling	0.00	20.0	HHDT
DC-Vault Structure Installation	Onsite truck	8.00	0.25	HHDT
DC-Vault Structure Installation-Concrete	—	—	—	—
DC-Vault Structure Installation-Concrete	Worker	0.00	18.5	LDA,LDT1,LDT2
DC-Vault Structure Installation-Concrete	Vendor	0.00	10.2	HHDT,MHDT
DC-Vault Structure Installation-Concrete	Hauling	34.0	20.0	HHDT
DC-Vault Structure Installation-Concrete	Onsite truck	34.0	0.25	HHDT
DC-Surge Tank Installation	—	—	—	—
DC-Surge Tank Installation	Worker	10.0	18.5	LDA,LDT1,LDT2
DC-Surge Tank Installation	Vendor	8.00	10.2	HHDT,MHDT
DC-Surge Tank Installation	Hauling	0.00	20.0	HHDT
DC-Surge Tank Installation	Onsite truck	8.00	0.25	HHDT
DC-Surge Tank Installation-Concrete	—	—	—	—
DC-Surge Tank Installation-Concrete	Worker	0.00	18.5	LDA,LDT1,LDT2
DC-Surge Tank Installation-Concrete	Vendor	0.00	10.2	HHDT,MHDT
DC-Surge Tank Installation-Concrete	Hauling	34.0	20.0	HHDT
DC-Surge Tank Installation-Concrete	Onsite truck	34.0	0.25	HHDT
SC-Pipeline Trenching and Installation	—	—	—	—

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SC-Pipeline Trenching and Installation	Worker	18.0	18.5	LDA,LDT1,LDT2
SC-Pipeline Trenching and Installation	Vendor	6.00	10.2	HHDT,MHDT
SC-Pipeline Trenching and Installation	Hauling	22.0	20.0	HHDT
SC-Pipeline Trenching and Installation	Onsite truck	28.0	0.25	HHDT
DC-Pipeline Trenching and Installation	—	—	—	—
DC-Pipeline Trenching and Installation	Worker	18.0	18.5	LDA,LDT1,LDT2
DC-Pipeline Trenching and Installation	Vendor	6.00	10.2	HHDT,MHDT
DC-Pipeline Trenching and Installation	Hauling	44.0	20.0	HHDT
DC-Pipeline Trenching and Installation	Onsite truck	50.0	0.25	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
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5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
SC-Vault Structure Excavation	1,470	500	6.62	0.00	—
SC-Surge Tank Excavation	—	—	0.00	0.00	—

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SC-Surge Tank Excavation-Haul	45.0	45.0	6.62	0.00	—
DC-Vault Structure Excavation	1,470	1,000	6.62	0.00	—
DC-Surge Tank Excavation	—	—	0.00	0.00	—
DC-Surge Tank Excavation-Haul	175	175	6.62	0.00	—
SC-Pipeline Trenching and Installation	1,820	1,680	6.62	0.00	—
DC-Pipeline Trenching and Installation	3,700	3,100	6.62	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	6.62	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.8	annual days of extreme heat
Extreme Precipitation	4.35	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	24.9	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi. Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

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Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

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Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	100
AQ-PM	53.1
AQ-DPM	20.0
Drinking Water	85.2
Lead Risk Housing	1.49
Pesticides	65.6
Toxic Releases	39.4
Traffic	12.6
Effect Indicators	—
CleanUp Sites	40.8
Groundwater	0.00
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	33.2

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Solid Waste	0.00
Sensitive Population	—
Asthma	61.5
Cardio-vascular	77.6
Low Birth Weights	59.3
Socioeconomic Factor Indicators	—
Education	8.99
Housing	14.7
Linguistic	17.3
Poverty	6.73
Unemployment	78.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	76.41473117
Employed	79.81521879
Median HI	79.66123444
Education	—
Bachelor's or higher	62.03002695
High school enrollment	100
Preschool enrollment	21.73745669
Transportation	—
Auto Access	96.70216861
Active commuting	3.721288336
Social	—

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2-parent households	68.31772103
Voting	80.48248428
Neighborhood	—
Alcohol availability	76.9665084
Park access	35.82702425
Retail density	12.48556397
Supermarket access	33.02964199
Tree canopy	13.92275119
Housing	—
Homeownership	92.2751187
Housing habitability	53.70204029
Low-inc homeowner severe housing cost burden	81.45771847
Low-inc renter severe housing cost burden	0.51328115
Uncrowded housing	76.50455537
Health Outcomes	—
Insured adults	85.66662389
Arthritis	0.0
Asthma ER Admissions	27.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	76.7
Cognitively Disabled	29.3
Physically Disabled	94.1

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Heart Attack ER Admissions	24.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	45.3
SLR Inundation Area	0.0
Children	79.8
Elderly	81.3
English Speaking	58.4
Foreign-born	17.5
Outdoor Workers	47.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	71.1
Traffic Density	13.5
Traffic Access	23.0
Other Indices	—
Hardship	27.1
Other Decision Support	—
2016 Voting	84.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	43.0
Healthy Places Index Score for Project Location (b)	71.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	see construction assumptions
Construction: Off-Road Equipment	see construction assumptions
Construction: Dust From Material Movement	see construction assumptions
Construction: Trips and VMT	see construction assumptions

Appendix C

Biological Resources

C1 Biological Resources Technical Report



March 18, 2024

Ms. Michelle Morrison
Environmental Planning Section
The Metropolitan Water District of Southern California
700 North Alameda Street,
Los Angeles, California 90012

Subject: Inland Feeder - Foothill Pump Station Intertie Project Biological Resources Technical Report

Dear Ms. Michelle Morrison:

This letter report documents the findings of a reconnaissance-level biological resources survey conducted by Environmental Science Associates (ESA) for the Metropolitan Water District of Southern California's (Metropolitan) Inland Feeder Foothill Pump Station Intertie Project (project). This report provides an overview of the proposed project, survey methodology, applicable regulatory framework, existing conditions, conclusions and impact assessments, and recommended avoidance and minimization measures.

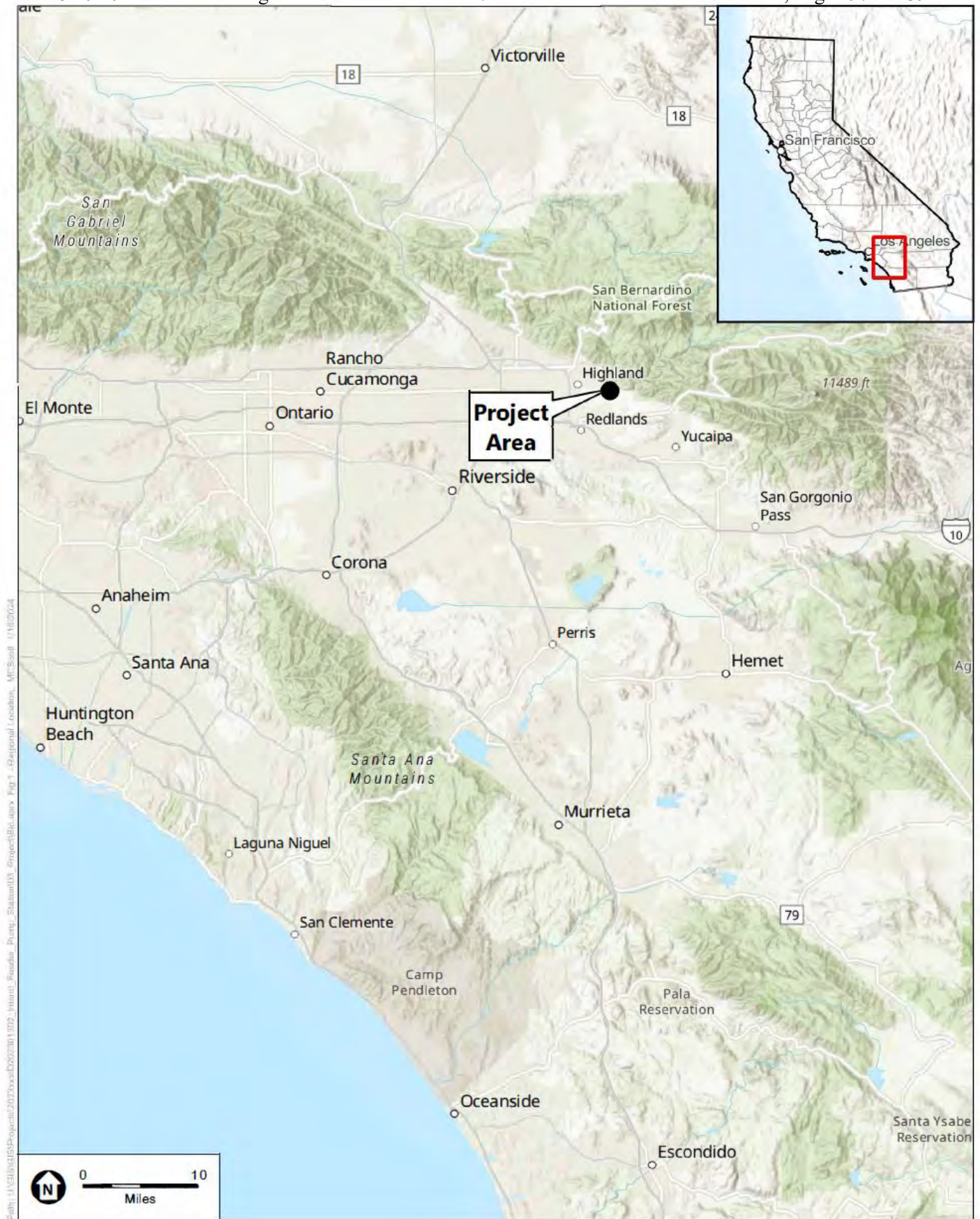
Project Location/Study Area

The approximately 6.61-acre project area is generally located north of the Santa Ana River, south of Greenspot Road, east of State Route 210, and west of State Route 38 in the City of Highland, San Bernardino County, California. More specifically, the project area is bounded by Greenspot Road and residential development to the north, the Santa Ana River and open space to the south, and large-lot, single family residences and open space to the east and west (**Figure 1, Regional Location**). The project area includes an existing fenced and graded triangular property that encompasses Metropolitan and San Bernardino Valley Municipal Water District (SBVMWD) facilities. The 59.96-acre study area includes the project area and a 500-ft buffer surrounding the project area (**Figure 2, Project Location**).

Project Description

To enhance Metropolitan's water delivery flexibility in response to drought conditions and limited State Water Project (SWP) allocations, Metropolitan is proposing two new pipeline connections between the Inland Feeder and the SBVMWD-Inland Feeder Interconnection Line 1 and SBVMWD's Foothill Pump Station (FPS).

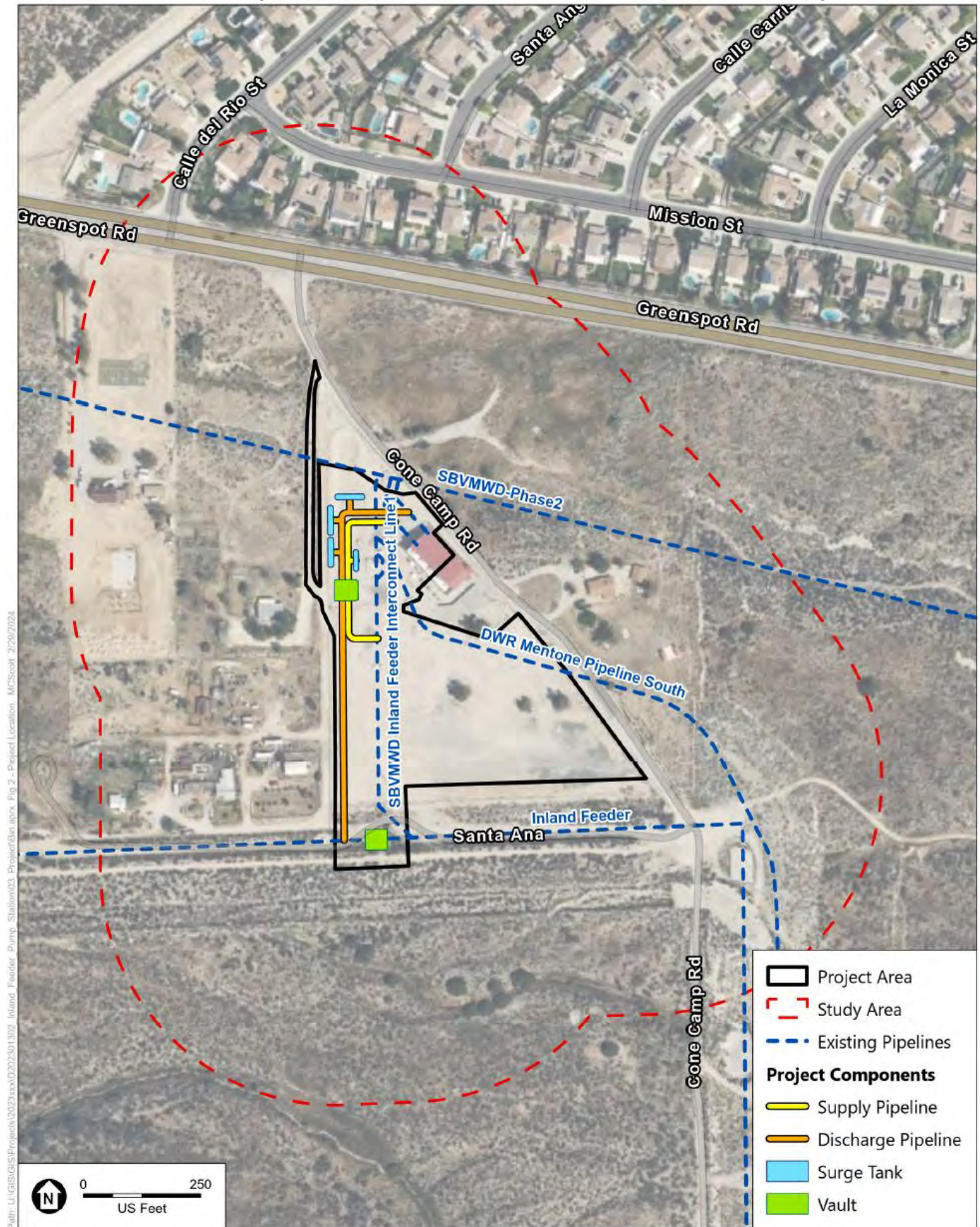
Two new underground pipelines (supply connection and discharge connection), two underground vaults, four aboveground hydropneumatic surge tanks (HST), and associated appurtenant structures would be constructed (Figure 2) in two stages as outlined below.



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 1
Regional Location



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 2
Project Location

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Stage 1 would include construction of the components mainly located within the existing fenced facility. This would include construction of an approximately 400-foot long, 54-inch supply connection pipeline, an approximately 750-foot long, 54-inch discharge connection pipeline, a 50-foot by 40-foot underground vault, four aboveground HSTs on concrete pads, and appurtenant structures. Additionally, the proposed project would include installation of a new fence-line along the western boundary of the project area to accommodate the supply and discharge connection components.

Stage 2 construction activities would occur along the southern portion of the project area, located mainly outside of the fenced facility, and would include a 45-foot by 40-foot underground vault, a portion of the 54-inch discharge connection pipeline, all associated appurtenant structures, and final connections to the existing Inland Feeder pipeline.

Most of the construction activities would occur during daylight hours, occasional nighttime construction activities may be required to shutdown the Inland Feeder and install the tie-in connection. Operation and maintenance activities at the FPS and Inland Feeder would be similar to existing conditions.

Background

In October 2022, ECORP conducted a protocol-level San Bernardino kangaroo rat (SBKR; *Dipodomys merriami parvus*) trapping survey within portions of the proposed project area, and five rodent species were captured: SBKR, San Diego pocket mouse (*Chaetodipus fallax*), Bryant's woodrat (*Neotoma bryanti*), northern Baja deer mouse (*Peromyscus fraterculus*), and deer mouse (*Peromyscus maniculatus*) (ECORP 2022). SBKR is federally listed as endangered, state candidate for listing as endangered, and a species of special concern. As a result, the project team, in coordination with U.S. Fish and Wildlife Service (USFWS), performed additional biological surveys described below.

In March 2023, ESA conducted a SBKR burrow survey to determine if potential SBKR burrows occur within the project area (ESA 2023a). Based on the findings of the SBKR burrow survey conducted within the southern portion of the project area and in coordination with USFWS, subsequent motion-detecting cameras were recommended to identify kangaroo rat presence within the updated temporary and permanent impact areas. Thus, the nighttime activity survey was designed to confirm where exclusionary fencing should be installed within the southern extent of the project site.

The nighttime small mammal activity surveys were conducted in March and July 2023 using nighttime-vision equipment to determine nighttime small mammal activity in the project area (ESA 2023b; **Attachment A, Results of the 2023 Nighttime Small Mammal Activity Surveys**). The March 2023 nighttime small mammal activity survey was conducted within the exclusion fencing areas previously proposed for the project, while the July 2023 nighttime small mammal activity survey was conducted within a larger area and includes burrows where previous SBKR were captured to serve as a control. Although two small mammals, California ground squirrel and desert cottontail, were frequently detected by cameras in the nighttime activity survey area during the

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March 2023 nighttime small mammal activity survey effort, no rodent species were observed. The July 2023 nighttime activity survey effort resulted in the detection of four rodent genus including: deer mouse (*Peromyscus* sp.), kangaroo rat (*Dipodomys* sp.), pocket mouse (*Chaetodipus* sp.), and woodrat (*Neotoma* sp.). Kangaroo rat individuals were confirmed at six of the 15 camera locations. There is no way to confirm the kangaroo rat to species level during the photo captures. Both SBKR and Dulzura kangaroo rat (*Dipodomys simulans*) ranges overlap with the project area and study area. Therefore, additional trapping efforts would be required to confirm the species of kangaroo rat detected during the nighttime small mammal activity survey. However, it should be noted that the 2022 protocol-level SBKR trapping survey captured SBKR individuals (ECORP 2022).

Methodology

Database Review

Prior to visiting the site, ESA conducted a query of the following resource inventory databases to analyze the potential for sensitive resources to occur within the study area:

- California Department of Fish and Wildlife (CDFW). 2023a. California Natural Diversity Data Base (CNDDB). Database was queried for special status species records in the Redlands USGS 7.5-minute quadrangle and eight surrounding quadrangles including San Bernadino North, Harrison Mtn, Keller Peak, Yucaipa, El Casco, Sunnymead, Riverside East, and San Bernardino South. Accessed December 21, 2023.
- California Department of Fish and Wildlife (CDFW). 2023b. California Sensitive Natural Communities List. Sacramento, CA: CDFW, Natural Heritage Division, July 5, 2022. Accessed December 21, 2023. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline>.
- California Native Plant Society (CNPS). 2023. Inventory of Rare and Endangered Vascular Plants of California. Database was queried for special status species records in the Redlands USGS 7.5-minute quadrangle and eight surrounding quadrangles including San Bernardino North, Harrison Mtn, Keller Peak, Yucaipa, El Casco, Sunnymead, Riverside East, and San Bernadino South. Accessed December 21, 2023.
- ECORP. 2022. Results of a Focused San Bernardino Kangaroo Rat Trapping Survey Conducted for the Metropolitan Water District of Southern California's Foothill Pump Station Project, Highland, San Bernardino, California. November 18, 2022.
- ESA. 2023a. Results of a San Bernardino Kangaroo Rat Burrow Survey for Metropolitan's Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California. April 13, 2023.
- ESA. 2023b. Results of Nighttime Small Mammal Activity Surveys for Metropolitan's Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California. November 16, 2023.

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- Natural Resource Conservation Service (NRCS). 2023. Web Soil Survey. Accessed December 21, 2023. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- U.S. Fish and Wildlife Service (USFWS). 2023a. Critical Habitat Portal. Accessed December 21, 2023. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265_ad4fe09893cf75b8dbfb77.
- USFWS (U.S. Fish and Wildlife Service). 2023. National Wetland Inventory. Accessed December 21, 2023. <https://www.fws.gov/wetlands/data/Mapper.html>.

Biological Resources Assessment

The reconnaissance-level biological resources survey was conducted by ESA biologists Brandon Mukogawa and Amanda French on December 22, 2023. Weather conditions were overcast and included a low of 64° Fahrenheit (F) and high of 64°F with wind speeds between 0-7 miles per hour. The survey was conducted within the project area and a surrounding 500-foot buffer, collectively referred to as the study area (Figure 2). The survey consisted of meandering transects throughout the study area to characterize and map plant communities and land use, and to determine the potential for special-status plants and wildlife to occur. All incidental, visual observations of flora and fauna, including sign (i.e., presence of scat) as well as any audible detections, were noted during the site visit and are discussed in the Existing Conditions section, below.

Natural communities and land use were characterized to map their extent and quantify their amounts within the study area using ArcGIS software. Plant taxonomy followed Hickman (1993), as updated in *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012), and plant community descriptions were characterized using *A Manual of California Vegetation* (Sawyer et al. 2009). Plant communities, land uses, and habitats not identified within the manuals were characterized based on species dominance. Representative photographs were taken during the survey and are provided in **Attachment B, Representative Photographs**.

Regulatory Framework

Federal and State Endangered Species Acts

The Federal Endangered Species Act (FESA) provides guidance for conserving federally listed species and the ecosystems upon which they depend. Section 9 of the FESA and its implementing regulations prohibit the “take” of any federally-listed endangered or threatened plant or animal species, unless otherwise authorized by federal regulations. “Take” includes the destruction of a listed species’ habitat. Section 9 also prohibits several specified activities with respect to endangered and threatened plants.

The California Endangered Species Act (CESA) mandates that state agencies do not approve a project that would jeopardize the continued existence of species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. CESA also prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under CESA. Similar to the FESA, CESA contains a procedure

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for the CDFW to issue an incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of native birds “by any means or manner to pursue, hunt, take, capture (or) kill” any migratory birds except as permitted by regulations issued by the USFWS. The term “take” is defined by USFWS regulation to mean to “pursue, hunt, shoot, wound, kill, trap, capture or collect” any migratory bird or any part, nest, or egg of any migratory bird covered by the conventions, or to attempt those activities.

Clean Water Act

In accordance with Section 404 of the Clean Water Act (CWA), the United States Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Any activity resulting in the placement of “fill” material within waters of the U.S. requires a permit from USACE; “fill” is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the Regional Water Quality Control Board (RWQCB).

Porter-Cologne Water Quality Control Act

In the absence of waters of the U.S., waters may be regulated under the Porter-Cologne Water Quality Control Act if project activities, discharges, or proposed activities or discharges could affect California's surface, coastal, or ground waters. The permit submitted by the applicant and issued by RWQCB is a Waste Discharge Requirement (WDR) in the absence of waters of the U.S.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: “No person will import into this state, or take, possess, or sell within this state” any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land use to allow the CDFW to salvage any rare or endangered native plant material.

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Section 15380 of the California Environmental Quality Act Guidelines

Although threatened and endangered species are protected by specific federal and state statutes, State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code (i.e., CESA) dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency must review a project that may have a significant effect on, for example, a species that has not been formally listed by either USFWS or CDFW; CEQA provides such an agency with the ability to protect the non-listed species from the potential impacts of a project. CEQA also calls for the protection of other significant resources, such as certain natural communities, for example. Although these resources are not currently protected, CEQA calls for an assessment of whether they would be affected and requires findings of significance regarding potential losses.

Sections 3503 and 3513 of the California Fish and Game Code

Section 3503 of the Fish and Game Code (FGC) prohibits the killing of birds or the destruction of bird nests. Birds of prey are protected under Section 3503.5 of the FGC, which provides that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Section 3513 of the FGC prohibits 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. Migratory birds include all native birds in the United States, except those non-migratory game species, such as quail and turkey, which are managed by individual states.

Section 1602 of the California Fish and Game Code

Section 1602 of the FGC requires submittal of a Notification of Lake or Streambed Alteration for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement may include, but are not limited to, excavation or “fill” placed within a channel, vegetation clearing, installation of culverts and bridge supports, and bank reinforcement.

City of Highland Municipal Codes

Chapter 8.36 of the City of Highland Municipal Code prevents the removal, relocation, or destruction of any heritage tree within City of Highland’s city limits without a proper tree removal permit and associated

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environmental review (Chapter 8.36, Heritage Trees). Section 8.36.020 of the City of Highland Municipal Code defines heritage trees as any tree that meets the following criteria:

- A. All woody plants in excess of 15 feet in height and having a single trunk circumference of 24 inches or more, as measured four and one-half feet above ground level; or
- B. Multi-trunk tree(s) having a total circumference of 30 inches or more, measured four and one-half feet from ground level; or
- C. A stand of trees, the nature of which makes each dependent upon the others for survival; or
- D. Any other tree as may be deemed historically or culturally significant by the community development director or designees because of size, condition, location, or aesthetic qualities.

The definition of historic landmark includes any tree designated as an historic landmark by city council action. Trees which bear fruit or nuts (with the exemption of trees planted in a grove) and trees planted, grown, and/or held for sale by licensed nurseries and/or tree farms are exempt from the provisions of the City's code.

Tree removal is defined by the City's code as a an act which will cause a heritage tree to die, as determined by a tree expert, including, acts that inflict damage upon root systems, bark or other parts of tree by fire, application of toxic substances or operation of equipment or machinery, improper watering, changing the natural grade of the drip line area around the trunk, or attachment of signs or artificial material piercing the bark of the tree by means of nails, spikes, or other piercing objects. A Tree Removal Permit is required for the removal of all heritage trees within the city limits. A Landmark Alteration Permit is required, in addition to a Tree Removal Permit, for the removal of all trees designated as historic landmarks. The permit requirement may be waived in the case that the tree is determined to be a public health, safety, and welfare concern. Chapter 16.64.040 (Heritage Tree Preservation Requirements) further outlines the requirements of this provision, including the protection of existing trees. No trees are proposed to be removed or impacted during project activities.

Chapter 16.64.050 (Riparian Plant Conservation) establishes regulations to promote healthy and abundant riparian habitats within the City of Highland and works alongside existing regulations enforced by CDFW. This ordinance generally prohibits the removal of any riparian vegetation within 25 feet of the dripline of riparian vegetation adjacent to a "blueline stream" as indicated by the USGS Quadrangle (topographic map) or identified as a protected riparian area in a community or specific plan. The removal of any vegetation within 25 feet of the drip line of riparian vegetation along a blueline stream requires a tree removal permit and shall be subject to environmental review. The provisions of this section apply to both private and public lands within the City limits, with exceptions for emergency flood control operations and authorized water conservation measures established and authorized by an appropriate independent special district with such responsibility. No riparian vegetation is proposed to be removed during project activities.

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Existing Conditions

Topography and Soils

Topography within the study area generally slopes in an east-west orientation, ranging between an elevation of 1,570 feet above mean sea level (amsl) and 1,500 feet amsl. A total of two soil types were mapped within the study area (see **Figure 3, Soils**), including Hanford coarse sandy loam, 2-9% slopes, and Soboba stony loamy sand, 2-9% slopes (NRCS 2023). A brief description of each soil type is provided below:

Hanford coarse sandy loam, 2-9% slopes

This soil type was mapped in the northern corner of the study area. It consists of well drained soils consisting of alluvium derived from granite. The depth to duripan is more than 80 inches, and the typical soil profile consists of sandy loam 0–12 inches and fine sandy loam 12–60 inches.

Soboba stony loamy sand, 2-9% slopes

This soil type was mapped in the majority of the study area. It consists of excessively drained soils consisting of alluvium derived from granite. The depth to duripan is more than 80 inches, and the typical soil profile consists of stony loamy sand 0–10 inches, very stony loamy sand 10–24 inches, and very stony sand 24–60 inches.

Natural Communities and Land Cover Types

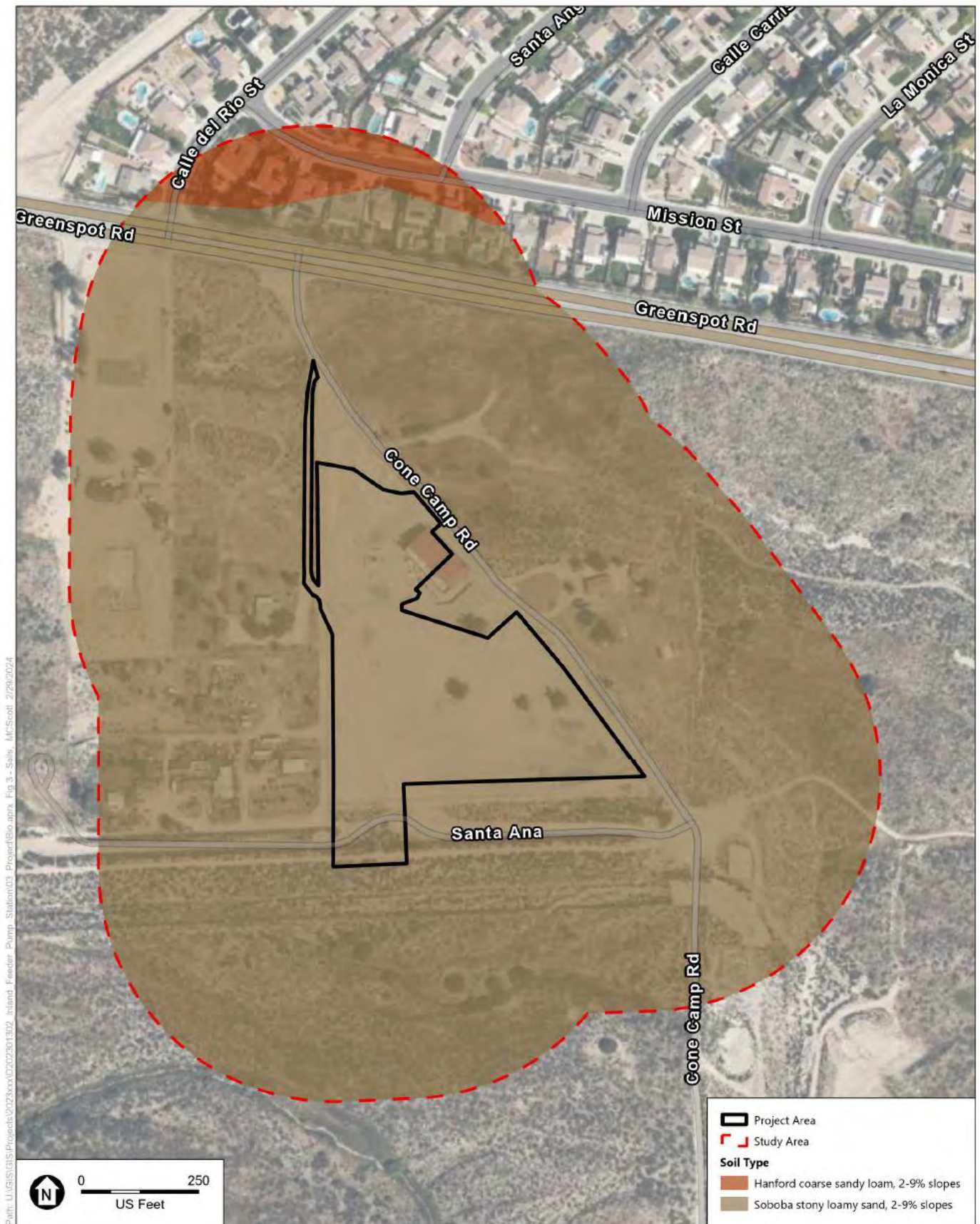
The natural communities and land cover types characterized and mapped within the study area are depicted in **Figure 4, Natural Communities and Land Cover Types**, and their respective acreages are provided in **Table 1, Natural Communities and Land Cover Types**. A complete list of plant species observed within the study area is provided in **Attachment C, Floral and Faunal Compendia**. Each natural community and land cover type is described in detail below.

Annual Grasses and Forbs

Annual grasses and forbs occur in two sections of the study area: the northeastern and western portions of the 500-ft buffer outside of the project area. This community is characterized by substantial disturbance including over excavation and grading and exists in a successional state due to regular mowing activities that stopped in 2014. It supports a dense herbaceous layer primarily comprised of non-native grasses and forbs such as wild oats (*Avena sp.*), ripgut brome (*Bromus diandrus*), and short-podded mustard (*Hirschfeldia incana*), interspersed with native shrub and forb species such as dove weed (*Croton setiger*) and slender buckwheat (*Eriogonum gracile* var. *gracile*).

Brittle Bush Scrub

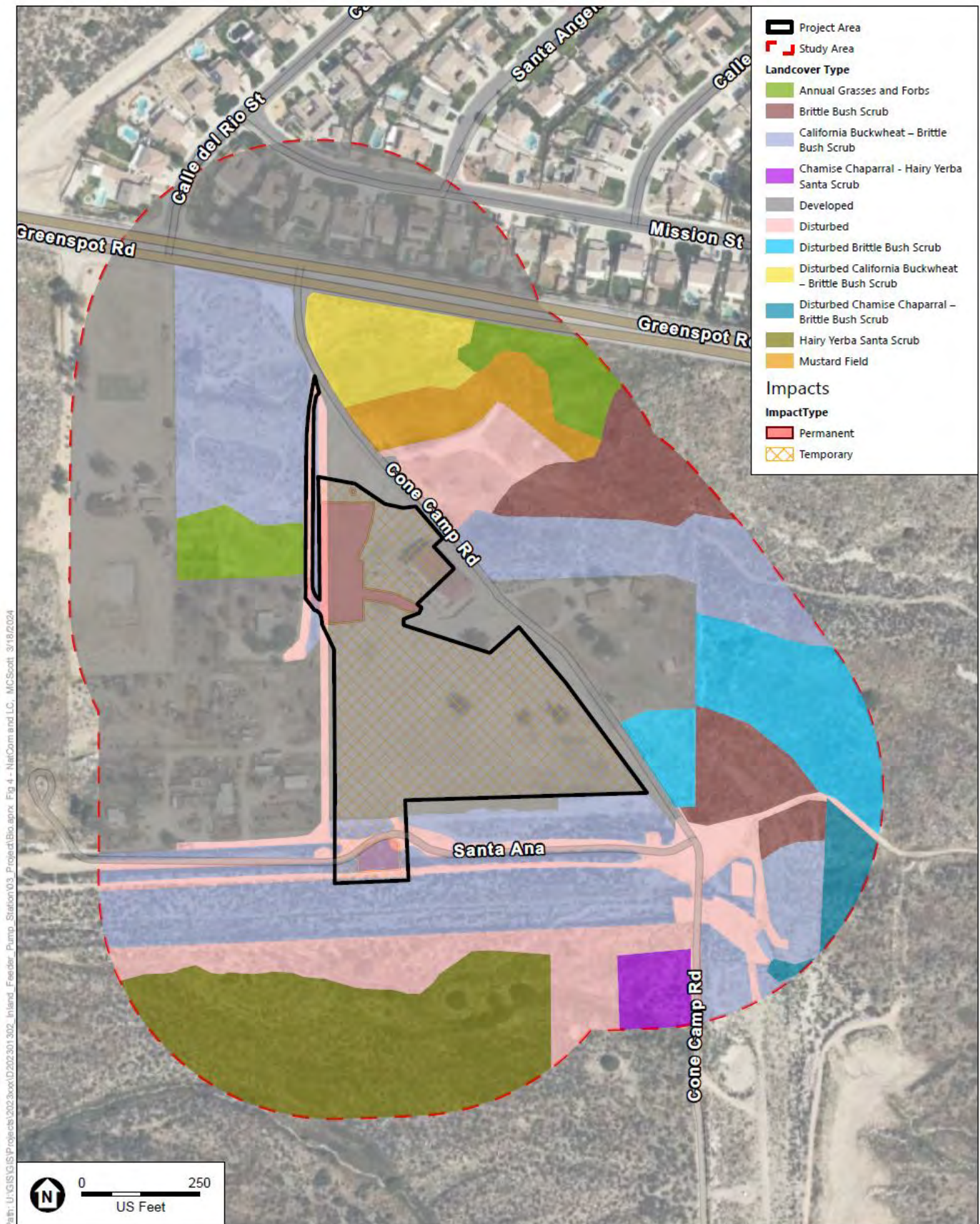
Brittle bush scrub (*Encelia farinosa* shrubland alliance) was mapped within the eastern portion of the study area. This natural community is characterized by dense brittle bush (*Encelia farinosa*) with an understory of various grasses and forbs such as deerweed (*Acmispon glaber*), wild oats, brome (*Bromus spp.*), and short-podded mustard.



SOURCE: ESA, 2024; USGS Web Soil Survey, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 3
Soils



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

Figure 4
Natural Communities and
Land Cover Types

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TABLE 1
NATURAL COMMUNITIES AND LAND COVER TYPES

Natural Community/Land Cover Type	Project Area (acres)	500-foot Buffer (acres)	Total Study Area (acres)
Terrestrial Natural Communities			
Annual Grasses and Forbs	--	1.66	1.66
Brittle Bush Scrub	--	2.79	2.79
Disturbed Brittle Bush Scrub	--	2.70	2.70
California Buckwheat – Brittle Bush Scrub	0.37	12.18	12.55
Disturbed California Buckwheat – Brittle Bush Scrub	--	1.40	1.40
Chamise Chaparral – Hairy Yerba Santa Scrub	--	0.57	0.57
Disturbed Chamise Chaparral – Brittle Bush Scrub	--	0.55	0.55
Hairy Yerba Santa Scrub	--	5.37	5.37
Mustard Fields	--	1.19	1.19
Developed/Disturbed Land Cover Types			
Developed	5.84	18.67	24.51
Disturbed	0.40	6.27	6.67
TOTAL	6.61	53.35	59.96

SOURCE: ESA 2024

Disturbed Brittle Bush Scrub

Disturbed brittle bush scrub was mapped within the eastern portion of the study area. This natural community is also characterized by brittle bush; however, it appeared as though a disturbance, such as a fire, has decreased the density of brittle bush individuals and increased the dominance of non-native grasses and forbs including wild oats and bromes.

California Buckwheat – Brittle Bush Scrub

California buckwheat – brittle bush scrub was mapped throughout much of the study area, including the southern portion of the project area and surrounding areas in the 500-ft buffer outside the facility. This natural community was co-dominated by California buckwheat (*Eriogonum fasciculatum*) and brittle bush shrubs. There is a sparse herbaceous layer with wild oat, bromes and filarees such as broad leaf filaree (*Erodium botrys*).

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Disturbed California Buckwheat – Brittle Bush Scrub

Disturbed California buckwheat – brittle bush scrub was mapped in the northern portion of the study area. This natural community is also co-dominated by California buckwheat and brittle bush shrubs but appears disturbed (likely from historic grading due to its proximity to the road and active construction sites). This disturbance has increased the non-native herbaceous layer of wild oats and bromes relative to the shrub layer.

Chamise Chaparral – Hairy Yerba Santa Scrub

Chamise chaparral – hairy yerba santa scrub was mapped in the southern portion of the 500-ft buffer outside of the project area. This natural community has a shrub layer co-dominated by chamise (*Adenostoma fasciculatum*) and hairy yerba santa (*Eriodictyon trichocalyx*). These dense shrubs were accompanied by brittle bush, California buckwheat, and deerweed with a sparse grass layer of bromes and oats.

Disturbed Chamise Chaparral – Brittle Bush Scrub

Disturbed chamise chaparral – brittle bush scrub was mapped in the eastern corner of the 500-ft buffer outside of the project area. This natural community is co-dominated by chamise and brittle bush, but has a higher relative abundance of non-native herbaceous species such as bromes, oats, and filarees due to historic disturbance. This community appears to have been previously graded allowing non-natives to proliferate amongst existing shrubs.

Hairy Yerba Santa Scrub

Hairy yerba santa scrub was mapped in the southern portion of the 500-ft buffer outside of the project area. This natural community is dominated by hairy yerba santa with sparse brittle bush, California buckwheat, California cholla (*Cylindropuntia californica*), and sugar bush (*Rhus ovata*) throughout. There is a sparse herbaceous layer of bromes and wild oats.

Mustard Fields

Mustard fields were mapped in the northern section of the 500-ft buffer outside of the project area. This natural community is dominated by black mustard (*Brassica nigra*) with accompanying dove weed, filarees (*Erodium* sp.), and short-podded mustard. This community appeared to have historic disturbance, likely grading as it was present next to existing dirt roads and ornamentally planted vegetation.

Developed

Developed land cover types represent the heavily trafficked areas including the majority of the project area, paved portion of Cone Camp Road, and residential development to the north, east, and west of the project area. These areas are either entirely or largely devoid of vegetation except for weedy non-native growth (oats and bromes) and ornamentally planted trees such as tree of heaven (*Ailanthus altissima*), citrus trees (*Citrus* sp.), eucalyptus (*Eucalyptus* sp.), and Peruvian pepper tree (*Schinus molle*).

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Disturbed

Disturbed land cover types represent dirt access roads that traverse the study area as well as areas that were recently graded due to active construction. These areas are largely devoid of vegetation except minimal shrubs (e.g. California buckwheat and brittle bush), ornamental trees (e.g. black poui [*Jacaranda mimosifolia*], Italian cypress [*Cupressus sempervirens*], and olive [*Olea europaea*]), and non-native herbaceous species (e.g. oats, bromes, filarees).

Sensitive Natural Communities

“Sensitive” natural communities and habitats are defined by CDFW as those natural communities that have a reduced range and/or are imperiled because of various forms of development and other anthropogenic stressors, including residential and commercial expansion, various forms of agriculture, energy production, mining, etc. These communities are evaluated using NatureServe’s Heritage Methodology (NatureServe 2022), which is based on the knowledge of range and distribution of a specific vegetation type and the proportion of occurrences that are of good ecological integrity. Evaluation is done at both a global (natural range within and outside of California [G]) and subnational (State level for California [S]) level, each ranked from 1 (“critically imperiled” or very rare and threatened) to 5 (demonstrably secure). A community or habitat with a State rank of S1 through S3 are considered “sensitive” natural communities and may require review when evaluating environmental impacts (CDFW 2023a,b).

The study area is mapped by CNDDB as occurring within Riversidean alluvial fan sage scrub habitat with a State rank of S1.1. However, the Riversidean alluvial fan sage scrub habitat indicator species, scale broom (*Lepidospartum squamatum*), was not observed as a dominant species within any of the observed natural communities. Only one scale broom individual was observed within the study area. Therefore, no natural communities present within the study area meet the criteria for Riversidean alluvial fan sage scrub. In addition, based on review of CDFW’s California Sensitive Natural Communities List, there are no sensitive natural communities within the study area (CDFW 2023b).

Special-Status Plants

Special-status plants are defined as those that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as imperiled in some way. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status based on adopted policies (e.g., counties and cities) and/or the expertise of state resource agencies or non-profit organizations (e.g., CNPS). For purposes of this report, special-status plants are defined as follows:

- Plants that are listed or proposed for listing as threatened or endangered or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA.

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- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California.
- Plants considered by the CNPS to be plants about which more information is needed and plants of limited distribution (Rank 3 and 4 plants) that may be significant locally and are recommended for consideration under CEQA.
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.).

A review of the CNDDDB (CDFW 2023a) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2023) revealed that many special-status plant species have been recorded within the USGS quadrangle search area (see **Attachment D, CNDDDB and CNPS Results**). The potential for special-status plant species to occur is based on existing vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges. It was determined that many of the plant species generated in the database do not have the potential to occur within the study area due to the lack of suitable habitat. Such species are therefore omitted from further discussion in this report. Based on the criteria defined below, it is determined that suitable habitat for nine species occurs within or immediately adjacent to the project area (see **Table 2, Special-Status Species with Potential to Occur**).

Low Potential: Limited habitat exists for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent, or the preferred habitat may be present, but has undergone substantial disturbance, such that the species is not expected to occur.

Moderate Potential: Marginal habitat for a particular species is present. For example, the available habitat may be somewhat disturbed, however, still supports important components, such as a particular soil or community type.

High Potential: The study area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate vicinity.

Present: The species was observed during the biological resources assessment.

A total of five species, including Plummer's mariposa lily (*Calochortus plummerae*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), slender-horned spineflower (*Dodecahema leptoceras*), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), and Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) have a moderate to high potential to occur within the study area. Santa Ana River woollystar and slender-horned spineflower are federally and state endangered species with a high potential to occur within the study area. The remaining four species were determined to have a low potential to occur based on the lack of suitable habitat.

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TABLE 2
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR

Common Name Scientific Name	Sensitivity Status ¹	Flowering Period	Preferred Habitat/Known Elevation and Distribution ²	Presence/Potential to Occur
Berberidaceae (Barberry Family)				
Nevin's barberry <i>Berberis nevinii</i>	Federal: FE State: SE Other: 1B.1	Mar.-Jun.	Sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland. Elevation range extends from 70-825 meters. Found in Los Angeles, Riverside, San Bernardino, San Diego counties.	Low Potential. Suitable chaparral and coastal scrub habitat are present throughout the study area; however, the study area lacks the steep topography the species is commonly found in. The closest known occurrence is located over 5 miles away from the project area.
Brassicaceae (Cabbage Family)				
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	Federal: None State: None Other: 4.3	Jan.-Jul.	Chaparral and coastal scrub. Elevation range extends from 1-885 meters. Found in Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura counties.	Moderate Potential. Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. However, it is more commonly observed in dry, exposed areas rather than under shrub canopy. Additionally, known occurrences of the species are present approximately one mile east of the project area.
Nyctaginaceae (Four O'clock Family)				
chaparral sand-verbena <i>Abronia villosa</i> var. <i>aurita</i>	Federal: None State: None Other: 1B.1	Jan.-Sep.	Chaparral, coastal scrub, and desert dunes/sandy areas. Elevation range extends from 0-1,600 meters. Found in Los Angeles, Riverside, San Diego, San Bernardino, possibly Orange counties.	Low Potential. Marginal suitable coastal scrub habitat is present adjacent to the project area within the study area and the study area lacks dune habitat. Additionally, known occurrences of the species are present within Riverside County approximately 15 miles south of the project area.

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Common Name Scientific Name	Sensitivity Status ¹	Flowering Period	Preferred Habitat/Known Elevation and Distribution ²	Presence/Potential to Occur
Polemoniaceae (Phlox Family)				
Santa Ana River woollystar <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Federal: FE State: SE Other: 1B.1	Apr.–Sep.	Chaparral, coastal scrub (alluvial fan)/sandy or gravelly. Elevation range extends from 91-610 meters. Found in Riverside, San Bernardino, possibly Orange counties.	High Potential. Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. Additionally, known occurrences of the species are present throughout the alluvial fan scrub associated with the Santa Ana River approximately 0.4 mile west and south of the project area.
Polygonaceae (Buckwheat Family)				
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	Federal: None State: None Other: 1B.1	Apr.–Jun.	Openings/clearings in coastal or desert sage scrub, chaparral or interface; dry slopes or flat ground; sandy soils. Elevation range extends from 275–1,220 meters. Found in Los Angeles, Riverside, San Bernardino counties.	High Potential. Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. Additionally, one known occurrence of the species is present within the southern portion of the study area.
white-bracted spineflower <i>Chorizanthe xanti</i> var. <i>leucotheca</i>	Federal: None State: None Other: 1B.2	Apr.–Jun.	Sandy or gravelly soils in coastal scrub (alluvial fans); Mojavean desert scrub; Pinyon and juniper woodland. Elevation range extends from 300-1,200 meters. Found in Los Angeles, Riverside, San Bernardino, San Diego counties.	Low Potential. Marginal suitable coastal scrub habitat is present immediately adjacent to the project area within the study area. Additionally, one known occurrence of the species is present along Mill Creek approximately 4.6 miles southeast of the study area.
slender-horned spineflower <i>Dodecahema leptoceras</i>	Federal: FE State: SE Other: 1B.1	Apr.–Jun.	Scrub and chaparral in sandy soils and alluvial fans. Elevation range extends from 200-760 meters. Found in Los Angeles, Riverside, San Bernardino counties.	High Potential. Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. Additionally, known occurrences of the species are present throughout the alluvial fan scrub associated with the Santa Ana River approximately 0.7 mile south of the project area.
Liliaceae (Lily Family)				
Plummer's mariposa lily <i>Calochortus plummerae</i>	Federal: None State: None Other: 4.2	May–Jul.	Chaparral (openings), cismontane woodland, coastal scrub, valley and foothill grassland, granitic/rocky. Elevation range extends from 100-1,700 meters. Found in Los Angeles, Orange, Riverside, San Bernardino, Ventura counties.	High Potential. Suitable California buckwheat – brittle bush scrub habitat and granitic/rocky soils are present within the project area. Additionally, known occurrences of the species are present within the southern portion of the study area.



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Common Name Scientific Name	Sensitivity Status ¹	Flowering Period	Preferred Habitat/Known Elevation and Distribution ²	Presence/Potential to Occur
Poaceae (True Grass Family)				
California satintail <i>Imperata brevifolia</i>	Federal: None State: None Other: 2B.1	Sep.–May	Chaparral, coastal sage scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub/mesic. Elevation range extends from 0–1,215 meters. Found in Kern, Los Angeles, Riverside, San Bernardino, Ventura, Orange counties.	Low Potential. Marginal suitable coastal scrub habitat is present immediately adjacent to the project area within the study area. Additionally, one known occurrence of this species is present within the City of Redlands approximately 1.6 miles south of the study area.

NOTES:

1. Sensitivity Status

Federal/State/Local Status: FE = Federally Endangered; SE = State Endangered; ST = State Threatened; California Rare Plant Rank (CRPR) 1B = rare, threatened, or endangered in California and elsewhere; CRPR 2B = rare, threatened, or endangered in California but common elsewhere; CRPR 4 = plants of limited distribution. Rank 3 and 4 plants listed by the CNPS and CDFW as plants in which more information is needed to determine their status and plants of limited distribution that are not significant locally are excluded from this analysis.

2. Sources for Preferred Habitat: Calflora 2024; CDFW 2023a.

SOURCE: ESA 2024

Special-Status Wildlife

Special-status wildlife are defined as those that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as imperiled in some way. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status based on adopted policies (e.g., counties and cities) and/or the expertise of state resource agencies or non-profit organizations (e.g., Western Bat Working Group). Special-status wildlife are defined as follows:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA.
- Wildlife that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380.
- Wildlife designated by CDFW as species of special concern, CDFW Watch List species, or have a state rank of S1-S3 on CDFW's Special Animals List (CNDDDB 2024).
- Wildlife “fully protected” in California (FGC Sections 3511, 4700, and 5050).
- Bird species protected by the MBTA.
- Bat species considered priority by the Western Bat Working Group (WBWG).

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The potential for special-status wildlife species to occur within the study area was assessed according to on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges. A review of the CNDDDB (CDFW 2023a) revealed that many special-status wildlife species have been recorded within the USGS quadrangle search area (see Attachment D) containing the study area; however, based on habitat preference, geographic distributions, and/or range restrictions, it was determined that a number of the species do not have the potential to occur due to the lack of suitable habitat, and are therefore omitted from further discussion in this report. Based on the criteria defined below, it is determined that 30 species have a low to high potential to occur within the study area or were observed during the biological assessment or previous studies (see **Table 3, Special-Status Wildlife Species with Potential to Occur**).

Low Potential: The study area supports limited habitat for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent.

Moderate Potential: Marginal habitat for a particular species may exist. For example, the habitat may be heavily disturbed and/or may not support all stages of a species' life cycle; or may not fit all preferred habitat characteristics.

High Potential: The study area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate vicinity.

Present: The species was observed within the study area during the site assessment.

Two listed species were present during the site assessment or previous studies conducted within the study area: coastal California gnatcatcher (*Poliophtila californica californica*; federally threatened and state species of special concern) and SBKR (federally endangered, state endangered, and state species of special concern). Two non-listed special-status wildlife species were present during the site assessment or previous studies conducted within the study area: coastal western whiptail (*Aspidoscelis tigris* ssp. *stejnegeri*) and northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*). The two listed species identified within the study area are depicted in **Figure 5, Sensitive Biological Resources**.

Based on the condition of the vegetation and habitats that were characterized during the site visit, it was determined that 14 non-listed special-status wildlife species, of the 30 species identified by CNDDDB, were determined to have a moderate to high potential to occur, including southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), southern California legless lizard (*Anniella stebbinsi*), California glossy snake (*Arizona elegans occidentalis*), Bell's sparrow (*Artemisiospiza belli belli*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), burrowing owl (*Athene cunicularia*), red-diamond rattlesnake (*Crotalus ruber*), California horned lark (*Eremophila alpestris* ssp. *actia*), loggerhead shrike (*Lanius ludovicianus*), San Diego black-tailed jackrabbit (*Lepus californicus* ssp. *bennettii*), San Diego desert woodrat (*Neotoma lepida* ssp. *intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), Los Angeles pocket mouse (*Perognathus longimembris* ssp. *brevinasus*), and coast horned lizard (*Phrynosoma blainvillii*). Additional species determined to have a moderate potential to occur include: Crotch bumble bee (*Bombus crotchii*; state candidate endangered) and western spadefoot (*Spea hammondi*; federal candidate as threatened). Wildlife species determined to have a low potential to occur in the study area are not further evaluated in this report beyond Table 3.

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TABLE 3
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR

Common Name Scientific Name	Status ¹ (Federal/State/ Other)	Preferred Habitat ²	Presence/Potential to Occur within the Study Area
Amphibians			
western spadefoot <i>Spea hammondi</i>	Federal: FCT State: SSC Other: S3S4	Mixed woodland, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Prefers washes and other sandy areas with patches of brush and rocks. Rain pools or shallow temporary pools, which do not contain bullfrogs, fish, or crayfish are necessary for breeding. Perennial plants necessary for its major food-termites.	Moderate Potential. Suitable upland habitat, such as grasslands and chaparral, is present throughout the study area. The study area contains constructed basins with seasonal ponding. Additionally, multiple constructed basins are present adjacent to the east of the study area. This species has been previously observed within one mile to the east of the project area.
Birds			
Cooper's hawk <i>Accipiter cooperii</i>	Federal: None State: WL Other: S4	Inhabits cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest, or other forest habitats near water. Nests and forages near open water or in riparian vegetation.	Low Potential (Foraging). The study area contains limited woodland areas to support nesting and roosting, but this species may use the area for foraging. This species has been previously observed within San Timoteo Wash approximately 6.8 miles south of the project area.
southern California rufous-crowned sparrow <i>Aimophila ruficeps</i> <i>canescens</i>	Federal: None State: WL Other: S4	Known to frequent relatively steep, often rocky hillsides with grass and forb species. Resident in southern California coastal sage scrub and mixed chaparral habitats.	Moderate Potential. Suitable habitat is present throughout the annual grasses and forbs and coastal sage scrub habitats; however, no sloped, rocky habitat is present within the study area. The nearest known occurrence is located in the San Bernardino Mountains and Yucaipa approximately 5.5 miles north and south of the project area, respectively.
golden eagle <i>Aquila chrysaetos</i>	Federal: BGEPA State: FP, WL Other: S3	Known to live in open and semi-open country featuring native vegetation across most of the Northern Hemisphere. They avoid developed areas and uninterrupted stretches of forest. They are found primarily in mountains up to 12,000 feet, Canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest on cliffs and steep escarpments in grassland, chaparral, shrubland, forest, and other vegetated areas. Forages for mammalian prey in grasslands, coastal sage scrub, chaparral, oak savannahs, open coniferous forest, and over open areas	Low Potential (Foraging). Suitable foraging habitat is present in the coastal sage scrub and open areas within the study area. However, the study area lacks steep cliffs suitable for nesting. This species has been previously observed within San Timoteo Canyon approximately 9.2 miles southeast of the project area.

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Common Name Scientific Name	Status ¹ (Federal/State/ Other)	Preferred Habitat ²	Presence/Potential to Occur within the Study Area
Bell's sparrow <i>Artemisiospiza belli belli</i>	Federal: None State: WL Other: S3	Inhabits large, unfragmented blocks of coastal sage scrub, southern mixed chaparral habitats.	Moderate Potential. Suitable large, unfragmented blocks of coastal scrub and chaparral vegetation are present within the study area; however, this species was previously observed 10.3 miles southwest of the project area within Moreno Valley.
burrowing owl <i>Athene cunicularia</i>	Federal: BCC State: SSC Other: S2	Various open habitat types including grasslands and low scrub communities and is known to utilize heavily disturbed areas for roosting and nesting purposes.	Moderate Potential. Suitable foraging and nesting habitat is present throughout the annual grasses and forbs and scrub habitats within the study area. Limited suitable burrows were observed within the study area outside of the project site. This species has been previously observed within San Bernardino International Airport approximately 4.1 miles west of the project area.
white-tailed kite <i>Elanus leucurus</i>	Federal: None State: FP Other: S3S4	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Low Potential (Foraging). There is suitable foraging habitat throughout the coastal scrub habitat within the study area. However, this species is unlikely to nest within the study area due to lack of marsh and woodland habitats.
California horned lark <i>Eremophila alpestris actia</i>	Federal: None State: WL Other: S4	Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above the treeline. During the winter, this species typically flocks in desert lowlands.	Moderate Potential. Marginal suitable grassland habitat is present within the study area. This species has been previously observed within an industrial part of the city of Redlands approximately 5.8 miles southwest of the project area.
merlin <i>Falco columbarius</i>	Federal: None State: WL Other: S3S4	Occupies seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms, and ranches. Clumps of trees or windbreaks are required for roosting in open country.	Low Potential (Foraging). Suitable open grasslands surrounding residential areas may support foraging within the study area. However, the site lacks clumps of trees that are suitable for roosting.
loggerhead shrike <i>Lanius ludovicianus</i>	Federal: None State: SSC Other: S4	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	High Potential. Suitable open scrub habitat for foraging with dense shrubs and bushes required for nesting is present within the study area. This species has been previously observed within San Timoteo Canyon approximately 9.2 miles southeast of the project area.

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Common Name Scientific Name	Status ¹ (Federal/State/ Other)	Preferred Habitat ²	Presence/Potential to Occur within the Study Area
coastal California gnatcatcher <i>Polioptila californica californica</i>	Federal: FT State: SSC Other: S2	Species is an obligate, permanent resident of coastal sage scrub habitats dominated by California sagebrush and flat-topped buckwheat, mainly on cismontane slopes below 1,500 feet in elevation. Low coastal sage scrub in arid washes, on mesas and slopes.	Present. Suitable coastal sage scrub habitat with California buckwheat is present within and surrounding the project area. An individual was visually and audibly identified within the study area during the biological field reconnaissance, approximately 0.2 miles south of the project area.
Mammals			
pallid bat Antrozous pallidus	Federal: None State: SSC Other: S3	Occurs in a wide variety of habitats including chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran Desert scrub, upper montane coniferous forest, valley and foothill grasslands. Most common in open, dry habitats with rocky areas for roosting. For roosting, prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging. Roosts must protect species from high temperatures. Very sensitive to disturbance of roosting sites.	Low Potential (Foraging). Marginal foraging habitat is present within the coastal sage scrub communities present within the study area; however, rocky areas and/or various infrastructure necessary for roosting is not available.
northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	Federal: None State: None Other: S3S4	Moderate canopy coverage of coastal scrub, sagebrush, chaparral, grasslands, pinyon-juniper, and desert wash and scrub. Found in sandy, herbaceous areas with nearby shrubs for cover. Burrows are typically dug within gravelly or sandy soil.	Present. Suitable habitat is present throughout the scrub habitat with herbaceous areas and accompanying shrubs. This species was present during small-mammal trapping in 2022 (ECORP 2022).
San Bernadino kangaroo rat <i>Dipodomys merriami parvus</i>	Federal: FE State: SSC, SE Other: S1	Inhabits coastal sage scrub vegetation in alluvial fans and floodplains.	Present. Suitable habitat is present throughout the coastal scrub with burrow surveys and nighttime activity surveys suggesting presence of species (ESA 2023). Additionally, this species was present during small-mammal trapping in 2022 (ECORP 2022).
Stephen's kangaroo rat <i>Dipodomys stephensi</i>	Federal: FT State: ST Other: S3	Inhabits annual and perennial grassland habitats, but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas. Known to occur in sparse perennial vegetation with firm soil, "neither hard nor sandy."	Low Potential. Suitable habitat is present throughout the annual grasses and forbs and coastal scrub habitats within the study area; however, appropriate soils are not present. Additionally, the species is considered extirpated in Redlands quad.
western mastiff bat <i>Eumops perotis californicus</i>	Federal: None State: SSC Other: S3S4	Known to occur in habitat consisting of extensive open areas within dry desert washes, flood plains, chaparral, cismontane oak woodland, coastal scrub, open ponderosa pine forest, and grasslands. Roosts primarily in crevices in rock outcrops and buildings.	Low Potential (Foraging). This species may forage throughout the study area; however, rock outcrops are not available for roosting and limited infrastructure is available within and surrounding the project area.



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Common Name Scientific Name	Status ¹ (Federal/State/ Other)	Preferred Habitat ²	Presence/Potential to Occur within the Study Area
western yellow bat <i>Lasiurus xanthinus</i>	Federal: None State: SSC Other: S3	Known only in Los Angeles and San Bernardino Counties south to the Mexican border. This species has been recorded below 600 m (2000 ft) in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts primarily in trees, including under palm trees, and forages for insects over water and among trees.	Low Potential (Foraging). This species may forage throughout the study area; however, limited trees are available for roosting within and surrounding the project area.
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	Federal: None State: None Other: S3S4	Inhabits open grasslands, agricultural fields, and sparse coastal scrub where they occur primarily in arid regions with short grass.	High Potential. This species has a high likelihood of occurring within the study area due to suitable coastal scrub habitat with short grasses present.
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	Federal: None State: SSC Other: S3S4	Found in a variety of coastal scrub, desert scrub, chaparral, cactus, and rocky habitats. Nests primarily against rock outcroppings, boulders, cacti, or areas of dense undergrowth.	High Potential. Suitable coastal scrub and chaparral habitat is available within the study area; rock outcrops from berm construction are present for nest building. This species has been observed approximately 1.16 miles east of the project area.
pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	Federal: None State: SSC Other: S3	Inhabits pinyon-juniper woodlands, riparian scrub, Sonoran desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis. Typically roosts in caves and rocky outcrops; prefers cliffs in order to obtain flight speed. Feeds on insects flying over bodies of water or arid desert habitats to capture prey.	Low Potential (Foraging). This species may forage throughout the Santa Ana River floodplain, but the study area lacks suitable caves and rocky outcrops for roosting.
southern grasshopper mouse <i>Onychomys torridus ramona</i>	Federal: None State: SSC Other: S3	Alkali desert scrub and desert scrub habitats are preferred, with somewhat lower densities expected in other desert habitats, including succulent shrub, wash, and riparian areas. Also occurs in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats. Uncommon in valley foothill and montane riparian, and in a variety of other habitats.	High Potential. Suitable coastal scrub and chaparral habitat is present throughout much of the study area. This species has been observed within Loma Linda approximately 8.8 miles southwest of the project area.
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	Federal: None State: SSC Other: S1S2	Found in lower elevation grasslands and coastal sage scrub communities.	High Potential. Suitable habitat is present throughout the annual grasses and forbs and coastal scrub habitats within the study area. Additionally, suitable burrows were observed within the western portion of the project area. This species has been observed within the Santa Ana River floodplain approximately 3.9 miles west of the project area.

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Common Name Scientific Name	Status ¹ (Federal/State/ Other)	Preferred Habitat ²	Presence/Potential to Occur within the Study Area
American badger <i>Taxidea taxus</i>	Federal: None State: SSC Other: S3	Found in a variety of habitats, including alkali marsh, desert wash, Great Basin scrub, marsh and swamp, meadow and seep, Mojavean desert scrub, riparian scrub, riparian woodland, valley and foothill grassland. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground to dig burrows. Preys on burrowing rodents.	Low Potential. Suitable habitat and evidence of an available prey base (i.e., gophers, ground squirrels, kangaroo rats, and deer mice) are present throughout the annual grasses and forbs; however, no suitable burrows (i.e., appropriately-sized) were observed.
Reptiles			
southern California legless lizard <i>Anniella stebbinsi</i>	Federal: None State: SSC Other: S3	Occurs in moist warm loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach/coastal dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs. Can also be found by gently raking leaf litter under bushes and trees. Sometimes found in suburban gardens in Southern California.	High Potential. Suitable habitat for this species is present throughout the sparsely vegetated chaparral habitat present within the study area. The species was observed along adjacent to the south of Greenspot Road approximately 0.7 mile east and 1.7 miles west of the project area.
California glossy snake <i>Arizona elegans occidentalis</i>	Federal: None State: SSC Other: S2	Inhabits arid scrub, rocky washes, and grasslands, and chaparral habitats. Appears to prefer microhabitats of open areas with friable soils for burrowing.	High Potential. Appropriate vegetation is present throughout the annual grasses and forbs, scrub, and chaparral habitats. Multiple known occurrences of this species are present within one mile east and west of the project area.
Belding's orange-throated whiptail <i>Aspidoscelis hyperythra beldingi</i>	Federal: None State: WL Other: S2S3	Species requires intact habitat within chaparral, cismontane woodland, and coastal scrub plant communities. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food-termites.	Moderate Potential. Appropriate vegetation is available throughout the chaparral and coastal scrub habitats that contain sandy areas with brush and rocks. This species has been observed within the city of Mentone approximately 3.6 miles southeast of the project area.
coastal western whiptail <i>Aspidoscelis tigris ssp. stejnegeri</i>	Federal: None State: SSC Other: S3	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Present. Suitable habitat is present within the open area throughout the study area. Additionally, this species was observed during nighttime small mammal activity surveys (ESA 2023).

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Common Name Scientific Name	Status ¹ (Federal/State/ Other)	Preferred Habitat ²	Presence/Potential to Occur within the Study Area
red-diamond rattlesnake <i>Crotalus ruber</i>	Federal: None State: SSC Other: S3	Known to occur in chaparral, Mojavean desert scrub, and Sonoran Desert scrub communities. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects.	High Potential. Appropriate vegetation is present within the chaparral habitat. There are ample rocky areas with dense vegetation and presence of prey species. This species has been observed 0.3-mile northwest of the project area along Greenspot Road.
coast horned lizard <i>Phrynosoma blainvillii</i>	Federal: None State: SSC Other: S4	Prefers sandy riparian and sage scrub habitats but also occurs in valley-foothill hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet, open country, especially sandy areas, washes, flood plains, and windblown deposits. Requires open areas for sunning, bushes and loose soil for cover and abundant supply of harvester ants.	High Potential. Suitable scrub and annual grass/forb habitat with sandy deposits is present within the project area. This species has been observed 1.3 miles east of the project area.
Invertebrates			
Crotch bumble bee <i>Bombus crotchii</i>	Federal: None State: SCE Other: S2	Open grassland and scrub habitats that support potential nectar sources such as plants within the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae families.	Moderate Potential. The annual grasses and forbs and coastal scrub habitats support potential nectar sources for the species, especially plants within the Asteraceae and Boraginaceae families. This species has been observed within Loma Linda approximately 6.9 miles southwest of the project area.

NOTES:

1. Sensitivity Status

Federal/State/Local Status: FE = Federally Endangered; FT = Federally Threatened; FCT = Federal Candidate as Threatened; BCC = Federal Bird of Conservation Concern; SCE = State Candidate as Endangered; SE = State Endangered; ST = State Threatened; SSC = State Species of Special Concern; FP = Fully Protected; WL = State Watch List

The California Natural Diversity Database (CNDDB) uses the same ranking methodology originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. The state rank (S-rank) refers to the imperilment status only within California's state boundaries. It is a reflection of the overall status of an element through its state range. The state rank represents a letter + number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two.

S1 = Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

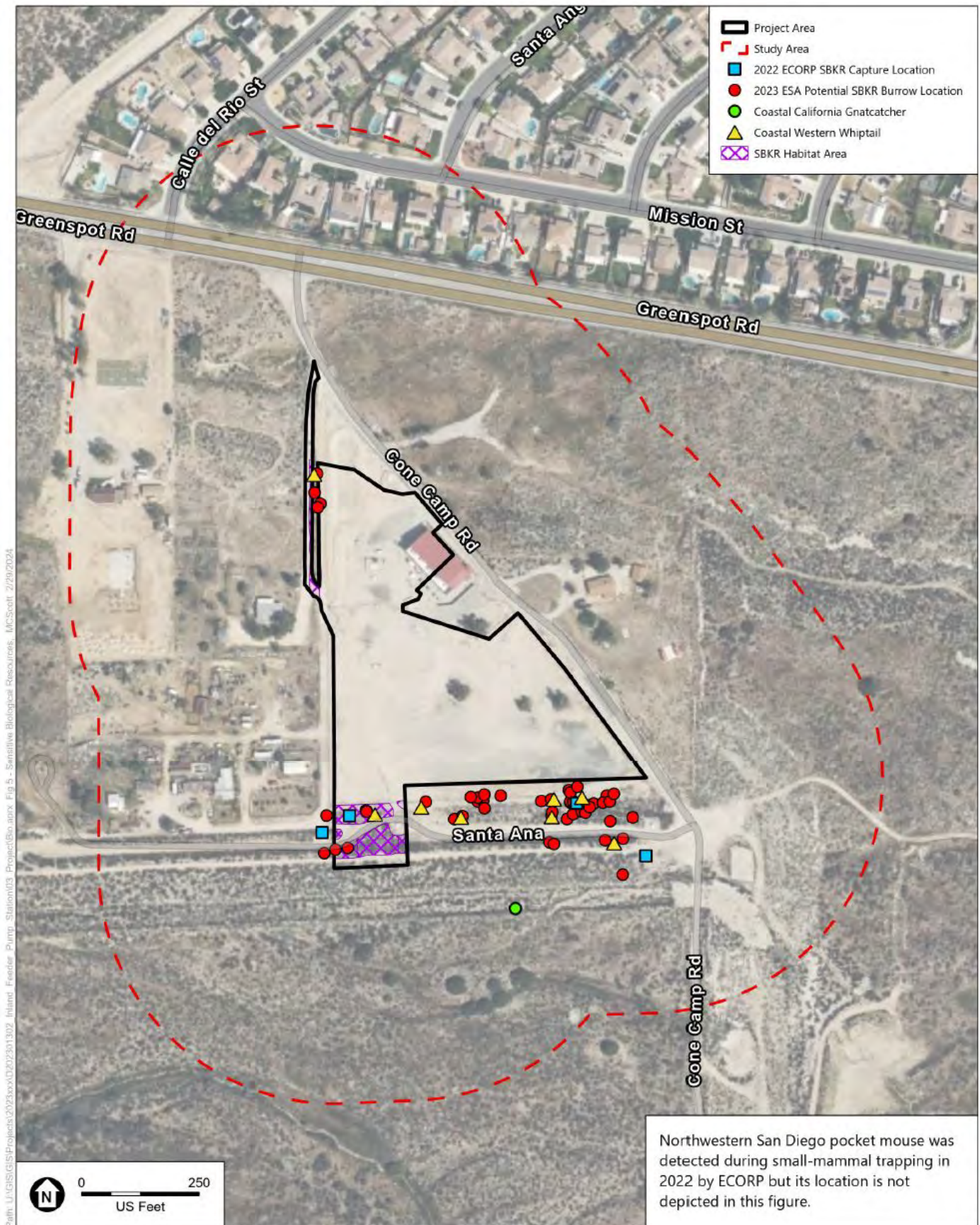
S2 = Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

S3 = Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

2. Sources for Preferred Habitat: CDFW 2023a; Cornell Lab of Ornithology 2024.

SOURCE: ESA 2024



SOURCE: ESA, 2023b; ECORP, 2022

Inland Feeder - Foothill Pump Station Intertie Project

Figure 5
Sensitive Biological Resources

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Critical Habitat

Under the FESA, to the extent feasible, the USFWS and National Marine Fisheries Service (NMFS) are required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter that are essential to the survival and recovery of the species, whether the habitat is currently occupied by the species or not. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types.

The entire project area and the majority of the study area aside from the residential development to the north is located within designated Critical Habitat Unit 1 (Santa Ana River Wash) for San Bernardino kangaroo rat (USFWS 2023a, 2008). Critical habitat designations are identified based on habitat areas that provide essential life cycle needs of the species (i.e., areas on which the primary constituent elements or PCEs are found) that include, but are not limited to: (1) space for individual and population growth and behavior; (2) essential resources such as food, water, air, light, minerals, or other nutrition or physiological requirements; (3) cover or shelter; (4) breeding and rearing sites; (5) representative habitats that are protected and represent the historical, geographical, and ecological range of the subspecies.

Specific PCEs required for SBKR include: alluvial fans, washes, and floodplains with suitable soils (i.e., sand, loamy sand, sandy loam, and loam) and burrows for cover and shelter; upland areas adjacent to alluvial fans, washes, and associated floodplain areas that support alluvial sage scrub and/or associated vegetation (i.e., coastal sage scrub and chamise chaparral) with up to approximately 50% canopy cover for protection from predators; and upland areas adjacent to alluvial fans, washes, and associated floodplain areas that include marginal habitat (e.g., alluvial sage scrub with greater than 50% canopy cover) with patches of suitable soils. The brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and disturbed chamise chaparral – hairy yerba santa scrub habitats within the project area and remainder of the study area provide suitable habitat for SBKR.

Wildlife Movement

Migration corridors are navigable pockets or strips of land that connect larger tracts of open space together, allowing them to function as a greater habitat complex. These “passages” can exist on a small scale, allowing wildlife to pass through or under an otherwise uninhabitable area including a roadway, housing development, or city through drainage culverts, green belts and waterways; or on a larger scale, providing an opportunity for wildlife to skirt large topographical features (e.g., mountains, lakes, streams) by utilizing adjacent canyons, valleys and upland swaths when migrating.

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Chain-link fencing is present along the perimeter of the majority of the developed portion of the project area which blocks access to the project area. Rural residential development also surrounds the project area to the north, east, and west, likely deterring wildlife movement. The land surrounding the project area to the south is undeveloped land that wildlife likely utilizes to forage and breed, and to some extent, travel locally and regionally. Numerous species of birds, reptiles, invertebrates, and small mammals would be expected in the study area, as well as larger mammals such as the coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*) and grey fox (*Urocyon cinereoargenteus*), who likely utilize the area for hunting and movement. While the project area provides some refuge for wildlife, it does not provide linkages to other habitats and is not expected to function as an important migration corridor. The project area and study area do not overlap with designated or recognized wildlife corridors.

Aquatic Resources

A formal aquatic resources delineation was not conducted as part of the biological field reconnaissance. However, five aquatic resource features (Features 1-5) were identified within the study area (**Figure 6, Aquatic Resources**). One constructed basin with associated drainage is located in the project area, while three ephemeral drainages and one constructed drainage are located outside the project area, within the surrounding study area.

Feature 1: Constructed Basin

Feature 1 is a constructed basin located within the northwestern extent of the project area. This feature is unvegetated and created within an upland area. An existing access road crosses Metropolitan's fee parcel from a gate on the southern fence line to a gate along the western fence line. This road, which crosses the parcel from south to north, appears to capture surface water runoff flowing from the existing access road and likely functions as an unintended stormwater pathway due to its regular use. As a result, concentrated stormwater flows along the road ultimately drain northward into the constructed basin located on the northwestern extent of the project area.

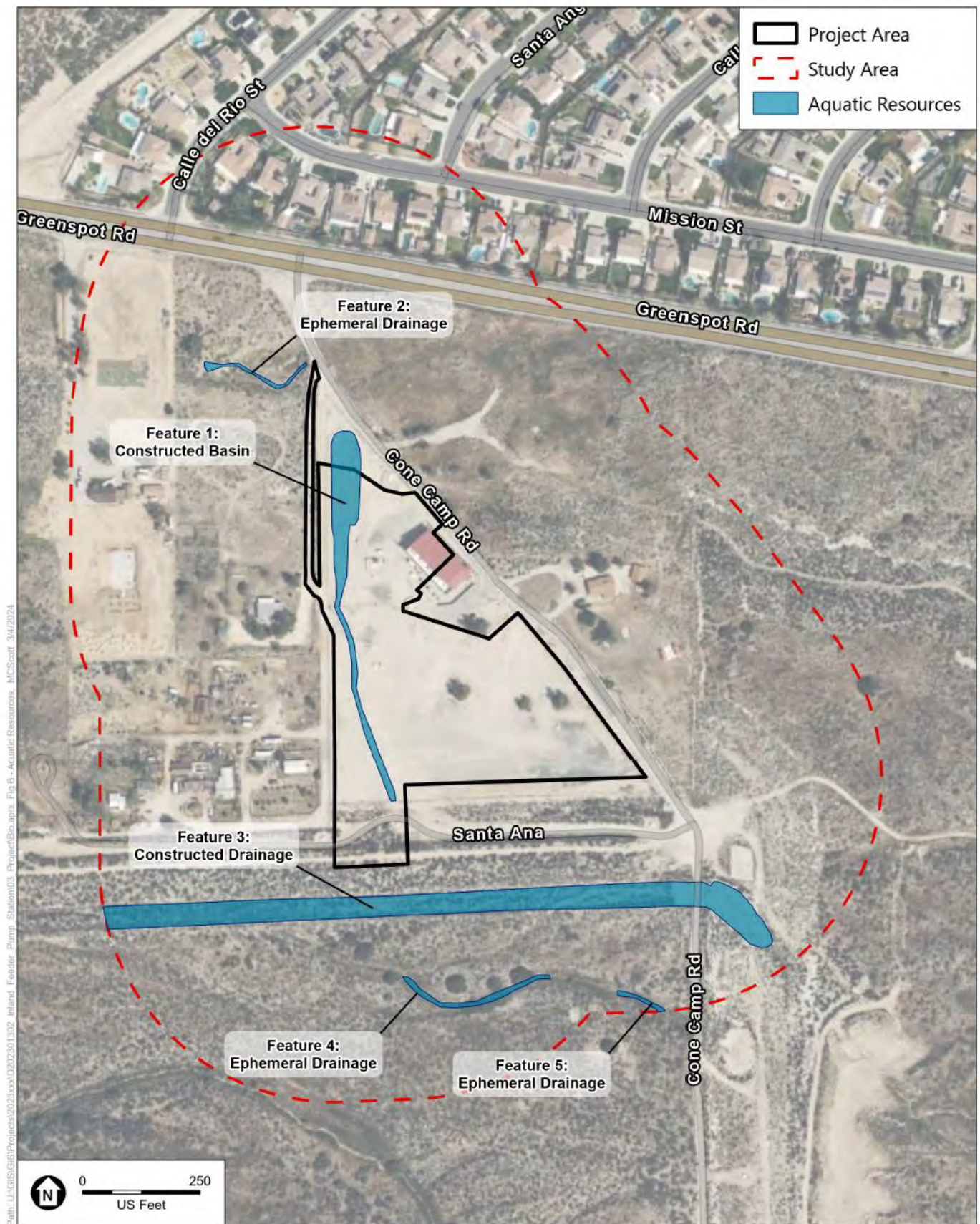
Feature 2: Ephemeral Drainage

Feature 2 is an ephemeral drainage located within the northern portion of the study area just west of the northernmost corner of the project area, and is dominated by upland vegetation (California buckwheat – brittle bush scrub). This drainage receives and captures surface water runoff from the surrounding landscape, including

Cone Camp Road, and flows to the west for approximately 245 feet before dissipating into the ground. The existing topography, specifically the higher elevation of the adjoining property, acts as a natural barrier preventing the flow from continuing or connecting with any other aquatic features downstream.

Feature 3: Constructed Drainage

Feature 3 is a constructed drainage within the southern portion of the study area, outside of the project area, north of Features 4 and 5. It is dominated by upland vegetation, including California buckwheat – brittle bush scrub, in addition to one individual sandbar willow (*Salix exigua*) and sparse mulefat (*Baccharis salicifolia*) within the



SOURCE: ESA, 2024

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Figure 6
Aquatic Resources

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eastern portion of the drainage. This drainage appears to have been constructed in an upland area and receives flows through a culvert located at the easternmost end of the feature. During high flows, water travels east to west through the constructed drainage, and converging with Plunge Creek, which ultimately connects to the Santa Ana River further west and outside of the study area.

Feature 4: Ephemeral Drainage

Feature 4 is an ephemeral drainage located within the southern portion of the study area and outside of the project area. This ephemeral drainage is comprised of upland vegetation, specifically chamise chaparral-hairy yerba santa scrub. Feature 4 dissipates into the ground at its western extent and does not appear to connect with any other aquatic features at its downstream extent.

Feature 5: Ephemeral Drainage

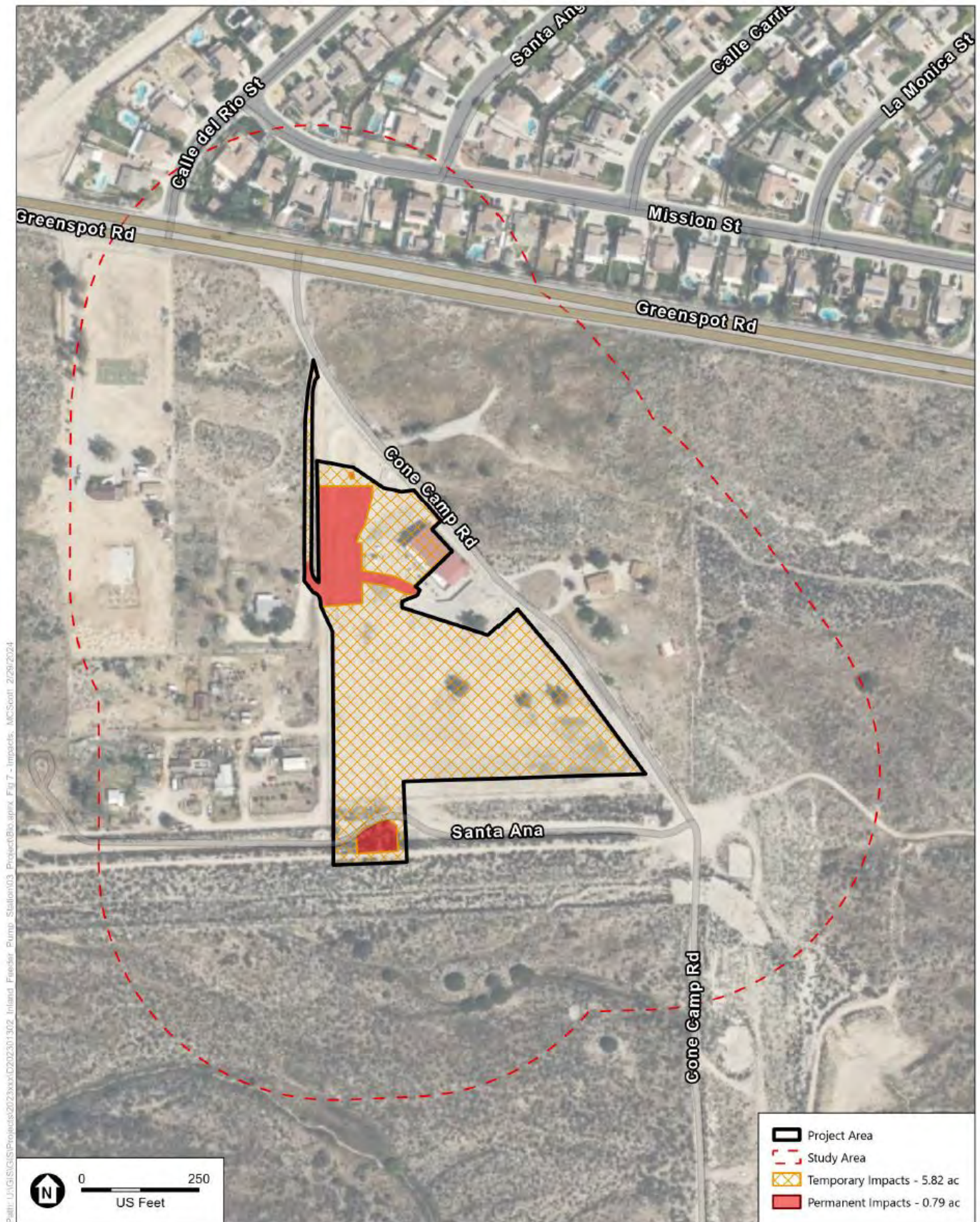
Feature 5 is an ephemeral drainage located within the southern portion of the study area and outside of the project area. It contains upland vegetation, specifically hairy yerba santa scrub. Based on aerial review, Features 4 and 5 appear to have once formed a single, ephemeral aquatic feature. However, recent disturbances in the area have caused a separation, severing the connection between them. Consequently, due to the surrounding higher elevation, drainage from this feature dissipates into the ground at its western extent.

Conclusions and Potential Impacts

The project is proposing to install two new underground pipelines (supply connection and discharge connection), two underground vaults, four aboveground HSTs, and associated appurtenant structures which would be updated in two stages. Stage 1 includes construction of the supply and discharge pipelines, an underground vault, four HSTs on concrete pads, and appurtenant structures within the existing graded triangular fenced area and the area immediately west of the fenced area. Stage 2 includes construction of a vault, portion of the discharge connection pipeline, associated appurtenant structures, and final connections to the existing Inland Feeder pipeline within the southern portion outside of the existing fenced area. The proposed project would result in 0.79 acres of permanent impacts and 5.82 acres of temporary impacts to developed and disturbed land cover and California buckwheat – brittle bush scrub natural community (**Figure 7, Project Impact Areas**).

Sensitive Natural Communities

Direct permanent and temporary impacts to natural communities and land covers within the proposed project development footprint are summarized in **Table 4, Project Impacts to Natural Communities and Land Cover Types**, and shown in Figure 7. Direct impacts to natural communities and land covers are proposed as a result of vegetation removal and construction activities and were quantified by overlaying the project boundaries with the vegetation communities mapped in the study area. The majority of the direct impacts would occur primarily within developed (5.84 acres) and disturbed (0.40 acres) areas. The only natural community within the project area is California buckwheat – brittle bush scrub natural community, which is not considered a sensitive natural



SOURCE: ESA, 2024

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Figure 7
Project Impact Areas

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TABLE 4
PROJECT IMPACTS TO NATURAL COMMUNITIES AND LAND COVER TYPES

Natural Community/Land Cover Type	Permanent Project Impact (acres)	Temporary Project Impact (acres)	Total Project Impact (acres)	Remaining Acreage in the Study Area (acres)
Terrestrial Natural Communities				
Annual Grasses and Forbs	--	--	--	1.66
Brittle Bush Scrub	--	--	--	2.79
Disturbed Brittle Bush Scrub	--	--	--	2.70
California Buckwheat – Brittle Bush Scrub	0.12	0.25	0.37	12.18
Disturbed California Buckwheat – Brittle Bush Scrub	--	--	--	1.40
Chamise Chaparral – Hairy Yerba Santa Scrub	--	--	--	0.57
Disturbed Chamise Chaparral – Brittle Bush Scrub	--	--	--	0.55
Hairy Yerba Santa Scrub	--	--	--	5.37
Mustard Fields	--	--	--	1.19
Developed/Disturbed Land Cover Types				
Developed	0.54	5.30	5.84	18.67
Disturbed	0.13	0.27	0.40	6.27
TOTAL	0.79	5.82	6.61	53.35

SOURCE: ESA 2024

community. Only 0.37 acre of California buckwheat – brittle bush scrub natural community is proposed to be permanently (0.12 acre) or temporarily (0.25 acre) impacted by the proposed project activities. No sensitive natural communities occur within the study area (CDFW 2023b).

Federally and State Listed Species

Appropriate authorization from USFWS under FESA or CDFW under CESA may include an Incidental Take Permit (ITP) or a Consistency Determination in certain circumstances, among other options (FGC, §§ 2080.1, 2081, subds. [b] and [c]) for impacts to federally and state listed species. Early consultation is encouraged, as significant modification to the project and mitigation measures may be required to obtain an ITP.

Special-Status Plants

Five special-status plant species have a moderate to high potential to occur within the California buckwheat – brittle bush scrub habitat within the project area, as well as within the natural communities within the surrounding study area: Parry’s spineflower, Plummer’s mariposa lily, Robinson’s pepper-grass, Santa Ana River woollystar, and slender-horned spineflower. While these five special-status plants have the potential to occur within the

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coastal sage scrub and chaparral habitats mapped in the study area (i.e., brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, disturbed chamise chaparral – brittle bush scrub, and hairy yerba santa scrub), Plummer’s mariposa lily also has the potential to occur within the annual grasses and forbs habitat mapped in the study area.

The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Focused rare plant surveys are recommended to confirm presence or absence of these species within 50 feet of the project area wherever suitable habitat occurs. Direct impacts to these species may occur in the form of habitat loss and mortality if the individual plants are present and crushed or removed during ground disturbing activities. Indirect impacts may occur in the form of excessive dust and introduction of nonnative plant species. Although these species may be present in the project area, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of these species with the implementation of **Standard Metropolitan Practices (SMP)-1, SMP-2, and SMP-3**, as well as **Avoidance and Minimization Measures (AMM)-1 and AMM-2**, and **Mitigation Measure BIO-1** listed below.

Special-Status Wildlife

Coastal California Gnatcatcher, Crotch Bumble Bee, Western Spadefoot, San Bernardino Kangaroo Rat

Coastal California gnatcatcher may forage and nest within the California buckwheat – brittle bush scrub habitat present within the project area and remainder of the study area. Additionally, the species may use the brittle bush scrub, disturbed brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and disturbed chamise chaparral – brittle bush scrub, and hairy yerba santa scrub habitat for nesting and foraging within the remainder of the study area. The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Ground disturbance and vegetation clearing activities during nesting season may result in “take” of this species through the disruption of breeding/nesting behavior, such as copulation, nest building or incubation. Although this species is known to occur in the project vicinity, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of coastal California gnatcatcher with implementation of **SMP-1, AMM-1, AMM-3, and Mitigation Measure BIO-1**.

Crotch bumble bee may forage and/or nest within the California buckwheat – brittle bush scrub habitat in the project area and remainder of the study area. The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Additionally, this species may use all of the natural communities, aside from the disturbed and developed land cover types, for nesting and foraging within the remainder of the study area. Ground disturbance and vegetation clearing activities may result in direct and indirect impacts to this species through the removal of the species’ preferred plants for nectaring and removal of nest burrows. Although this species has a potential to occur

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in the project vicinity, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of Crotch bumble bee with the implementation of Metropolitan's Standard Practices as outlined in **SMP-1** and **SMP-2**. In addition, **AMM-1** and **AMM-4** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect Crotch bumble bee.

Western spadefoot may use small mammal burrows within the California buckwheat – brittle bush scrub present within the project area and remainder of the study area. The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Additionally, this species may use all of the natural communities, aside from the disturbed and developed land cover types, for estivating and foraging within the remainder of the study area. The species is not expected to use the project area for breeding since it is disturbed and there are limited suitable breeding pools present. Although this species has a potential to occur in the project vicinity, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of western spadefoot with the implementation of Metropolitan's Standard Practices as outlined in **SMP-1**, **SMP-2**, and **SMP-3**, as well as avoidance and minimization measures **AMM-1** and **AMM-5**.

San Bernardino kangaroo rats may burrow, forage, and breed within the California buckwheat – brittle bush scrub habitat within the project area and remainder of the study area. This species was present during small-mammal trapping surveys conducted in 2022 (ECORP 2022). The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. The proposed project may result in a direct impact to this species through the killing of an individual(s) or the removal of a nest or burrows or may indirectly prevent normal breeding and/or foraging through noise generation from project activities. Indirect impacts may result from human presence, ground vibration and noise generated by heavy equipment, artificial lighting and increased predation. Implementation of Metropolitan's Standard Practices outlined in **SMP-1**, **SMP-2**, and **SMP-4**. In addition, **AMM-1**, **AMM-6**, **AMM-7**, **AMM-8**, and **Mitigation Measure BIO-1** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect local or regional populations of SBKR.

Other Special-Status Wildlife

The Bell's sparrow, burrowing owl, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow may forage and/or breed within the annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover type, of the project area and remainder of the study area. However, the project area is heavily compacted and provides very limited suitable foraging habitat along its southern boundary. Additionally, there is ample, suitable foraging habitat present in the surrounding area. Thus, the permanent loss of up to 0.12 acre and temporary loss of up to 0.25 acre of potentially suitable foraging habitat due to the proposed project activities is not considered a likely adverse impact to Bell's sparrow, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow if present during construction. Implementation of

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standard measures such as limiting the area of disturbance would further contribute toward avoiding any potential impacts to foraging species and their habitat.

The study area provides suitable nesting habitat for a variety of native resident and migratory bird and raptor species (including Bell's sparrow, burrowing owl, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow) protected under the MBTA and CFGC Sections 3503.5, 3505, and 3511. The project may result in the direct and/or indirect impacts to these migratory bird and raptor species through the removal of active nests or disruption of breeding/nesting behavior such as copulation, nest building, or incubation if present during construction activities. Metropolitan would implement their Standard Metropolitan Practices as outlined in **SMP-1**. In addition, implementation of **AMM-1**, **AMM-3**, and **AMM-10** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect protected nesting birds or raptors.

The Belding's orange-throated whiptail, burrowing owl, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern California legless lizard, and southern grasshopper mouse may occupy annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and/or hairy yerba santa scrub habitats, as well as the disturbed land cover type, of the project area and remainder of the study area. The proposed project may result in a direct impact to these species through the killing of an individual or the removal of a nest or burrow. Indirect impacts may result from human presence, ground vibration and noise generated by heavy equipment, and increased predation. Implementation of Metropolitan's Standard Practices outlined in **SMP-1**, **SMP-2**, and **SMP-4**, as well as avoidance and minimization measures **AMM-1**, **AMM-9**, and **AMM-10** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect these special-status ground dwelling species.

Critical Habitat

Critical habitat for SBKR is located within the study area, and the project would result in the permanent removal of 0.12 acre of designated critical habitat associated with California buckwheat – brittle bush scrub and 0.25 acre of temporary impacts to critical habitat from construction activities. The project would not be expected to result in the adverse modification of critical habitat for SBKR with the implementation of Metropolitan's Standard Practices outlined in **SMP-1** and **SMP-2**, and the implementation of measures **AMM-1**, **AMM-6**, **AMM-7**, **AMM-8**, and **Recommended Measure BIO-1**.

Wildlife Movement

While wildlife likely uses the study area to forage, breed, and to some extent, for local and regional movement, the project area does not link large areas of contiguous, intact habitat together, and is not expected to function as an important migration corridor. The proposed project may result in both direct and indirect impacts to nesting

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migratory and special-status birds and small mammals that may utilize the study area for foraging and/or nesting. Ground disturbance and vegetation clearing activities may disrupt foraging and breeding/nesting behavior, such as copulation, nest building or incubation, or result in the removal of an active nest or burrow. The project would not be expected to adversely impact the movement of wildlife with the implementation of Metropolitan's Standard Practices outlined in **SMP-1** through **SMP-4**, and measures **AMM-1**, **AMM-3** through **AMM-10**, and **Recommended Measure BIO-1**.

Aquatic Resources

Feature 1 consists of a constructed basin and an associated drainage feature/road which captures stormwater runoff along an existing access road. Feature 1 is the only aquatic resource identified within the project area. The basin was constructed in an upland area within the northwestern portion of the project area to capture surface water runoff allowing it to infiltrate into the ground within the basin. Feature 1 is less than one acre in size and is used and maintained for the detention, retention, and infiltration of stormwater runoff. This feature does not meet the definition of a water of the state and does not contain or support wetland or riparian habitat, and therefore, would likely not be considered jurisdictional by the CDFW and RWQCB.

Although Feature 3 (the constructed drainage located south of the project area) has a continuous surface connection to the Santa Ana River, a non-wetland water of the U.S., it is an ephemeral feature that does not meet the relatively permanent standard; thus, is likely not considered a water of the U.S. The remaining ephemeral drainage features within the surrounding study area (Features 2, 4, and 5) have no continuous surface connection to waters of the U.S.; therefore, do not meet the definition of a non-wetland water of the U.S. While Features 2 through 5 are located outside the project area and do not support riparian habitat, they may still be regulated by the CDFW and RWQCB. However, the proposed project has no planned impacts to these features as they are situated outside of the project area.

Standard Metropolitan Practices and Recommended Avoidance, Minimization, and Recommended Measures

The following lists standard Metropolitan practices and recommended avoidance, minimization, and mitigation measures to avoid, minimize, and/or mitigate the project's effects on biological resources.

Standard Metropolitan Practices

Standard Metropolitan Practice (SMP)-1: General Avoidance and Minimization Measures

- **Permits.** The Contractor shall obtain necessary local, state, and federal environmental permits and shall comply with the requirements of all such permits and laws, regulations, acts, codes, and ordinances.

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- **Construction Boundaries.** The Contractor shall perform all construction activities only within the construction boundaries shown on the drawings. The construction boundaries shall be fenced, unless otherwise directed by the Engineer. Any request to use any area outside the construction boundaries for any activity will require review and approval by the Engineer.
- **Worker Environmental Awareness Protections Training.** Metropolitan routinely conducts pre-construction Worker Environmental Awareness Protections Training (WEAP) for both capital projects and operations and maintenance activities. WEAP trainings are project-specific and cover potential environmental concerns or considerations including, but not limited to, awareness of biological resources, special status species near project sites, jurisdictional waters, cultural resources, paleontological resources, environmentally sensitive areas, and/or avoidance areas.
- **Environmental Assessment.** As an internal practice, Metropolitan conducts Environmental Assessments or similar studies prior to project commencement to determine if any sensitive resources have the potential to be present at a project site. Resources assessed typically include biological, cultural, paleontological resources, noise sensitivity, and sensitive receptors in the vicinity of the project area.

SMP-2: Hazardous Materials

- The Contractor shall clean up all spills in accordance with all applicable environmental laws and regulations and notify the Engineer immediately in the event of a spill.
- Stationary equipment such as motors, pumps, and generators, shall be equipped with drip pans.
- The Contractor shall handle, store, apply, and dispose of chemicals and/or herbicides consistent with all applicable federal, state and local regulations.
- The Contractor shall dispose of all contaminated materials in a manner consistent with all applicable local, state and federal environmental laws and regulations.
- Hazardous materials shall be stored in covered, leak-proof containers when not in use, away from storm drains and heavy traffic areas, and shall be protected from rainfall infiltration. Hazardous materials shall be stored separately from non-hazardous materials on a surface that prevents spills from permeating the ground surface, and in an area secure from unauthorized entry at all times. Incompatible materials shall be stored separately from each other.

SMP-3: Hydrology and Water Quality

- The Contractor shall not allow any equipment or vehicle storage within any drainage course or channels.
- Any material placed in areas where it could be washed into a drainage course or channel shall be removed prior to the rainy season.

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- The Contractor shall not create a nuisance or pollution as defined in the California Water Code. The Contractor shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Quality Control Board or the SWRCB, as required by the Clean Water Act (CWA).
- Dewatering activities shall not affect any vegetation outside of the construction limits. The Contractor shall submit proposed dewatering plans to the Engineer for approval prior to any dewatering activities.

SMP-4: Lighting

- The Contractor shall exercise special care to direct floodlights to shine downward. These floodlights shall also be shielded to avoid a nuisance to the surrounding areas. No lighting shall include a residence or native area in its direct beam. The Contractor shall correct lighting nuisance whenever it occurs.

Recommended Avoidance and Minimization Measures

Avoidance and Minimization Measure (AMM)-1: Best Management Practices

- **Prevention of Inadvertent Entrapment.** To prevent inadvertent entrapment of common and special-status wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep will be covered with tarp, plywood or similar materials at the close of each working day and will be inspected visually to confirm animals would be excluded, to prevent animals from being trapped. Ramps may be constructed of earth fill or wooden planks within deep walled trenches to allow animals to escape, if necessary. Before such holes or trenches are backfilled, they should be thoroughly inspected for trapped animals. If trapped wildlife is observed, escape ramps or structures will be installed immediately to allow escape.
- **Construction Contractor Specifications.** AMM-1 through AMM-9 will be incorporated into the construction contractor specifications.
- **Trash/Debris Removal.** During project construction activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all spoils, trash, or any debris will be removed off-site to an approved disposal facility or stored appropriately.
- **Speed Limits.** Vehicles will be restricted to existing access roads and approved work areas and will maintain speed limits of no greater than 15 miles per hour on unpaved roads.

AMM-2: Special-Status Plants

Prior to construction that could potentially remove special-status plants, a qualified botanist shall conduct a pre-construction floristic inventory and focused rare plant survey to determine and map the location and extent of special-status plant species populations within disturbance areas within suitable habitat. This survey shall occur during the typical blooming periods of special-status plants with the potential to occur: Parry's spineflower (*Chorizanthe parryi* var. *parryi*; CRPR 1B.1; blooming period April – June), Plummer's mariposa lily (*Calochortus plummerae*; CRPR 4.2; blooming period May – July), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*; CRPR 4.3; blooming period January – July), Santa Ana River woollystar (*Eriastrum*

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densifolium ssp. *sanctorum*; FE, SE, CRPR 1B.1; blooming period April – September), and slender-horned spineflower (*Dodecahema leptoceras*; FE, SE, CRPR 1B.1; blooming period April – June). The plant survey shall follow the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018).

If special-status plants are not identified within the project impact area, then ground-disturbing activities may commence. If special-status plants are detected and project-related impacts are unavoidable, then the preparation and implementation of a special-status species salvage, seed collection, and replanting plan would be required, and consultation with the regulatory agencies would be required to address potential take of listed plant species. The salvage, seed collection, and replanting plan shall include measures to salvage, collect seed, replant, and monitor the disturbance area until native vegetation is re-established.

Pre-construction special-status plant surveys are scheduled to be conducted in 2024. If construction does not begin by 2027, a qualified botanist shall conduct an additional pre-construction floristic inventory and focused rare plant survey in accordance with the guidance above during the appropriate blooming period the year prior to the commencement of project activities.

AMM-3: Nesting Birds/Raptors and Special-Status Birds

Project activities could negatively impact nesting birds that are protected in accordance with the MBTA and FGC, as well as other special-status avian species, such as the Bell’s sparrow, burrowing owl, California horned lark, coastal California gnatcatcher, loggerhead shrike, and southern California rufous-crowned sparrow. No physical disturbance of vegetation, operational structures, buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the MBTA and FGC shall occur in the breeding season, except as necessary to respond to public health and safety concerns, or otherwise authorized by the Engineer. The breeding season extends from February 15 through August 31 for passerines and general nesting and from January 1 through August 31 for raptors.

- If nesting habitat (including annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover types within the study area) must be cleared or project activities must occur within 500 feet of nesting habitat within the breeding season as defined above, a qualified biologist shall perform a nesting bird survey no more than three days prior to clearing or removal of nesting habitat or start of project activities. Surveys will be performed in all Metropolitan accessible areas (fee property and easements) and inaccessible areas will be visually surveyed to their full extent without trespassing.
- If active nests for sensitive species, raptors and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures, as appropriate, shall be established, as identified by a qualified biologist and approved by the Engineer. Construction avoidance buffers are generally 300 feet for non-listed passerines and 500 feet for listed avian species (i.e., coastal California gnatcatcher) and raptors; however, avoidance buffers may be modified at the discretion of the biologist, depending on the species, location of the nest and species tolerance to human presence and construction-related noises and vibrations. The buffer shall

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be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing shall not be conducted within this zone until the young have fledged and are no longer reliant on the nest.

- Additional measures may include (but are not limited to): construction avoidance, until the nest is no longer active, noise attenuation measures to reduce construction noise levels to below 60 dBA Leq (an hourly measurement of A-weighted decibels) or ambient (if existing ambient levels are above 60 dBA), and biological monitoring during construction activities to ensure the species is not harmed during Project implementation.
- A qualified biologist shall monitor active nests or nesting bird habitat within or immediately adjacent to project construction areas, and the Engineer shall provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds.

AMM-4: Crotch Bumble Bee

Project activities could negatively impact suitable Crotch bumble bee foraging and/or nesting habitat within the California buckwheat – brittle bush scrub planned for removal in the project area. Therefore, the following measures are recommended to avoid impacts to this species.

- A qualified entomologist familiar with the species' behavior and life history shall conduct surveys to determine presence/absence of the Crotch bumble bee within the year prior to vegetation removal and/or grading in areas that provide suitable habitat for this species. A minimum of three surveys, ideally 2-4 weeks apart, should also be conducted during peak flying season when the species is most likely to be detected above ground, between March 1 to September 1 and during peak bloom of nectaring resources (Thorp et al. 1983; CDFW 2023c). At minimum, a survey report should provide the following:
 - A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch bumble bee.
 - Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched.
 - Map(s) showing the location of nests/colonies.
 - A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).
- If Crotch bumble bee is detected, the qualified entomologist should identify the location of all nests within and adjacent to the project site. A 15-meter (50-foot) no disturbance buffer zone should be established around any identified nest(s) to reduce the risk of disturbance or accidental take. A qualified entomologist should expand the buffer zone as necessary to prevent disturbance or take.

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- If Crotch bumble bee is detected and impacts to Crotch bumble bee cannot be feasibly avoided, Metropolitan should consult with CDFW and obtain appropriate take authorization from CDFW (pursuant to FGC, § 2080 et seq).
- Any floral resource associated with Crotch bumble bee that will be removed or damaged by the project should be replaced at no less than 1:1, as determined in consultation with CDFW.

AMM-5: Western Spadefoot

Although limited suitable breeding habitat is present within the constructed basin and associated drainage located in the project area, project activities could negatively impact suitable western spadefoot upland habitat, including all of the natural communities and excluding the disturbed and developed land cover, within the small mammal burrows located in the project area. Therefore, the following measures are recommended to avoid impacts to this species.

- A qualified biologist shall survey areas of suitable habitat for western spadefoot in the project area, including ruts, small pools, and the constructed basin and associated drainage. The survey shall be conducted during the active season of western spadefoot (which corresponds with the rainy season).
- If surveys result in the observation of western spadefoot within project impact areas, observed individuals and/or eggs shall be removed from project impact areas and be relocated to pre-determined suitable habitat in an appropriate area that will not be impacted.
- For work during the western spadefoot toad migration and breeding season (November 1 to May 31), a qualified biologist will survey the active work areas (including access roads) in the mornings following measurable precipitation events. Construction may commence upon confirmation from the biologist that no western spadefoot toads are in the work area.
- When feasible, a 50-foot avoidance buffer will be maintained around burrows that provide suitable upland habitat for western spadefoot toad, as identified by a qualified biologist. The biologist will delineate and mark the no-disturbance buffer.
- If western spadefoot toad is found within the construction footprint, it will be allowed to move out of harm's way on its own accord or a qualified biologist will relocate it to the nearest suitable burrow outside of the construction impact area.
- Prior to beginning work, a qualified biologist will inspect underneath equipment and stored pipes greater than 1.2 inches (3 cm) in diameter for western spadefoot toad. If found, they will be allowed to move out of the construction area on their own accord.

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AMM-6: San Bernardino Kangaroo Rat Pre-Construction Presence/Absence Trapping Surveys

Prior to ground disturbing activities within areas with potential habitat for SBKR or other sensitive small mammals, a qualified SBKR biologist with a required Section 10(a) permit will conduct pre-construction presence/absence trapping surveys. These surveys will follow protocols and trapping methods approved by the regulatory agencies to determine the presence/absence of SBKR and other sensitive small mammals on site.

- If pre-construction presence/absence trapping surveys within the Stage 1 area are negative, then exclusionary fencing (AMM-6) will be installed.
- If SBKR are determined to be present within the Stage 1 project area resulting from the trapping surveys an ITP will need to be obtained. Construction within occupied habitat areas will not proceed until appropriate authorization (i.e., FESA and/or CESA ITP) is obtained.
- Stage 2 construction will not commence until appropriate authorization (i.e., FESA and/or CESA ITP) is obtained. Implementation of protection measures and compensatory mitigation for SBKR, in addition to those identified in this document, will be required as conditions of federal and state take permits.

AMM-7: San Bernardino Kangaroo Rat Exclusionary Fencing

Exclusionary fencing will be erected in construction areas with potential to be occupied by SBKR or containing kangaroo rat sign (e.g., burrows, scat, tail drag, or dust baths) as determined by a preconstruction survey conducted by a qualified biologist.

- A qualified biologist or approved biological monitor will be present on site when the fence is installed to minimize disturbance of SBKR burrows from fence installation.
- The integrity of the fencing will be checked by a qualified biologist at the end of each workday. Any gaps will be repaired immediately.
- Construction access openings will be closed and secured at the end of each workday using the at-grade fencing method.
- The fence will remain in place for the duration of construction activities and removed at the completion of the relevant project activity.
- Stage 1 exclusionary fencing will be installed at grade to minimize the risk of unauthorized take.

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AMM-8: San Bernardino Kangaroo Rat and General Construction Monitoring

- **SBKR Biologist.** A qualified biologist or approved biological monitor will visually inspect trenches and steep-walled holes before the onset of daily construction for presence of SBKR. If SBKR are discovered, the biologist will supervise the movement or relocation of the equipment until the animal has left the area on its own.
 - To the extent feasible, soil stockpiles in SBKR habitat will be located within the construction area inside the exclusionary fence or within the existing facility in areas devoid of vegetation.
 - Nighttime work shall be avoided as much as possible. If nighttime work is necessary, all lighting shall be directed exclusively at the work area to avoid areas that support local wildlife movement, such as ephemeral drainages, to the greatest extent practical. Any nighttime lighting shall be shielded downward as to avoid light spillage into the surrounding areas.
- **Limits of Disturbance.** Prior to construction in or adjacent to habitats for special-status species, and under the direction of a qualified biologist, Metropolitan will clearly delineate the construction right-of-way (stake, flag, fence, etc.) that restricts the limits of construction to the minimum necessary to implement the project.
- **Biological Monitoring.** Prior to the start of construction, Metropolitan will retain a qualified biological monitor(s) to be onsite during the initial ground disturbance and during construction activities to monitor habitat conditions and impacts. The biological monitor will ensure compliance with the AMMs and will have the authority to halt or suspend all activities until appropriate corrective measures have been taken. The biological monitor will be a qualified biologist with species expertise appropriate for this project.
- **On Site Overnight Storage.** All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods should be thoroughly inspected for birds and other wildlife before the pipe is subsequently buried, capped, or otherwise used or moved.

AMM-9: Special-Status Ground-Dwelling Wildlife

Project activities could negatively impact special-status ground-dwelling wildlife that are protected in accordance with the CESA and FGC, such as Belding's orange-throated whiptail, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern California legless lizard, and southern grasshopper mouse. Therefore, the following measure is recommended to avoid impacts to these species.

- A qualified biologist shall conduct a preconstruction clearance survey throughout the project area. If any of these species are observed during the survey, a qualified biologist should relocate the individual to suitable habitat adjacent to the project area.

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AMM-10: Burrowing Owl

Prior to the initiation of any ground disturbing activities within 500 feet of suitable burrowing owl habitat, including all of the natural communities and land cover types within the study area, focused protocol surveys for burrowing owl will be conducted by a qualified biologist throughout the study area following the protocol outlined in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). If the qualified biologist finds evidence of burrowing owls during the burrowing owl breeding season (February 1 through August 31), all project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance includes establishment of a minimum 300-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 300-foot buffer zone. Construction and other project-related activities may be allowed inside of the 300-foot avoidance buffer during the breeding season if the nest is not disturbed, and the project activities are monitored by a qualified biologist.

Recommended Mitigation Measures

Mitigation Measure BIO-1: Compensation for Impacts to Federally and State-Listed Species Habitat.

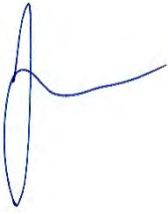
Direct temporary and permanent impacts to suitable habitat for federally or state-listed species shall be mitigated through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies.

- **Temporary Impacts.** Mitigation for direct temporary impacts to suitable habitat for federally or state-listed species shall be provided through on-site restoration. Areas temporarily impacted shall be returned to similar conditions to those that existed prior to grading and/or ground-disturbing activities.
- **Permanent Impacts.** Metropolitan shall purchase credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies to compensate for all permanent loss of suitable habitat for federally or state-listed species (including critical habitat), if available, at a 1:1 ratio. Direct impacts to federally listed species' occupied habitat shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal Endangered Species Act (ESA) of 1973, as amended. Additionally, direct impacts to federally designated critical habitat that cannot be avoided shall be addressed through either the ESA Section 7 or Section 10(a)(1)(B) process. Direct impacts to state-listed species shall be addressed through the California Fish and Game Code Section 2081(b) incidental take permit process. The two permits and authorization by the agencies with jurisdiction over these resources may require additional measures (e.g., avoidance, conservation, etc.) beyond what is being proposed under this CEQA analysis.

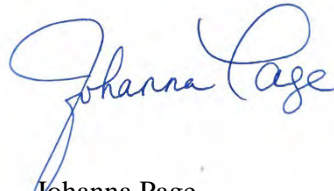
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If you have any questions regarding this letter report, please do not hesitate to contact Amanda French (afrench@esassoc.com) at (530) 966-4294 or Johanna Page (jpage@esassoc.com) at (626) 677-7680.

Sincerely,



Amanda French
Biologist



Johanna Page
Principal Biologist

List of Attachments

Attachment A: Results of the 2023 Nighttime Small Mammal Activity Surveys
Attachment B: Representative Photographs
Attachment C: Floral and Faunal Compendia
Attachment D: CNDDB and CNPS Results
Attachment E: Exclusionary Fence Design

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Attachment A

Results of the 2023 Nighttime Small Mammal Activity Survey



memorandum

date November 16, 2023

to Alfredo Aguirre, Environmental Specialist – Metropolitan Water District of Southern California (Metropolitan)

from Johanna Page, Principal Biologist – Environmental Science Associates (ESA)

subject Results of Nighttime Small Mammal Activity Surveys for Metropolitan’s Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California

Environmental Science Associates (ESA) conducted nighttime small mammal activity surveys for the Metropolitan Water District of Southern California’s (Metropolitan) Inland Feeder Foothill Pump Station Intertie Phase 1 Project (project). The project requires work in areas that are adjacent to occupied San Bernardino kangaroo rat (SBKR; *Dipodomys merriami parvus*) habitat and suitable SBKR burrows were identified within the project site. SBKR is federally listed as endangered, state candidate for listing as endangered and a species of special concern. Based on the findings of previous focused SBKR surveys and SBKR burrow surveys conducted in the survey area in 2022 and 2023, motion-detecting cameras were recommended to determine kangaroo rat presence within the project site. The surveys were conducted in March and July 2023 using nighttime-vision equipment to determine nighttime small mammal activity in the project area, with particular emphasis focused on whether the small mammals are accessing the site from neighboring areas or using burrows within the proposed exclusion fencing areas planned for the project. The March 2023 nighttime small mammal activity survey area corresponds with the future exclusion fencing areas proposed for the project, while the July 2023 nighttime small mammal activity survey corresponds with a larger area and includes burrows where previous SBKR were captured to serve as a control.

Project Site

The project site is generally located north of the Santa Ana River, south of Greenspot Road, east of State Route 210, and west of State Route 38 in San Bernardino County, California. More specifically, the project site is located southwest of the terminus of Cone Camp Road, north of Weaver Street, within the U.S. Geological Survey (USGS) Redlands 7.5-minute quadrangle (**Figure 1, Regional Vicinity and Project Location**). The project site includes an existing fenced and graded triangular area that encompasses Metropolitan and San Bernardino Valley Municipal Water District (SBVMWD) facilities, as well as the area immediately south and northwest of the existing facility where existing graded maintained roads with California buckwheat – brittle bush scrub (*Eriogonum fasciculatum* – *Encelia farinosa* shrubland) habitat is present interspersed between the existing roads.

Background

In October 2022, ECORP conducted a protocol-level SBKR trapping survey, which included five nights of consecutive trapping with a total of 135 baited collapsible Sherman live-traps placed in areas of suitable SBKR habitat in the southern portion of the project site (ECORP 2022). Five rodent species were captured during the protocol-level trapping survey: SBKR, San Diego pocket mouse (*Chaetodipus fallax*), Bryant's woodrat (*Neotoma bryanti*), northern Baja deer mouse (*Peromyscus fraterculus*), and deer mouse (*Peromyscus maniculatus*) (ECORP 2022). The 2022 trapping effort yielded a total of three SBKR adult male individuals, captured in four different locations during seven captures, as well as a total of 76 captures of San Diego pocket mouse, 45 captures of northern Baja deer mouse, 18 captures of deer mouse, and 16 Bryant's woodrat captures in the southern extent of the project site. As a result, the project team, in coordination with USFWS, refined the project footprint to avoid areas where SBKR individuals were trapped in 2022 and performed additional biological surveys.

In March 2023, ESA conducted a SBKR burrow survey to determine if potential SBKR burrows occur within the project site, with a focus on the newly proposed project impact areas that were redesigned to avoid take of SBKR (ESA 2023). Based on the findings of the SBKR burrow survey conducted within the southern portion of the project site, subsequent motion-detecting cameras were recommended to identify kangaroo rat presence within the updated temporary and permanent impact areas, also referred to as impact areas in this report. Thus, the nighttime activity survey was designed to confirm where exclusionary fencing should be installed within the southern extent of the project site. The potential SBKR burrows were detected within the northwestern extent of the project site following the installation of the camera installation; thus, were not incorporated in the March 2023 nighttime small mammal activity survey. However, this northwestern portion of the project site was encompassed within the subsequent July 2023 nighttime small mammal activity survey.

Methodology

March 2023 Nighttime Small Mammal Activity Survey Area

The March 2023 nighttime small mammal activity survey area (March 2023 survey area) focused on areas with potentially suitable SBKR habitat and SBKR burrows concentrated in the southern portion of the project site, north and south of the existing unnamed dirt access road and southern entrance to the site, and north of Weaver Street (a dirt road). The March 2023 survey area generally overlapped with the proposed exclusion fencing area along the southern extent of the project site, and was identified by overlaying the temporary and permanent impact area boundaries, north and south of the existing graded road to the southern entrance to the existing MWD and SBVMWD facility on site, with the results of the protocol-level SBKR surveys conducted by ECORP in 2022 and subsequent SBKR burrow surveys conducted by ESA in 2023 for the project site (ECORP 2022; ESA 2023) (**Figure 2, SBKR Captures, Potential Burrows, and Camera Locations**). The project was designed to avoid impacts to habitat where SBKR individuals were trapped during protocol-level trapping surveys conducted in 2022 for the project (ECORP 2022). Therefore, the nighttime activity survey was focused on determining small mammal activity within the proposed exclusion fencing areas with suitable SBKR burrows to ensure avoidance.

July 2023 Nighttime Small Mammal Activity Survey Area

Based on the minimal detection of small mammals captured during the March 2023 nighttime small mammal activity survey, ESA conducted an additional nighttime small mammal activity survey to determine the project area in July 2023. The July 2023 nighttime small mammal activity survey area (July 2023 survey area) focused on

a slightly larger area than accounted for during the March 2023 survey area to include surrounding areas where SBKR were previously captured in 2022 to serve as a control (**Figure 2**). As a result, the July 2023 survey area focused on all suitable SBKR habitat within the project site, including suitable SBKR habitat identified outside of the proposed exclusion fencing area and suitable SBKR habitat in the northwestern extent of the project site. The July 2023 survey was focused on determining use of potential kangaroo rat burrows in the project site (not just within the proposed project impact areas) to gain a better understanding of their use to ensure avoidance.

Nighttime Small Mammal Activity Camera Survey

The camera direction and location were selected according to the burrow locations identified during focused surveys and SBKR burrow survey locations mapped in 2022 and 2023, as well as based on the best line of sight to capture movement in the area (e.g., along dirt areas devoid of vegetation, through breaks in the vegetation, where the exclusion fencing was proposed, and where suitable SBKR burrows occur). Vegetation in the survey area was dense in locations so the biologists focused on installing camera locations in shrub patches that contained open areas with suitable SBKR burrows and bare ground (when possible) to maximize species photo captures. To the extent feasible, cameras were locked inside specialized security boxes to prevent vandalism and theft. Wildlife cameras were either bolted to 4-foot-tall steel posts or cabled to a chain-link fence or vegetation and angled toward the line of sight of the burrow location positioned approximately 1 to 4 feet off the ground. The cameras were oriented away from the sun (to the extent practical) to protect the lens from over-exposure and positioned to capture photographs and short video clips of wildlife walking within the camera's line of sight. Bait was not used as to not attract species from outside of the survey area into the survey area, since the survey's intention was to determine what small mammal species are using the area and where they are travelling in the project area and SBKR were captured outside of the survey area.

Once installed, all wildlife cameras were set to capture images throughout a 24-hour period. Each motion trigger was set to capture three consecutive photographs and a 20-second video clip, also considered a unique camera detection in this report, at intervals of at least 30 seconds between each unique camera detection. The wildlife cameras were placed on site for a minimum of five days. During the July 2023 nighttime activity survey, four of the cameras (8A, 12A, 13A, and 14A) that did not appear to function as well were switched with known functioning cameras and were placed on site for an additional three days, for a total of eight days. Upon removal, photographs and videos were reviewed and categorized based on the camera location and species detected. Videos and photographs of human activity, dogs, and/or vehicles were categorized as well to make general assumptions regarding the amount of anthropogenic disturbance in the survey area.

March 2023 Camera Survey

During the March 2023 nighttime small mammal activity survey, a total of six infrared motion detection wildlife cameras (Bushnell Trophy Cam) were installed within the March 2023 survey area to capture areas where potentially suitable SBKR burrows were abundant in the project area or in areas within the exclusion fencing area closest to where SBKR captures occurred in 2022 during protocol-level surveys (ECORP 2022). The wildlife cameras were installed on March 24, 2023, and removed on March 28, 2023. Specific data on the location and duration of monitoring at each remote wildlife camera is provided in **Table 1** and the camera locations are depicted in **Figure 2**. The target species for this study were small mammals, with a focus on rodent species such as mice, woodrats, and kangaroo rat species known to occur in the project site based on previous trapping surveys.

TABLE 1
MARCH 2023 REMOTE NIGHTTIME ACTIVITY SURVEY CAMERA LOCATIONS

Camera	Deployment Dates	Camera Duration	Location	Camera Direction
C-01	3/24/2023–3/28/2023	5 days	Lat: 34.106352° Long: -117.140944°	Facing east toward burrow 30 (north of graded road).
C-02	3/24/2023–3/28/2023	5 days	Lat: 34.106385° Long: -117.140441°	Facing southwest toward the general area of burrows 7 and 8 (north of graded road).
C-03	3/24/2023–3/28/2023	5 days	Lat: 34.106304° Long: -117.139997°	Facing north toward burrow 13, with burrows 10 and 12 in the background (north of graded road).
C-04	3/24/2023–3/28/2023	N/A	Lat: 34.106362° Long: -117.139756°	Facing east toward burrows 21, 22, and 26, with burrow 25 in the background (north of graded road).
C-05	3/24/2023–3/28/2023	5 days	Lat: 34.106264° Long: -117.139912°	Facing north toward burrow 14 (north of graded road).
C-06	3/24/2023–3/28/2023	5 days	Lat: 34.106116° Long: -117.139955°	Facing northwest toward burrows 42 and 43 (south of graded road and north of Weaver Street).

July 2023 Camera Survey

During the July 2023 nighttime small mammal activity survey, a total of 15 infrared motion detection wildlife cameras (Bushnell Trophy Cam, Browning, and Reconyx) were installed within the July 2023 survey area to capture photos in areas where potentially suitable SBKR burrows were abundant in the project area or in areas within the exclusion fencing area closest to where SBKR captures occurred in 2022 during protocol-level surveys (ECORP 2022). The majority of the wildlife cameras were installed on July 5, 2023, and removed on July 10, 2023. However, some cameras appeared to not function well in the field and were switched out with better cameras on July 10, 2023, and left on site until July 13, 2023 (these cameras are labelled with “A” next to their number value in **Table 2** below). Specific data on the location and duration of monitoring at each remote wildlife camera is provided in **Table 2** and the camera locations are depicted in **Figure 2**. Similarly, the target species for this study were small mammals, with a focus on rodent species such as mice, woodrats, and kangaroo rat species known to occur in the project site based on previous trapping surveys.

TABLE 2
JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY CAMERA LOCATIONS

Camera	Deployment Dates	Camera Duration	Location	Camera Direction
C-1*	7/5/2023–7/10/2023	5 days	Lat: 34.106352° Long: -117.140944°	Facing northeast toward burrow 30 (north of graded road).
C-2*	7/5/2023–7/10/2023	5 days	Lat: 34.106291° Long: -117.140665°	Facing east toward burrow 6 (immediately W of SCE pole #254468E and north of graded road).
C-3*	7/5/2023–7/10/2023	5 days	Lat: 34.106380° Long: -117.140609°	Facing northeast toward burrows 7 and 8 (north of graded road).
C-4*	7/5/2023–7/10/2023	5 days	Lat: 34.106385° Long: -117.140033°	Facing west toward burrows 10 and 12 (north of graded road).
C-5*	7/5/2023–7/10/2023	5 days	Lat: 34.106289° Long: -117.140028°	Facing southwest toward burrow 11 (north of graded road).

Camera	Deployment Dates	Camera Duration	Location	Camera Direction
C-6*	7/5/2023–7/10/2023	5 days	Lat: 34.106116° Long: -117.139955°	Facing northwest toward burrows 42 and 43 (south of graded road and north of Weaver Street).
C-7	7/5/2023–7/10/2023	5 days	Lat: 34.106402° Long: -117.139813°	Facing southwest toward burrows 15, 16, and 17 (north of graded road and east of exclusion fencing area).
C-8*	7/5/2023–7/10/2023	5 days	Lat: 34.108153° Long: -117.141675°	Facing southeast toward burrows 47 and 48 (northwestern portion of project site).
C-8A*	7/10/2023–7/13/2023	3 days	Lat: 34.108153° Long: -117.141675°	Facing southeast toward burrows 47 and 48 (northwestern portion of project site; new camera).
C-9	7/5/2023–7/10/2023	5 days	Lat: 34.106286° Long: -117.139893°	Facing north toward burrow 14 (north of graded road and east of exclusion fencing area).
C-10	7/5/2023–7/10/2023	5 days	Lat: 34.106134° Long: -117.139592°	Facing east toward burrows 45 and 46 (south of graded road, north of Weaver Street, and east of exclusion fencing area).
C-11	7/5/2023–7/10/2023	5 days	Lat: 34.106294° Long: -117.139600°	Facing north toward burrow 28 (north of graded road and east of exclusion fencing area).
C-12	7/5/2023–7/10/2023	5 days	Lat: 34.106313° Long: -117.141269°	Facing west toward burrows 1, 2, and 3 (north of graded road and west of exclusion area).
C-12A	7/10/2023–7/13/2023	3 days	Lat: 34.106313° Long: -117.141269°	Facing west toward burrows 1, 2, and 3 (north of graded road and west of exclusion area; new camera).
C-13	7/5/2023–7/10/2023	5 days	Lat: 34.106136° Long: -117.141465°	Facing south toward burrows 41 (south of graded road and west of exclusion area).
C-13A	7/10/2023–7/13/2023	3 days	Lat: 34.106136° Long: -117.141465°	Facing south toward burrows 41 (south of graded road and west of exclusion area; new camera).
C-14*	7/5/2023–7/10/2023	5 days	Lat: 34.108311° Long: -117.141672°	Facing east toward burrow 49 (northwestern portion of project site).
C-14A*	7/10/2023–7/13/2023	3 days	Lat: 34.108311° Long: -117.141672°	Facing east toward burrow 49 (northwestern portion of project site; new camera).
C-15	7/5/2023–7/10/2023	5 days	Lat: 34.106395° Long: -117.139750°	Facing northeast toward burrows near 22-26 (north of graded road and east of exclusion fencing area).

* Camera locations located within the proposed project impact areas.

Results

March 2023 Nighttime Small Mammal Activity Survey Results

During the March 2023 nighttime small mammal activity survey, five of the six wildlife cameras captured data during the survey effort spanning over five days. Wildlife camera 4 (C-04) malfunctioned and did not capture any photos during the survey. Species detected at the five functioning wildlife camera locations (C-01, C-02, C-03, C-05, and C-06) included coyote (*Canis latrans*), California ground squirrel (*Otospermophilus douglasii*), desert cottontail (*Sylvilagus audubon*), various bird species (i.e., swallows (*Hirundo* spp.), common ravens (*Corvus corax*), and American crows (*Corvus brachyrhynchos*)), western fence lizard (*Sceloporus occidentalis*), invertebrates (i.e., flies, bees, moths, and butterflies), and domesticated dog. Vehicles also accounted for a

number of the photo captures within March 2023 survey area. A summary of the results of the wildlife camera data from March 24, 2023, to March 28, 2023, can be found in **Table 3**.

TABLE 3
MARCH 2023 REMOTE NIGHTTIME ACTIVITY SURVEY DATA (UNIQUE CAMERA DETECTIONS)

Camera Station No.	Coyote	Domesticated Dog	California Ground Squirrel	Desert Cottontail	Swallow, Crow, Raven	Fence Lizard	Fly, Bee, Moth, Butterfly	Car, Truck
	Mammals				Birds	Reptiles	Invertebrates	Vehicle
C-01	4	0	0	0	0	0	0	0
C-02	6	0	0	10	0	0	0	0
C-03	2	0	0	0	8	0	4	8
C-04	Camera Malfunctioned (No Data)							
C-05	0	0	0	14	0	1	14	10
C-06	0	2	46	13	0	0	1	8
Total	12	2	46	37	8	1	19	26

The most common wildlife species detected during the March 2023 nighttime small mammal activity survey was California ground squirrel (46 unique camera detections) and desert cottontail (37 unique camera detections), followed by invertebrates (19 unique camera detections), coyote (12 unique camera detections), birds (8 unique camera detections), domesticated dog (2 unique camera detections), and fence lizard (1 unique camera detections). Many of the photos taken of these species are likely of the same individuals recurring through the photograph frame and captured numerous times. Thus, the total unique camera detections captured are not representative of these species' population size in the area. Additionally, California ground squirrel observations were most prevalent during the daytime, while desert cottontail was captured primarily in the early mornings and evenings. Although coyotes triggered 12 unique camera detections across three camera locations (C-1, C-2, and C-3), based on the time stamp of the detection and the sightings, these detections are from one or two coyote individuals captured across multiple cameras based on the view from camera 1 which shows the coyote going through the line of sight of other cameras located in the survey area. No Rodentia species were detected during the March 2023 nighttime activity survey. Representative photographs of wildlife species detected in March 2023 are included in **Attachment A, Representative Photographs of Wildlife Detected during the Nighttime Activity Survey**.

July 2023 Nighttime Small Mammal Activity Survey Results

During the subsequent July 2023 nighttime small mammal activity survey, all 15 wildlife cameras captured data during the survey effort spanning a minimum of five days. Four of the wildlife cameras (C-8, C-12, C-13, and C-14) were not working to their fullest extent (e.g., were capturing only video, minimal images were captured, etc.) and were replaced with known functioning cameras and were left on site for an additional three days; thus,

cameras at these camera locations captured images for a total of eight days. Species detected at the 15 wildlife camera locations included coyote, California ground squirrel, desert cottontail, deer mouse (*Peromyscus* sp.), kangaroo rat (*Dipodomys* sp.), pocket mouse (*Chaetodipus* sp.), rodent (unknown) (Rodentia that could not be determined to genus from the photo capture), woodrat (*Neotoma* sp.), various birds (swallow, crow, raven, and towhee (*Pipilo* spp.)), herptiles (i.e., fence lizard, whiptail (*Aspidoscelis* sp.), and toad), invertebrates (i.e., flies, bees, moths, butterflies, unknown), and vehicles. A summary of the results of the wildlife camera data from July 5, 2023, to July 13, 2023, can be found in **Table 4**. Eight of the camera locations (C-1 through C-6, C-8, and C-14) occurred within the proposed project impact area, while the remaining seven camera locations (C-7, C-9 through C-13, and C-15) were installed outside of the proposed project impact area. The eight camera locations installed within the project impact area are highlighted in brown in **Table 4** below.

TABLE 4
JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY DATA (UNIQUE CAMERA DETECTIONS)

Camera Station No.	Coyote	California Ground Squirrel	Desert Cottontail	Deer Mouse	Kangaroo Rat	Pocket Mouse	Rodent (Unknown)	Woodrat	Swallow, Crow, Raven, Towhee	Fence Lizard	Whiptail	Toad	Fly, Bee, Moth, Butterfly	Car, Truck
	Mammals								Birds	Herptiles			Invertebrates	Vehicle
C-1	0	0	0	4	0	0	0	0	0	4	7	0	17	14
C-2*	1	0	4	2	8	0	2	10	2	3	4	0	2	1
C-3*	0	0	1	0	1	0	0	0	0	0	0	0	4	54
C-4*	0	0	7	0	1	0	0	0	0	0	2	1	0	0
C-5	0	0	0	4	0	0	0	0	0	0	2	3	5	0
C-6	0	0	1	0	0	0	0	0	0	0	0	0	15	5
C-7*	2	1	7	11	2	0	5	0	0	0	4	0	2	0
C-8	0	0	0	0	0	0	0	0	0	0	0	0	18	3
C-8A	0	0	0	0	0	6	0	0	0	0	0	0	0	0
C-9*	0	1	13	0	6	0	0	4	1	0	0	0	2	0
C-10	0	0	1	0	0	0	0	2	0	0	1	0	34	0
C-11	0	0	0	0	0	0	3	0	0	0	0	0	22	0
C-12*	0	0	1	1	4	0	0	0	0	0	0	0	1	0
C-12A*	0	1	0	0	4	0	0	0	0	0	1	0	63	0
C-13	0	0	0	0	0	0	0	0	0	0	0	0	3	0
C-13A	0	0	0	0	0	0	0	0	0	0	0	0	58	0
C-14	0	0	0	0	0	0	0	0	0	0	0	0	1	0
C-14A	0	0	2	3	0	0	0	0	0	0	1	1	1	0
C-15	0	0	1	0	0	0	0	0	0	0	0	0	2	2
Total	3	3	38	25	26	6	10	16	3	7	22	5	250	79

* Camera locations with kangaroo rat detection(s).

The most common wildlife species detected during the July 2023 nighttime small mammal activity survey were invertebrates (250 unique camera detections), followed by desert cottontail (38 unique camera detections), kangaroo rat (26 unique camera detections), deer mouse (25 unique camera detections), and whiptail (22 unique camera detections). Other species observed less frequently include woodrat (16 unique camera detections), unknown Rodentia (10 unique camera detections), fence lizard (7 unique camera detections), pocket mouse (6 unique camera detections), toad (5 unique camera detections), California ground squirrel (3 unique camera detections), and coyote (3 unique camera detections). During July 2023, Rodentia species accounted for a total of 83 unique camera detections and may have been of the same individuals recurring through the photograph frame and captured numerous times. Thus, the total unique camera detections captured are not representative of their population size in the area. Representative photographs of wildlife species detected in July 2023 are included in **Attachment A**.

Weather

Weather likely played a role in the lack of Rodentia activity detected during the March 2023 nighttime activity small mammal activity survey effort, which resulted in additional nighttime small mammal activity surveys being warranted in July 2023. During the March 2023 nighttime small mammal activity survey, temperatures ranged from a low of 34.5° Fahrenheit (F) to a high of 71.4° F with most nighttime temperatures occurring between 37° F and 50° F during the time when kangaroo rats would be most active. During the July 2023 nighttime small mammal activity survey, temperatures ranged from a low of 54.3° F to a high of 101.8° F with most nighttime temperatures occurring between 57° F and 75° F during the time when kangaroo rats would be most active. Weather data for the March and July 2023 survey dates are summarized in **Tables 5** and **6**.

TABLE 5
MARCH AND JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY WEATHER DATA

Average Weather Conditions	March 2023 Dates					July 2023 Dates								
	3/24	3/25	3/26	3/27	3/28	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13
Temperature Low (°F)	41.7	37.4	34.5	38.3	41.7	55.8	54.7	54.3	55.8	55.8	57.4	63.0	66.9	66.7
Temperature High (°F)	63.3	64.0	63.5	68.5	71.4	94.8	91.8	89.8	91.2	91.2	99.1	101.8	98.8	98.8
Temperature Average (°F)	51.3	50.0	49.8	52.4	56.1	74.6	72.5	71.2	72.1	73.2	77.9	81.8	82.7	82.3
Wind Low (MPH)	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
Wind High (MPH)	9.8	12.5	8.5	8.5	8.1	10.1	7.4	8.1	8.5	7.2	7.2	6.9	7.4	7.4
Wind Average (MPH)	0.9	1.3	1.2	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8
Wind Direction	WNW	SSE	NNW	SE	WNW	NW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW
Precipitation Average (in.)	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moon Phase	WC	WC	WC	WC	FQ	WG	WG	WG	LQ	LQ	LQ	WC	WC	WC
Moon Visibility (%)	11.7	19.3	28.0	37.4	50.0	88.6	79.9	69.8	28.8	47.7	37.0	27.1	18.5	11.3

Legend:

°F = degrees Fahrenheit

MPH = miles per hour

in. = inches

% = percent

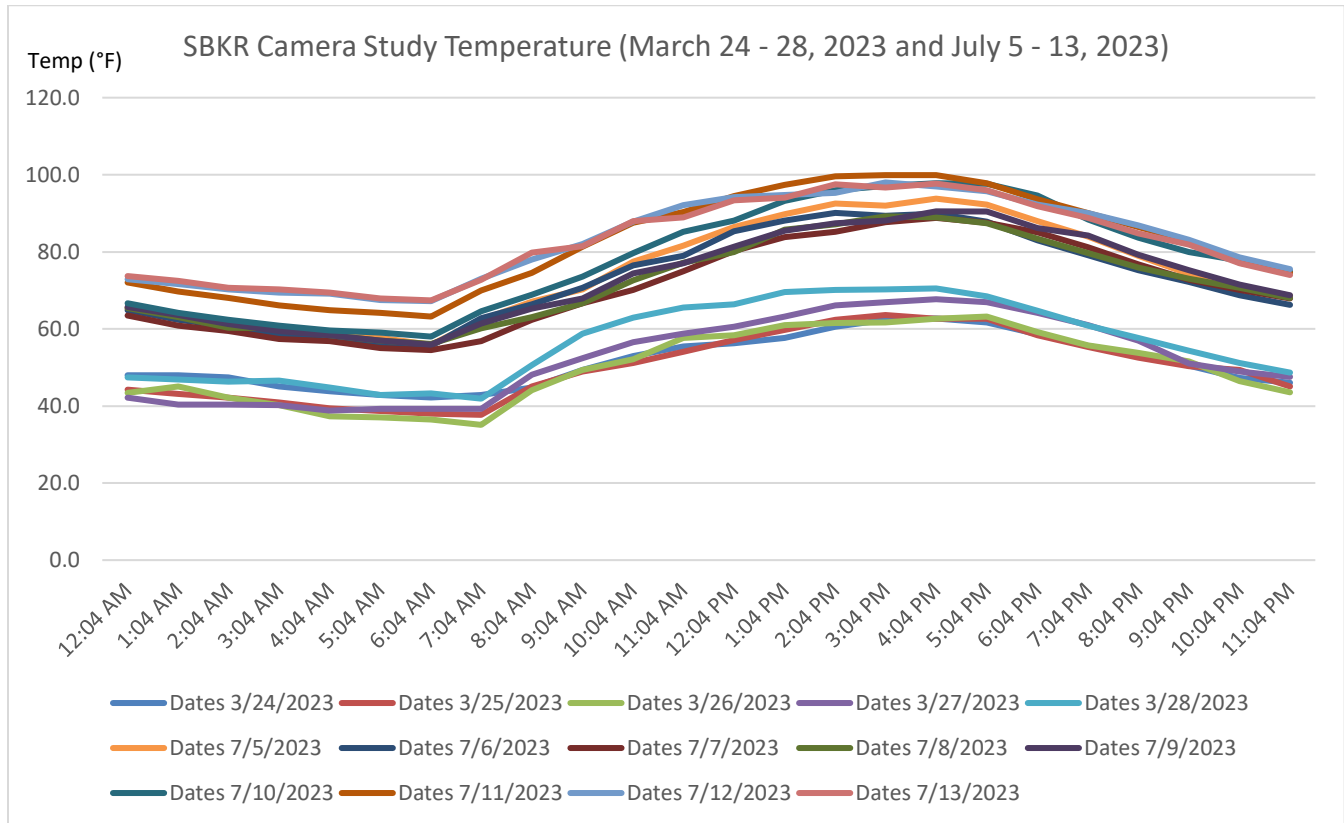
FQ = First Quarter

LQ = Last Quarter

WC = Waxing Crescent

WG = Waning Gibbous

TABLE 6
MARCH AND JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY TEMPERATURE GRAPH



Discussion

The March 2023 nighttime small mammal activity survey focused on the small mammal movement in the southern portion of the project site where the exclusion fencing was proposed. Although two small mammals, California ground squirrel and desert cottontail, were frequently detected in the survey area during the March 2023 nighttime small mammal activity survey effort, no rodent species were observed. Based on the results of the previous SBKR trapping efforts conducted in the project site in 2022, five rodent species are known to occur in the general project area: SBKR (3 individuals over 7 captures outside the survey area), San Diego pocket mouse (76 total captures), Bryant's woodrat (45 total captures), northern Baja deer mouse (16 total captures), and deer mouse (18 total captures) (ECORP 2022). Thus, ESA anticipated capturing unique camera detections for rodent species known to occur in the survey area during the nighttime activity survey. Cameras were placed in a manner that should have captured rodent activity if present on site, and cameras detected species of similar size or smaller and less detectable than rodents (i.e., invertebrates and fence lizards). Thus, weather was thought to have played a major role in why other rodent species that were likely to be present in the survey area were not detected during the March 2023 nighttime activity survey.

During the March 2023 survey effort, the weather dropped below 50° Fahrenheit (F) and was documented as low as 34.5°F on March 26, 2023, during the time that these species would have been active in the nighttime if present (see **Tables 5** and **6**). Based on literature review, San Diego pocket mouse is active year-round, but are known to have reduced activity during cold spells (Zeiner 1990). Likewise, although deer mice do not hibernate, they may become dormant (torpid) when weather is especially severe (University of California Agriculture and

Natural Resources 2012). While it was unclear whether the cold weather experienced during the nighttime activity survey may have influenced kangaroo rat or woodrat movement in the area, it is likely that the movement of San Diego pocket mouse, northern Baja deer mouse, and deer mouse known to occur in the area was affected by the cold spell experienced during the nighttime activity survey. As a result of the lack of Rodentia species identified during the March 2023 nighttime activity survey effort, it was recommended that an additional nighttime activity survey be conducted when weather conditions are more suitable for rodent detection, that additional cameras be installed throughout the southern portion of the project site to get a better understanding of all small mammal movement in the southern portion of the project site, and the more recently documented suitable SBKR burrows in the northwestern portion of the project site also be included in the survey to gain a more thorough understanding of rodent activity throughout the project site. Thus, an additional nighttime activity survey was conducted in July 2023.

The July 2023 nighttime small mammal activity survey was conducted in summer when temperatures were more conducive to capturing photos of rodent activity in the project area and included a slightly larger area to cover all areas with suitable SBKR habitat (i.e., within the northwestern portion of the project site and areas outside of project impact areas). The July 2023 nighttime activity survey effort resulted in the detection of four rodent genus including: 25 unique camera detections for deer mouse (*Peromyscus* sp.), 26 unique camera detections for kangaroo rat (*Dipodomys* sp.), 6 unique camera detections for pocket mouse (*Chaetodipus* sp.), and 16 unique camera detections for woodrat (*Neotoma* sp.). Additionally, 10 unique camera detections were confirmed to be rodents but could not be determined to genus based on the photo captures; thus, is represented as unknown rodent in the data. A total of 83 unique camera detections were captured for rodent species during the July 2023 nighttime activity survey. Kangaroo rat individuals were confirmed at six camera locations, including C-2, C-3, and C-4 within the proposed work areas and C-7, C-9, and C-12/12A outside of proposed work areas. Although there is no way to confirm the kangaroo rat to species level during the photo captures, it is assumed that these photo detections may be SBKR based on species known to occur in the area; however, Dulzura kangaroo rat (*Dipodomys simulans*) range also overlaps with the project site and survey areas. Therefore, additional trapping efforts would be required to confirm the species of kangaroo rat present on site.

Recommendations

We recommend small mammal trapping be conducted in the project area to confirm the presence of kangaroo rat species on the project site. Alternatively, Metropolitan could assume the presence of SBKR on the project site and obtain take permits under the state and federal Endangered Species Acts (ESAs). This would ensure that the project is covered for incidental take if SBKR is found on the site in the future.

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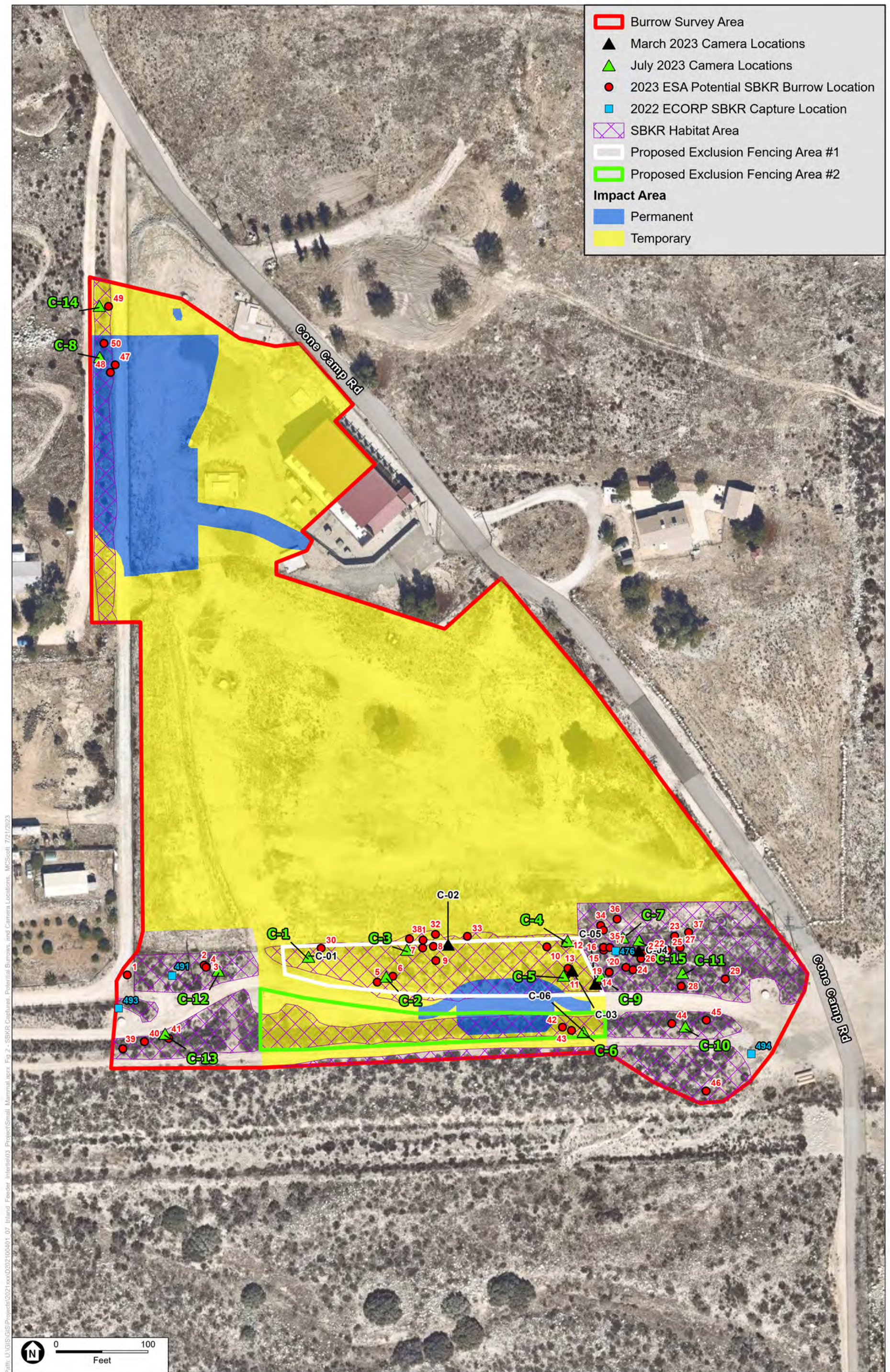


SOURCE: ESA, 2023

Inland Feeder Foothill Pump Station Intertie Phase 1 Project

Figure 1

Regional Vicinity and Project Location



SOURCE: ESA, 2023

Inland Feeder Foothill Pump Station Intertie Phase 1 Project

Figure 2
SBKR Captures, Potential Burrows, and Camera Locations

Attachment A

Representative Photographs of Wildlife Detected during the Nighttime Activity Surveys



 <p>Bushnell TROPHY CAM 35°F 1°C 03-27-2023 02:53:03</p>	 <p>Bushnell TROPHY CAM 38°F 3°C 03-27-2023 03:14:48</p>
Coyote detected at Camera 1 in March 2023.	Coyote at Camera 1 in March 2023 (Camera 2 light triggered in background).
 <p>Bushnell TROPHY CAM 33°F 0°C 03-26-2023 06:02:34</p>	 <p>Bushnell TROPHY CAM 38°F 3°C 03-27-2023 03:14:08</p>
Desert cottontail detected at Camera 2 in March 2023.	Coyote detected at Camera 2 in March 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Desert cottontail detected at Camera 5 in March 2023.



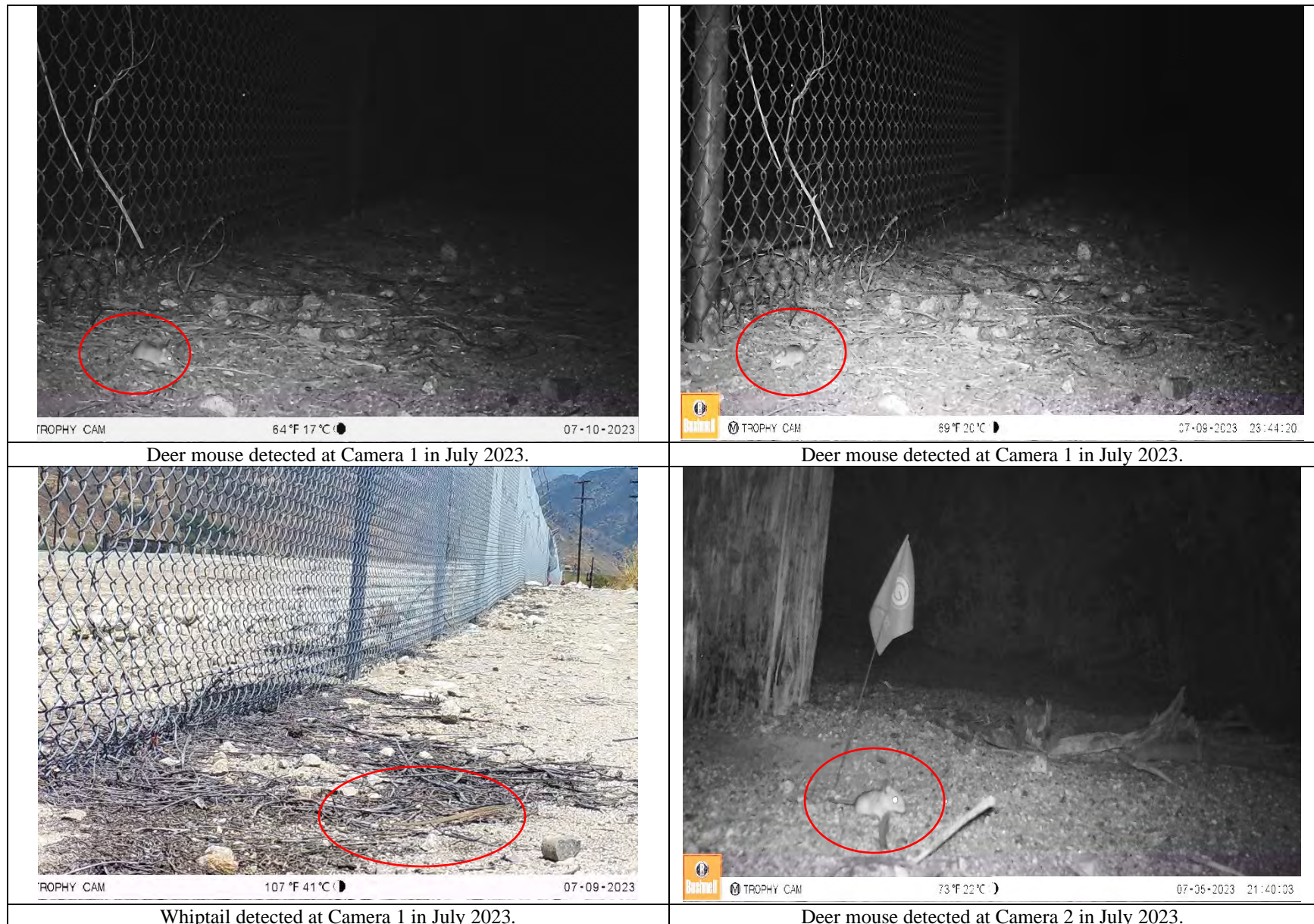
California ground squirrel detected at Camera 6 in March 2023.



Domesticated dog detected at Camera 6 in March 2023.



Desert cottontail detected at Camera 6 in March 2023.



A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey





Whiptail detected at Camera 2 in July 2023.



Desert cottontail detected at Camera 2 in July 2023.







Woodrat detected at Camera 2 in July 2023.



Kangaroo rat detected at Camera 3 in July 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey

 <p>TROPHY CAM 58°F 14°C 07-07-2023</p>	 <p>Bushnell TROPHY CAM 86°F 30°C 07-10-2023 20:26:55</p>
Desert cottontail detected at Camera 3 in July 2023.	Two desert cottontails detected at Camera 4 in July 2023.
 <p>TROPHY CAM 59°F 15°C 07-11-2023</p>	 <p>Bushnell TROPHY CAM 109°F 42°C 07-11-2023 12:37:26</p>
Kangaroo rat detected at Camera 4 in July 2023.	Whiptail detected at Camera 4 in July 2023.



Desert cottontail detected at Camera 4 in July 2023.



Deer mouse detected at Camera 5 in July 2023.




Toad detected at Camera 5.



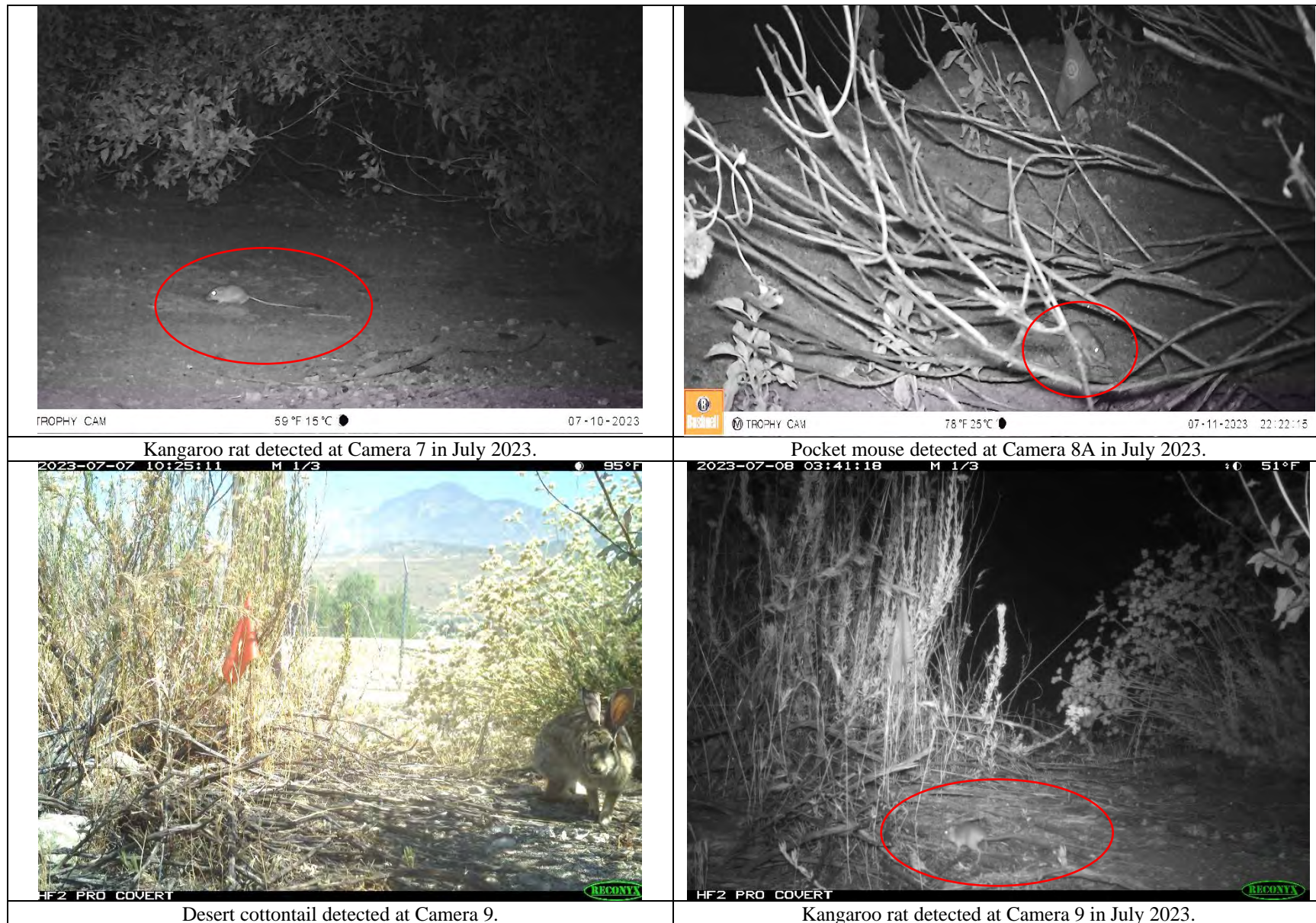
Desert cottontail detected at Camera 6 in July 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey

 <p>TROPHY CAM 78°F 25°C 07-05-2023</p>	 <p>Bushnell 70°F 21°C 07-06-2023 22:12:53</p>
Desert cottontail detected at Camera 7 in July 2023.	Deer mouse detected at Camera 7 in July 2023.
 <p>TROPHY CAM 62°F 16°C 07-07-2023</p>	 <p>Bushnell TROPHY CAM 60°F 15°C 07-07-2023 00:42:09</p>
Deer mouse detected at Camera 7 in July 2023.	Coyote detected at Camera 7 in July 2023.

 <p>TROPHY CAM 101°F 38°C 07-07-2023</p>	 <p>Bushnell TROPHY CAM 80°F 15°C 07-09-2023 01:14:18</p>
Whiptail detected at Camera 7 in July 2023.	Deer mouse detected at Camera 7 in July 2023.
 <p>TROPHY CAM 56°F 13°C 07-09-2023</p>	 <p>Bushnell TROPHY CAM 90°F 32°C 07-09-2023 10:38:27</p>
Kangaroo rat detected at Camera 7 in July 2023.	California ground squirrel detected at Camera 7 in July 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey





Woodrat detected at Camera 9 in July 2023.



Whiptail detected at Camera 10 in July 2023.



Desert cottontail detected at Camera 10 in July 2023.



Woodrat detected at Camera 10 in July 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Kangaroo rat detected at Camera 12 in July 2023.






Kangaroo rat detected at Camera 12 in July 2023.



Kangaroo rat detected at Camera 12A in July 2023.



California ground squirrel detected at Camera 12A in July 2023.

 <p>TROPHY CAM 69°F 20°C 07-13-2023</p>	 <p>Bestuned 70°F 21°C 07-13-2023 04:29:57</p>
Kangaroo rat detected at Camera 12A in July 2023.	Kangaroo rat detected at Camera 12A in July 2023.
 <p>TROPHY CAM 69°F 20°C 07-13-2023</p>	 <p>Bestuned TROPHY CAM 71°F 21°C 07-11-2023 01:47:17</p>
Foraging kangaroo rat detected at Camera 12A in July 2023.	Deer mouse detected at Camera 14 in July 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Desert cottontail detected at Camera 14 in July 2023.



Juvenile toad detected at Camera 14 in July 2023.



Deer mouse detected at Camera 14 in July 2023.



Desert cottontail detected at Camera 15 in July 2023.

Attachment B

Representative Photographs



Photo 1 (N). Photograph depicts the annual grasses and forbs habitat located northeast of the project area within the study area.



Photo 2 (N). Photograph depicts the brittle bush scrub habitat located east of the project area within the study area.



Photo 3 (E). Photograph depicts the brittle bush-California buckwheat scrub habitat present within and surrounding the constructed drainage located south of the project area within the study area.



Photo 4 (W). Photograph depicts the chamise chaparral-brittle bush scrub habitat within the southeastern portion of the study area outside of the project area.



Photo 5 (W). Photograph depicts the southern portion of the project area.



Photo 6 (N). Photograph depicts the potentially suitable SBKR habitat present along the west side of the project area.



Photo 7 (S). Photograph depicts the hairy yerba santa scrub habitat present within the southern portion of the study area outside of the project area.



Photo 8 (W). Photograph depicts Ephemeral Drainage 1 located within the northern portion of the study area outside of the project area.



Photo 9 (W). Photograph depicts Ephemeral Drainage 2 located within the southern portion of the study area outside of the project area.



Photo 10 (W). Photograph depicts Ephemeral Drainage 3 located within the southern portion of the study area outside of the project area.

Attachment C

Floral and Faunal Compendia

Scientific Name	Common Name	Comment
Flora		
Angiosperms		
Eudicots		
Anacardiaceae	Cashew Family	
<i>Rhus ovata</i>	sugar bush	
<i>Schinus molle</i> *	Peruvian pepper tree	
Asteraceae	Aster Family	
<i>Ambrosia psilostachya</i>	western ragweed	
<i>Artemisia californica</i>	California sagebrush	
<i>Baccharis salicifolia</i>	mule fat	
<i>Centaurea melitensis</i>	Maltese star thistle	
<i>Encelia farinosa</i>	brittlebush	
<i>Gutierrezia californica</i>	California matchweed	
<i>Helianthus annuus</i>	common sunflower	
<i>Heterotheca grandiflora</i>	telegraphweed	
Bigoniaceae	Bigonia Family	
<i>Jacaranda mimosifolia</i> *	black poui	
Boraginaceae	Forget-me-not Family	
<i>Amsinckia menziesii</i>	small flowered fiddleneck	
Brassicaceae	Mustard Family	
<i>Brassica nigra</i> *	black mustard	
<i>Brassica tournefortii</i> *	Saharan mustard	
<i>Hirschfeldia incana</i> *	short-podded mustard	
Cactaceae	Cactus Family	
<i>Cylindropuntia californica</i>	California cholla	
Convolvulaceae	Bindweed Family	
<i>Cuscuta californica</i>	California dodder	
Cucurbitaceae	Gourd Family	
<i>Marah macrocarpa</i>	chilicothe	
Cupressaceae	Cypress Family	
<i>Cupressus sempervirens</i> *	Italian cypress	
Fabaceae	Pea Family	
<i>Acmispon glaber</i>	deerweed	
Fagaceae	Beech, Chestnut, and Oak Family	
<i>Quercus</i> sp.	scrub oak	
Geraniaceae	Geranium Family	
<i>Erodium botrys</i> *	broad leaf filaree	

Scientific Name	Common Name	Comment
<i>Erodium</i> sp.*	filaree	
Hydrophyllaceae	Waterleaf Family	
<i>Phacelia distans</i>	common phacelia	
Malvaceae	Mallow Family	
<i>Malva parviflora</i> *	cheeseweed mallow	
Myrtaceae	Myrtle Family	
<i>Eucalyptus</i> sp.*	eucalyptus	
Namaceae	Nama Family	
<i>Eriodictylon trichocalyx</i>	hairy yerba santa	
Nyctaginaceae	Four O'Clock Family	
<i>Mirabilis laevis</i>	desert wishbone bush	
Oleaceae	Olive Family	
<i>Olea europaea</i> *	olive	
Polygonaceae	Buckwheat Family	
<i>Eriogonum fasciculatum</i>	California buckwheat	
<i>Eriogonum gracile</i>	slender buckwheat	
Rosaceae	Rose Family	
<i>Adenostoma fasciculatum</i>	chamise	
Rutaceae	Citrus Family	
<i>Citrus x sinensis</i>	orange	
Salicaceae	Willow Family	
<i>Populus fremontii</i>	Fremont cottonwood	
<i>Salix exigua</i>	sandbar willow	
Simaroubaceae	Quassia Family	
<i>Ailanthus altissima</i> *	tree of heaven	
Solanaceae	Nightshade Family	
<i>Datura wrightii</i>	sacred datura	
<i>Nicotiana glauca</i> *	tree tobacco	
<i>Solanum xanti</i> *	purple nightshade	
Tamaricaceae	Tamarisk Family	
<i>Tamarix</i> sp.*	tamarisk	

Gymnosperms

Pinaceae	Pine Family
<i>Cedrus deodara</i> *	deodar cedar

Monocots

Agavaceae	Agave Family
<i>Hesperoyucca whipplei</i>	chaparral yucca

Scientific Name	Common Name	Comment
Arecaceae	Palm Family	
<i>Syagrus romanzoffiana</i> *	queen palm	
Poaceae	Grass Family	
<i>Arundo donax</i> *	giant reed	
<i>Avena</i> sp.*	oat	
<i>Bromus</i> sp.*	brome	
<i>Bromus diandrus</i> *	ripgut brome	
<i>Pennisetum setaceum</i> *	fountaingrass	

Ferns

Pteridaceae	Brake Family	
<i>Pellaea andromedifolia</i>	coffee fern	

Scientific Name	Common Name	Comment
Fauna		
Birds		
Phasianidae	Pheasants	
<i>Pavo cristatus*</i>	Indian peafowl	
Columbidae	Pigeons and Doves	
<i>Streptopelia decaocto*</i>	Eurasian collared dove	
<i>Zenaida macroura</i>	mourning dove	
Trochillidae	Hummingbirds	
<i>Calypte anna</i>	Anna's hummingbird	
Corvidae	Jays and Crows	
<i>Corvus corax</i>	common raven	
Fringillidae	Finches	
<i>Haemorhous mexicanus</i>	House finch	
<i>Sturnella neglecta</i>	western meadowlark	
Aegithalidae	Bushtits	
<i>Psaltiriparus minimus</i>	bushtit	
Troglodytidae	Wrens	
<i>Thryomanes bewickii</i>	Bewick's wren	
Parulidae	New World Warblers	
<i>Setophaga coronata</i>	yellow-rumped warbler	
Tyrannidae	Tyrant Flycatchers	
<i>Sayornis nigricans</i>	black phoebe	
<i>Sayornis saya</i>	Say's phoebe	
Poliophtidae	Gnatcatchers and Gnatwrens	
<i>Poliophtila caerulea</i>	blue-gray gnatcatcher	
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	Federally threatened; CDFW species of special concern
Passerellidae	New World Sparrows	
<i>Melozone crissalis</i>	California towhee	
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	

Attachment D

CNDDDB and CNPS Results

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE **RareFind**

Query Summary:

Quad **IS** (Redlands (3411712) **OR** San Bernardino North (3411723) **OR** Harrison Mtn. (3411722) **OR** Keller Peak (3411721) **OR** Yucaipa (3411711) **OR** El Casco (3311781) **OR** Sunnymead (3311782) **OR** Riverside East (3311783) **OR** San Bernardino South (3411713))

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CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	118	3	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	960	9	None	Threatened	G1G2	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Birds	ABPBX91091	235	18	None	None	G5T3	S4	null	CDFW_WL-Watch List	Chaparral, Coastal scrub
Allium howellii var. clokeyi	Mt. Pinos onion	Monocots	PMLIL02161	25	1	None	None	G4T2	S2	1B.3	SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Great Basin scrub, Meadow & seep, Pinon & juniper woodlands
Allium marvinii	Yucaipa onion	Monocots	PMLIL02330	47	2	None	None	G1	S1	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral
Anniella stebbinsi	Southern California legless lizard	Reptiles	ARACC01060	427	34	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Coastal dunes, Coastal scrub
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	1	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	332	1	None	None	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, CDFW_WL-Watch List, IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley &

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Arenaria paludicola	marsh sandwort	Dicots	PDCAR040L0	19	1	Endangered	Endangered	G1	S1	1B.1	SB_SBBG-Santa Barbara Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland	
Arizona elegans occidentalis	California glossy snake	Reptiles	ARADB01017	260	11	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern	null	
Artemisiospiza belli belli	Bell's sparrow	Birds	ABPBX97021	61	2	None	None	G5T2T3	S3	null	CDFW_WL-Watch List	Chaparral, Coastal scrub	
Aspidoscelis hyperythra	orange-throated whiptail	Reptiles	ARACJ02060	369	24	None	None	G5	S2S3	null	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub	
Aspidoscelis tigris stejnegeri	coastal whiptail	Reptiles	ARACJ02143	148	15	None	None	G5T5	S3	null	CDFW_SSC-Species of Special Concern	null	
Astragalus hornii var. hornii	Horn's milk-vetch	Dicots	PDFAB0F421	28	1	None	None	GUT1	S1	1B.1	BLM_S-Sensitive	Alkali playa, Meadow & seep, Wetland	
Athene cunicularia	burrowing owl	Birds	ABNSB10010	2011	13	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland	
Atriplex coronata var. notator	San Jacinto Valley crowscale	Dicots	PDCHE040C2	16	5	Endangered	None	G4T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland	
Atriplex serenana var. davidsonii	Davidson's saltscale	Dicots	PDCHE041T1	26	1	None	None	G5T1	S1	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal scrub	
Batrachoseps gabrieli	San Gabriel slender salamander	Amphibians	AAAAD02110	8	1	None	None	G2G3	S2S3	null	IUCN_DD-Data Deficient, USFS_S-Sensitive	Talus slope	
Berberis nevinii	Nevin's barberry	Dicots	PDBER060A0	32	5	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub	
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	437	16	None	Candidate Endangered	G2	S2	null	IUCN_EN-Endangered	null	
Bombus morrisoni	Morrison bumble bee	Insects	IIHYM24460	86	1	None	None	G3	S1S2	null	IUCN_VU-Vulnerable	null	
Bombus pensylvanicus	American bumble bee	Insects	IIHYM24260	304	2	None	None	G3G4	S2	null	IUCN_VU-Vulnerable	Coastal prairie, Great Basin grassland, Valley & foothill grassland	
Brodiaea filifolia	thread-leaved brodiaea	Monocots	PMLIL0C050	141	2	Threatened	Endangered	G2	S2	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland	
Buteo regalis	ferruginous hawk	Birds	ABNKC19120	107	1	None	None	G4	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Great Basin grassland, Great Basin scrub, Pinon & juniper woodlands, Valley & foothill grassland	
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2561	2	None	Threatened	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland	
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	Monocots	PMLIL0D122	111	4	None	None	G3T2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara	Chaparral, Lower montane coniferous forest, Meadow & seep	

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											USFS_S-Sensitive	
Calochortus plummerae	Plummer's mariposa-lily	Monocots	PMLIL0D150	230	24	None	None	G4	S4	4.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley & foothill grassland
Canyon Live Oak Ravine Forest	Canyon Live Oak Ravine Forest	Riparian	CTT61350CA	50	1	None	None	G3	S3.3	null	null	Riparian forest
Carex comosa	bristly sedge	Monocots	PMCYP032Y0	31	1	None	None	G5	S2	2B.1	IUCN_LC-Least Concern	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley & foothill grassland, Wetland
Castilleja cinerea	ash-gray paintbrush	Dicots	PDSCR0D0H0	53	1	Threatened	None	G1G2	S1S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Meadow & seep, Mojavean desert scrub, Pavement plain, Pinon & juniper woodlands, Upper montane coniferous forest
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	Dicots	PDSCR0D410	46	7	None	None	G2?	S2?	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Meadow & seep, Pavement plain, Riparian woodland, Upper montane coniferous forest, Wetland
Catostomus santaanae	Santa Ana sucker	Fish	AFCJC02190	28	3	Threatened	None	G1	S1	null	AFS_TH-Threatened, IUCN_EN-Endangered	Aquatic, South coast flowing waters
Centromadia pungens ssp. laevis	smooth tarplant	Dicots	PDAST4R0R4	137	17	None	None	G3G4T2	S2	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Alkali playa, Chenopod scrub, Meadow & seep, Riparian woodland, Valley & foothill grassland, Wetland
Ceratochrysis longimala	Desert cuckoo wasp	Insects	IIHYM71040	2	1	None	None	G1	S1	null	null	null
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	Mammals	AMAFD05031	101	25	None	None	G5T3T4	S3S4	null	null	Chaparral, Coastal scrub
Charina umbratica	southern rubber boa	Reptiles	ARADA01011	94	22	None	Threatened	G2G3	S2	null	IUCN_VU-Vulnerable, USFS_S-Sensitive	Meadow & seep, Riparian forest, Riparian woodland, Upper montane coniferous forest, Wetland
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Dicots	PDSCR0J0C2	26	1	Endangered	Endangered	G4?T1	S1	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_SBBG-Santa Barbara Botanic Garden	Coastal dunes, Marsh & swamp, Salt marsh, Wetland
Chorizanthe parryi var. parryi	Parry's spineflower	Dicots	PDPGN040J2	150	29	None	None	G3T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Dicots	PDPGN040Z1	59	1	None	None	G4T3	S3	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture, USFS_S-Sensitive	Coastal scrub, Mojavean desert scrub, Pinon & juniper woodlands

Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	165	3	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, USFS_S-Sensitive	Riparian forest
Coleonyx variegatus abbotti	San Diego banded gecko	Reptiles	ARACD01031	8	1	None	None	G5T5	S1S2	null	CDFW_SSC-Species of Special Concern	Chaparral, Coastal scrub
Crotalus ruber	red-diamond rattlesnake	Reptiles	ARADE02090	192	9	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Mojavean desert scrub, Sonoran desert scrub
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Dicots	PDCUS01111	6	1	None	None	G5T4?	SH	2B.2	null	Marsh & swamp, Wetland
Diadophis punctatus modestus	San Bernardino ringneck snake	Reptiles	ARADB10015	14	3	None	None	G5T2T3	S2?	null	USFS_S-Sensitive	null
Diplectrona californica	California diplectronan caddisfly	Insects	IITRI23010	2	1	None	None	G1G2	S1	null	null	Aquatic
Dipodomys merriami parvus	San Bernardino kangaroo rat	Mammals	AMAFD03143	81	28	Endangered	Candidate Endangered	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Dipodomys stephensi	Stephens' kangaroo rat	Mammals	AMAFD03100	226	35	Threatened	Threatened	G2	S3	null	IUCN_VU-Vulnerable	Coastal scrub, Valley & foothill grassland
Dodecahema leptoceras	slender-horned spineflower	Dicots	PDPGN0V010	42	9	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	184	3	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Empidonax traillii eximius	southwestern willow flycatcher	Birds	ABPAE33043	70	5	Endangered	Endangered	G5T2	S3	null	null	Riparian woodland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1559	1	Proposed Threatened	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Eremophila alpestris actia	California horned lark	Birds	ABPAT02011	94	4	None	None	G5T4Q	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marine intertidal & splash zone communities, Meadow & seep
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Dicots	PDPLM03035	31	25	Endangered	Endangered	G4T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Coastal scrub
Euchloe hyantis andrewsi	Andrew's marble butterfly	Insects	IILEPA5032	6	4	None	None	G4G5T1	S2	null	null	Lower montane coniferous forest
Eugnosta busckana	Busck's gallmoth	Insects	IILEM2X090	15	3	None	None	G1G3	S2S3	null	null	Coastal dunes, Coastal scrub
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	6	None	None	G4G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Euphydryas editha quino	quino checkerspot butterfly	Insects	IILEPK405L	186	2	Endangered	None	G4G5T1T2	S1S2	null	null	Chaparral, Coastal scrub

Falco columbarius	merlin	Birds	ABNKD06030	37	2	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Estuary, Great Basin grassland, Valley & foothill grassland
Fimbristylis thermalis	hot springs fimbriatilis	Monocots	PMCYP0B0N0	19	1	None	None	G4	S1S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Meadow & seep, Wetland
Galium californicum ssp. primum	Alvin Meadow bedstraw	Dicots	PDRUB0N0E6	12	1	None	None	G5T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Lower montane coniferous forest
Gila orcuttii	arroyo chub	Fish	AFCJB13120	49	2	None	None	G2	S2	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, South coast flowing waters
Glaucomys oregonensis californicus	San Bernardino flying squirrel	Mammals	AMAFB09021	12	5	None	None	G5T1T2	S1S2	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Broadleaved upland forest, Lower montane coniferous forest
Haliaeetus leucocephalus	bald eagle	Birds	ABNKC10010	333	3	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDFW_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive	Lower montane coniferous forest, Oldgrowth
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Dicots	PDAST4N102	7	1	None	None	G5TX	SX	1A	null	Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Heuchera parishii	Parish's alumroot	Dicots	PDSAX0E1F0	70	5	None	None	G3	S3	1B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Alpine boulder & rock field, Limestone, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest
Horkelia cuneata var. puberula	mesa horkelia	Dicots	PDR0S0W045	103	1	None	None	G4T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub
Icteria virens	yellow-breasted chat	Birds	ABPBX24010	101	3	None	None	G5	S4	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Imperata brevifolia	California satintail	Monocots	PMPOA3D020	32	4	None	None	G3	S3	2B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Chaparral, Coastal scrub, Meadow & seep, Mojavean desert scrub, Riparian scrub, Wetland
Ivesia argyrocoma var. argyrocoma	silver-haired ivesia	Dicots	PDR0S0X021	41	1	None	None	G2T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Meadow & seep, Pavement plain, Upper montane coniferous forest
Lanius ludovicianus	loggerhead shrike	Birds	ABPBR01030	110	3	None	None	G4	S4	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Broadleaved upland forest, Desert wash, Joshua tree woodland, Mojavean desert scrub, Pinon & juniper woodlands, Riparian woodland, Sonoran desert scrub
Lasiurus xanthinus	western yellow bat	Mammals	AMACC05070	58	8	None	None	G4G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Desert wash

Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Dicots	PDAST5L0A1	111	7	None	None	G4T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Alkali playa, Marsh & swamp, Salt marsh, Vernal pool, Wetland
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	304	2	None	Threatened	G3T1	S2	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_EN-Endangered	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Dicots	PDBRA1M114	142	9	None	None	G5T3	S3	4.3	null	Chaparral, Coastal scrub
Leptonycteris yerbabuenae	lesser long-nosed bat	Mammals	AMACB03030	2	1	Delisted	None	G3	S1	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Mojavean desert scrub, Sonoran desert scrub, Upper Sonoran scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	Mammals	AMAEB03051	103	12	None	None	G5T3T4	S3S4	null	null	Coastal scrub
Lilium parryi	lemon lily	Monocots	PMLIL1A0J0	160	16	None	None	G3	S3	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, USFS_S-Sensitive	Lower montane coniferous forest, Meadow & seep, Riparian forest, Upper montane coniferous forest, Wetland
Lycium parishii	Parish's desert-thorn	Dicots	PDSOL0G0D0	21	1	None	None	G4	S1	2B.3	SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Coastal scrub, Sonoran desert scrub
Malacothamnus parishii	Parish's bush-mallow	Dicots	PDMAL0Q0C0	1	1	None	None	GXQ	SX	1A	null	Chaparral, Coastal scrub
Monardella macrantha ssp. hallii	Hall's monardella	Dicots	PDLAM180E1	41	5	None	None	G5T3	S3	1B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley & foothill grassland
Monardella pringlei	Pringle's monardella	Dicots	PDLAM180J0	2	1	None	None	GX	SX	1A	null	Coastal scrub
Nama stenocarpa	mud nama	Dicots	PDHYD0A0H0	22	1	None	None	G4G5	S1S2	2B.2	null	Marsh & swamp, Wetland
Nasturtium gambelii	Gambel's water cress	Dicots	PDBRA270V0	13	1	Endangered	Threatened	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Brackish marsh, Freshwater marsh, Marsh & swamp, Wetland
Neolarra alba	white cuckoo bee	Insects	IIHYM81010	8	2	None	None	GH	SH	null	null	null
Neotamias speciosus speciosus	lodgepole chipmunk	Mammals	AMAFB02172	24	3	None	None	G4T3T4	S2	null	null	Chaparral, Upper montane coniferous forest
Neotoma lepida intermedia	San Diego desert woodrat	Mammals	AMAFF08041	132	5	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	Mammals	AMACD04010	90	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Joshua tree woodland, Pinon & juniper woodlands, Riparian scrub, Sonoran desert scrub
Oncorhynchus mykiss irideus pop. 10	steelhead - southern California DPS	Fish	AFCHA0209J	19	1	Endangered	Candidate Endangered	G5T1Q	S1	null	AFS_EN-Endangered	Aquatic, South coast flowing waters
Onychomys torridus ramona	southern grasshopper mouse	Mammals	AMAFF06022	28	3	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern	Chenopod scrub
Packera bernardina	San Bernardino ragwort	Dicots	PDAST8H0E0	35	1	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Meadow & seep, Pavement plain, Upper montane coniferous forest, Wetland

Pelazoneuron puberulum var. sonorensis	Sonoran maiden fern	Ferns	PPTHE05192	27	1	None	None	G5T3	S2	2B.2	USFS_S-Sensitive	Meadow & seep, Wetland
Perideridia parishii ssp. parishii	Parish's yampah	Dicots	PDAP11N0C2	37	8	None	None	G4T3T4	S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Lower montane coniferous forest, Meadow & seep, Upper montane coniferous forest
Perognathus alticola alticola	white-eared pocket mouse	Mammals	AMAFD01081	3	3	None	None	G2TH	SH	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Lower montane coniferous forest, Mojavean desert scrub, Pinon & juniper woodlands
Perognathus longimembris brevinasus	Los Angeles pocket mouse	Mammals	AMAFD01041	70	18	None	None	G5T2	S1S2	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	824	23	None	None	G4	S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Plegadis chihi	white-faced ibis	Birds	ABNGE02020	20	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marsh & swamp, Wetland
Polioptila californica californica	coastal California gnatcatcher	Birds	ABPB08081	1087	14	Threatened	None	G4G5T3Q	S2	null	CDFW_SSC-Species of Special Concern	Coastal bluff scrub, Coastal scrub
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1764	1	Threatened	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Rana muscosa	southern mountain yellow-legged frog	Amphibians	AAABH01330	186	5	Endangered	Endangered	G1	S2	null	CDFW_WL-Watch List, IUCN_EN-Endangered, USFS_S-Sensitive	Aquatic
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	Insects	IIDIP05021	36	20	Endangered	None	G1T1	S1	null	null	Interior dunes
Rhinichthys osculus ssp. 8	Santa Ana speckled dace	Fish	AFCJB3705K	13	3	None	None	G5T1	S1	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Aquatic, South coast flowing waters
Ribes divaricatum var. parishii	Parish's gooseberry	Dicots	PDGRO020F3	5	1	None	None	G5TX	SX	1A	null	Riparian woodland
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	Scrub	CTT32720CA	30	4	None	None	G1	S1.1	null	null	Coastal scrub
Salvadora hexalepis virgulata	coast patch-nosed snake	Reptiles	ARADB30033	34	2	None	None	G5T4	S3	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Schoenus nigricans	black bog-rush	Monocots	PMCYP0P010	13	1	None	None	G4	S2	2B.2	IUCN_LC-Least Concern, USFS_S-Sensitive	Marsh & swamp, Wetland

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Senecio aphanactis	chaparral ragwort	Dicots	PDAST8H060	98	2	None	None	G3	S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Chaparral, Cismontane woodland, Coastal scrub
Setophaga petechia	yellow warbler	Birds	ABPBX03010	78	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	Dicots	PDMAL110A3	24	1	None	Rare	G3T1	S1	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest
Sidalcea malviflora ssp. dolosa	Bear Valley checkerbloom	Dicots	PDMAL110FH	18	1	None	None	G5T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Lower montane coniferous forest, Meadow & seep, Riparian woodland, Upper montane coniferous forest, Wetland
Sidalcea neomexicana	salt spring checkerbloom	Dicots	PDMAL110J0	30	4	None	None	G4	S2	2B.2	USFS_S-Sensitive	Alkali playa, Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Wetland
Sidalcea pedata	bird-foot checkerbloom	Dicots	PDMAL110L0	24	1	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Meadow & seep, Pavement plain, Wetland
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	CTT61310CA	246	2	None	None	G4	S4	null	null	Riparian forest
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	CTT61330CA	111	3	None	None	G3	S3.2	null	null	Riparian forest
Southern Mixed Riparian Forest	Southern Mixed Riparian Forest	Riparian	CTT61340CA	14	1	None	None	G2	S2.1	null	null	Riparian forest
Southern Riparian Forest	Southern Riparian Forest	Riparian	CTT61300CA	20	1	None	None	G4	S4	null	null	Riparian forest
Southern Riparian Scrub	Southern Riparian Scrub	Riparian	CTT63300CA	56	2	None	None	G3	S3.2	null	null	Riparian scrub
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	CTT62400CA	230	16	None	None	G4	S4	null	null	Riparian woodland
Southern Willow Scrub	Southern Willow Scrub	Riparian	CTT63320CA	45	1	None	None	G3	S2.1	null	null	Riparian scrub
Spea hammondi	western spadefoot	Amphibians	AAABF02020	1444	38	Proposed Threatened	None	G2G3	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Sphenopholis obtusata	prairie wedge grass	Monocots	PMPOA5T030	19	2	None	None	G5	S2	2B.2	null	Cismontane woodland, Meadow & seep, Wetland
Spinus lawrencei	Lawrence's goldfinch	Birds	ABPBY06100	4	1	None	None	G3G4	S4	null	IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest, Chaparral, Pinon & juniper woodlands, Riparian woodland

Streptanthus bernardinus	Laguna Mountains jewelflower	Dicots	PDBRA2G060	22	7	None	None	G3G4	S3S4	4.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest
Streptanthus campestris	southern jewelflower	Dicots	PDBRA2G0B0	73	4	None	None	G3	S3	1B.3	BLM_S-Sensitive, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, USFS_S-Sensitive	Chaparral, Lower montane coniferous forest, Pinon & juniper woodlands
Streptocephalus woottoni	Riverside fairy shrimp	Crustaceans	ICBRA07010	83	2	Endangered	None	G1G2	S2	null	IUCN_EN-Endangered	Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Symphyotrichum defoliatum	San Bernardino aster	Dicots	PDASTE80C0	102	3	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, USFS_S-Sensitive	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Valley & foothill grassland
Taxidea taxus	American badger	Mammals	AMAJF04010	645	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, lone formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis hammondi	two-striped gartersnake	Reptiles	ARADB36160	184	10	None	None	G4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-	Marsh & swamp, Riparian scrub, Riparian

											Least Concern, USFS_S-Sensitive	Woodland, Wetland
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Dicots	PDAST9F031	12	1	None	None	G4T3	S1	2B.1	null	Marsh & swamp, Meadow & seep, Riparian forest, Vernal pool, Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	505	29	Endangered	Endangered	G5T2	S3	null	null	Riparian forest, Riparian scrub, Riparian woodland



CALIFORNIA
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Search Results

87 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3411712:3411723:3411722:3411721:3411711:3311781:3311782:3311783:3411713]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	PLANT RANK	CA RARE	CA ENDEMIC	DATE ADDED	PHOTO
<i>Abronia villosa</i> <i>var. aurita</i>	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	None	None	G5T2?	S2	1B.1			2001-01-01	 © 2011 Aaron E. Sims
<i>Acanthoscyphus parishii</i> <i>var. parishii</i> <i>parishii</i>	Parish's oxythea	Polygonaceae	annual herb	Jun-Sep	None	None	G4? T3T4	S3S4	4.2	Yes		2007-04-05	 © 2014 Keir Morse
<i>Allium howellii</i> <i>var. clokeyi</i>	Mt. Pinos onion	Alliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4T2	S2	1B.3	Yes		1974-01-01	 © 2016 Keir Morse
<i>Allium marvinii</i>	Yucaipa onion	Alliaceae	perennial bulbiferous herb	Apr-May	None	None	G1	S1	1B.2	Yes		2001-01-01	 © 2013 Keir Morse
<i>Androsace elongata</i> <i>ssp. acuta</i>	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2			1994-01-01	 © 2008 Aaron Schusteff
<i>Arenaria paludicola</i>	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	FE	CE	G1	S1	1B.1			1984-01-01	No Photo Available
<i>Artemisia palmeri</i>	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2			1974-01-01	No Photo Available
<i>Asplenium vespertinum</i>	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2			1974-01-01	No Photo Available



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<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974-01-01	No Photo Available
<i>Monardella pringlei</i>	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
<i>Muhlenbergia californica</i>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994-01-01	No Photo Available
<i>Muilla coronata</i>	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar-Apr(May)	None	None	G3	S3	4.2		1988-01-01	No Photo Available
<i>Nama stenocarpa</i>	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994-01-01	No Photo Available
<i>Nasturtium gambelii</i>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980-01-01	No Photo Available
<i>Packera bernardina</i>	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
<i>Pelazoneuron puberulum</i> var. <i>sonorense</i>	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994-01-01	No Photo Available
<i>Perideridia parishii</i> ssp. <i>parishii</i>	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4S2		2B.2		1974-01-01	No Photo Available
<i>Phacelia mohavensis</i>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994-01-01	No Photo Available
<i>Phacelia stellaris</i>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994-01-01	No Photo Available
<i>Piperia leptopetala</i>	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001-01-01	No Photo Available
<i>Quercus engelmannii</i>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988-01-01	No Photo Available
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988-01-01	No Photo Available
<i>Romneya coulteri</i>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		1974-01-01	No Photo Available
<i>Rupertia rigida</i>	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974-01-01	No Photo Available








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<u><i>Caulanthus simulans</i></u>	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	None	None	G4	S4	4.2	Yes	1974-01-01	No Photo Available
<u><i>Centromadia pungens</i> ssp. <i>laevis</i></u>	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.1	Yes	1994-01-01	No Photo Available
<u><i>Chloropyron maritimum</i> ssp. <i>maritimum</i></u>	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	FE	CE	G4?T1	S1	1B.2		1974-01-01	No Photo Available
<u><i>Chorizanthe leptotheca</i></u>	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2		1994-01-01	No Photo Available
<u><i>Chorizanthe parryi</i> var. <i>parryi</i></u>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994-01-01	 © 2012 Keir Morse
<u><i>Chorizanthe xanti</i> var. <i>leucotheca</i></u>	white-bracted spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G4T3	S3	1B.2	Yes	1994-01-01	No Photo Available
<u><i>Convolvulus simulans</i></u>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994-01-01	No Photo Available
<u><i>Cuscuta obtusiflora</i> var. <i>glandulosa</i></u>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011-08-24	No Photo Available
<u><i>Deinandra paniculata</i></u>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2		2001-01-01	No Photo Available
<u><i>Diplacus clevelandii</i></u>	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2		1980-01-01	 © 2020 W. Juergen Schrenk
<u><i>Dodecahema leptoceras</i></u>	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
<u><i>Eriastrum densifolium</i> ssp. <i>sanctorum</i></u>	Santa Ana River woollystar	Polemoniaceae	perennial herb	Apr-Sep	FE	CE	G4T1	S1	1B.1	Yes	1980-01-01	No Photo Available
<u><i>Eriophyllum lanatum</i> var. <i>obovatum</i></u>	southern Sierra woolly sunflower	Asteraceae	perennial herb	Jun-Jul	None	None	G5T4	S4	4.3	Yes	1974-01-01	No Photo Available
<u><i>Erythranthe exigua</i></u>	San Bernardino Mountains monkeyflower	Phrymaceae	annual herb	May-Jul	None	None	G2	S2	1B.2		1974-01-01	No Photo Available

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<u><i>Fimbristylis thermalis</i></u>	hot springs fimbristylis	Cyperaceae	perennial rhizomatous herb	Jul-Sep	None	None	G4	S1S2	2B.2		1980- 01-01	No Photo Available
<u><i>Frasera neglecta</i></u>	pine green- gentian	Gentianaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1980- 01-01	No Photo Available
<u><i>Fritillaria pinetorum</i></u>	pine fritillary	Liliaceae	perennial bulbiferous herb	May- Jul(Sep)	None	None	G4	S4	4.3	Yes	2001- 01-01	 © 2008 Steve Matson
<u><i>Galium californicum</i></u> <u><i>ssp. primum</i></u>	Alvin Meadow bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G5T2	S2	1B.2	Yes	1974- 01-01	 © 2013 Keir Morse
<u><i>Galium johnstonii</i></u>	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974- 01-01	 © 2015 Keir Morse
<u><i>Helianthus nuttallii</i></u> <u><i>ssp. parishii</i></u>	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	Yes	1974- 01-01	No Photo Available
<u><i>Heuchera caespitosa</i></u>	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	Yes	1974- 01-01	 © 2015 Keir Morse
<u><i>Heuchera parishii</i></u>	Parish's alumroot	Saxifragaceae	perennial rhizomatous herb	Jun-Aug	None	None	G3	S3	1B.3	Yes	1974- 01-01	 © 2015 Keir Morse
<u><i>Hordeum intercedens</i></u>	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994- 01-01	No Photo Available
<u><i>Horkelia cuneata</i></u> <u><i>var. puberula</i></u>	mesa horkelia	Rosaceae	perennial herb	Feb- Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001- 01-01	 © 2008 Tony Morosco
<u><i>Hulsea vestita</i></u> <u><i>ssp. parryi</i></u>	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	None	None	G5T4	S4	4.3	Yes	1994- 01-01	 © 2015 Keir Morse

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<u><i>Imperata brevifolia</i></u>	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
<u><i>Ivesia argyrocoma</i></u> var. <u><i>ivesia argyrocoma</i></u>	silver-haired ivesia	Rosaceae	perennial herb	Jun-Aug	None	None	G2T2	S2	1B.2	Yes	1974-01-01	 © 2015 Keir Morse
<u><i>Juglans californica</i></u>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2020 Zoya Akulova
<u><i>Juncus duranii</i></u>	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2017 Keir Morse
<u><i>Lasthenia glabrata</i></u> ssp. <u><i>coulteri</i></u>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
<u><i>Lepidium virginicum</i></u> var. <u><i>robinsonii</i></u>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994-01-01	 © 2015 Keir Morse
<u><i>Lilium humboldtii</i></u> ssp. <u><i>ocellatum</i></u>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980-01-01	 © 2008 Thomas Stoughton
<u><i>Lilium parryi</i></u>	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	None	None	G3	S3	1B.2		1974-01-01	 © 2009 Thomas Stoughton
<u><i>Lycium parishii</i></u>	Parish's desert-thorn	Solanaceae	perennial shrub	Mar-Apr	None	None	G4	S1	2B.3		1980-01-01	No Photo Available
<u><i>Malacothamnus parishii</i></u>	Parish's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jul	None	None	GXQ	SX	1A	Yes	1974-01-01	 © 2021 Keir Morse


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<u><i>Monardella</i></u> <u><i>macrantha</i> ssp.</u> <u><i>hallii</i></u>	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974- 01-01	No Photo Available
<u><i>Monardella</i></u> <u><i>pringlei</i></u>	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974- 01-01	No Photo Available
<u><i>Muhlenbergia</i></u> <u><i>californica</i></u>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994- 01-01	No Photo Available
<u><i>Muilla coronata</i></u>	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar- Apr(May)	None	None	G3	S3	4.2		1988- 01-01	No Photo Available
<u><i>Nama</i></u> <u><i>stenocarpa</i></u>	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994- 01-01	No Photo Available
<u><i>Nasturtium</i></u> <u><i>gambelii</i></u>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980- 01-01	No Photo Available
<u><i>Packera</i></u> <u><i>bernardina</i></u>	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974- 01-01	No Photo Available
<u><i>Pelazoneuron</i></u> <u><i>puberulum</i> var.</u> <u><i>sonorense</i></u>	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994- 01-01	No Photo Available
<u><i>Perideridia</i></u> <u><i>parishii</i> ssp.</u> <u><i>parishii</i></u>	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4S2		2B.2		1974- 01-01	No Photo Available
<u><i>Phacelia</i></u> <u><i>mohavensis</i></u>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994- 01-01	No Photo Available
<u><i>Phacelia</i></u> <u><i>stellaris</i></u>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994- 01-01	No Photo Available
<u><i>Piperia</i></u> <u><i>leptopetala</i></u>	narrow- petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001- 01-01	No Photo Available
<u><i>Quercus</i></u> <u><i>engelmannii</i></u>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988- 01-01	No Photo Available
<u><i>Ribes</i></u> <u><i>divaricatum</i> var.</u> <u><i>parishii</i></u>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988- 01-01	No Photo Available
<u><i>Romneya</i></u> <u><i>coulteri</i></u>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar- Jul(Aug)	None	None	G4	S4	4.2		1974- 01-01	No Photo Available
<u><i>Rupertia rigida</i></u>	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974- 01-01	No Photo Available

1/2/24, 2:05 PM

CNPS Rare Plant Inventory | Search Results

<u><i>Schoenus nigricans</i></u>	black bog-rush	Cyperaceae	perennial herb	Aug-Sep	None	None	G4	S2	2B.2		2001-01-01	No Photo Available
<u><i>Senecio aphanactis</i></u>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
<u><i>Senecio astephanus</i></u>	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	None	None	G3	S3	4.3	Yes	2006-12-21	No Photo Available
<u><i>Sidalcea hickmanii</i> ssp. <i>parishii</i></u>	Parish's checkerbloom	Malvaceae	perennial herb	(May)Jun-Aug	None	CR	G3T1	S1	1B.2	Yes	1974-01-01	No Photo Available
<u><i>Sidalcea malviflora</i> ssp. <i>dolosa</i></u>	Bear Valley checkerbloom	Malvaceae	perennial herb	May-Aug	None	None	G5T2	S2	1B.2	Yes	2012-06-13	No Photo Available
<u><i>Sidalcea neomexicana</i></u>	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
<u><i>Sidalcea pedata</i></u>	bird-foot checkerbloom	Malvaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Sidotheca caryophylloides</i></u>	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	None	None	G4	S4	4.3	Yes	1980-01-01	 ©2021 Keir Morse
<u><i>Sphenopholis obtusata</i></u>	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
<u><i>Streptanthus bernardinus</i></u>	Laguna Mountains jewelflower	Brassicaceae	perennial herb	May-Aug	None	None	G3G4	S3S4	4.3	Yes	1980-01-01	No Photo Available
<u><i>Streptanthus campestris</i></u>	southern jewelflower	Brassicaceae	perennial herb	(Apr)May-Jul	None	None	G3	S3	1B.3		1994-01-01	No Photo Available
<u><i>Symphyotrichum defoliatum</i></u>	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes	2004-01-01	No Photo Available
<u><i>Trichocoronis wrightii</i> var. <i>wrightii</i></u>	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1		1988-01-01	No Photo Available
<u><i>Trichostema micranthum</i></u>	small-flowered bluecurls	Lamiaceae	annual herb	Jun-Sep	None	None	G4	S3	4.3		1974-01-01	No Photo Available

Showing 1 to 87 of 87 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website: <https://www.rareplants.cnps.org> [accessed 2 January 2024].

Attachment E

Exclusionary Fence Design

AMX48

Temporary & Permanent Wildlife Fencing

Specification & Installation Guides

LAST UPDATED MAY 2022

SUITABLE SPECIES

- TURTLES (Large)
- LIZARDS (Large)
- FROGS
- SMALL MAMMALS

Contents

Basic Material Size & Features pg.1

Step by Step Installation pg.3

Fixing & Fastening pg.6

Free-standing pg.10

Attached pg.14

Specialised pg.24

Tender Document Descriptions pg.30

Animex®

●

AMX 48

Basic Material Size & Features

The length of each **AMX 48** section will vary depending on the material choice.

AMX 48 dimensions based on Animex’s optimal fencing materials.

SCORED PLASTIC - PERFORATED & NON-PERFORATED

Temporary Applications (AMX-T)

Thickness: 0.04in / 1mm
Length: 60ft / 18.2m
Weight: 50lbs / 23kg

Semi-Permanent Applications (AMX-SP)

Thickness: 0.08in / 2mm
Length: 30ft / 9m
Weight: 48lbs / 23kg

PREFORMED METAL- PERFORATED & NON-PERFORATED

Permanent Applications (AMX-XP)

Thickness: 0.08in / 2mm
Length: 8ft / 2.4m
Weight: 99lbs / 45kg

AMX 48 INSTALLED ABOVE GROUND HEIGHT: 30in / 750mm

Notes:

These dimensions are based on maximising the amount of material that can be shipped economically and manoeuvred on site in line with common health and safety guidelines.

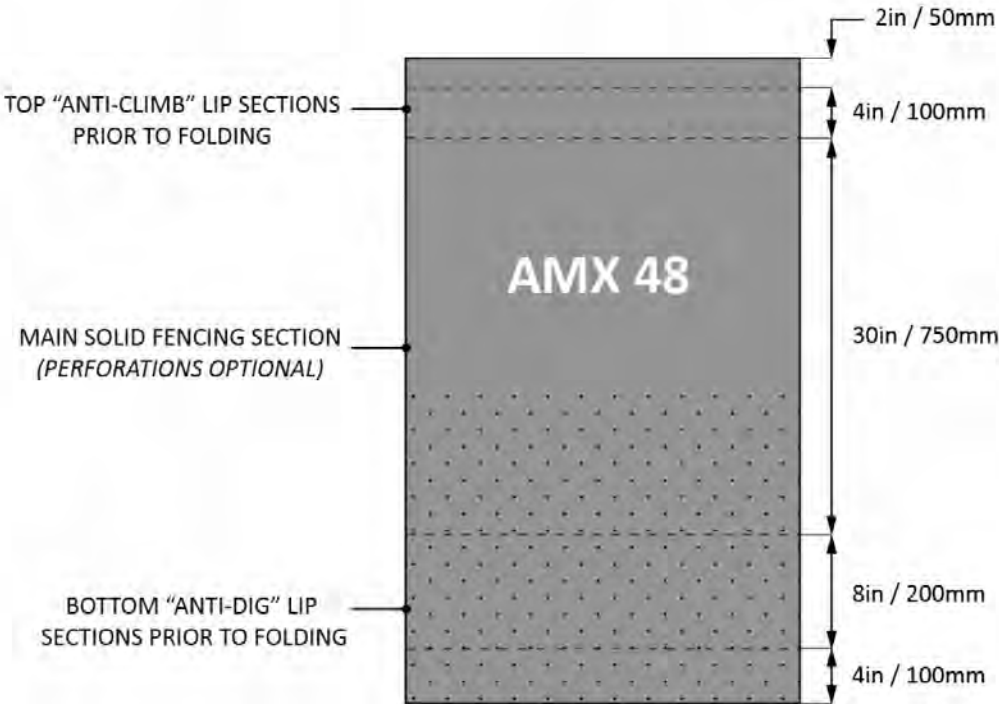
Material may be shipped in sheets or rolls depending on their length.

Customised options for alternative **AMX48** barrier options are available from Animex® Fencing suppliers upon request. Other traditional and existing fencing materials including posts and wire etc can be obtained from local contractors.

NOTES:
This specification should be used to aid Installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

AMX 48

Basic Material Size & Features



AMX 48

Basic Material Size & Features

● **AMX 48**

Step-by-Step Installation

AMX 48

Step-by-step Installation

- 1) Clear vegetation along the fence line and work area.
- 2) Mark out the Animex fence line.
- 3) **Below Ground:** Excavate trench. Ensure the trench is level and clear of large clumps or rocks.
Above Ground: Clear Ground. Ensure the ground is level and clear of large clumps or rocks.
- 4) **Free-Standing:** Lay out posts and roll out Animex barrier (Fold bottom lip if required).
Attached to existing fences: Roll out Animex barrier along fence (Fold bottom lip if required).
- 5) Install posts at the back of the trench using manual or machine powered post driver (Install horizontal wire if required and secure to end braces).
- 6) Place the Animex fence material into the trench with the lips facing towards the area that animals will encounter the fence.
- 7) Fasten the Animex to posts, straining wire or existing fence starting at the top and work down.
- 8) When attaching rolls overlap them following details on installation drawing Pg7. A minimum of 4 ties should be used on any joins in the fence
- 9) Back fill the trench. Ensure the backfill is compact to eliminate gaps for animals to crawl through. Do the same on the back side of the fence.
- 10) Fasten the top lips and install any additional features such as one-way funnels or pitfall traps (if required).

MATERIALS

- Required
- Animex Fencing
 - Animex Washers
 - UV Resistant Zip-ties or Fencing Wire
 - Fence Posts

- Optional
- 12 Gauge Straining Wire
 - Fence end braces & wire strainers
 - Gripple Wire Joiners (or similar)
 - Fence Post Safety Caps

TOOLS & EQUIPMENT

- Required
- Weed wacker / Whipper
 - String Line & Marker Pain
 - Box Cutter / Stanley Knife
 - Trencher / Excavator
 - Spade / Trench / Shovel
 - Post Diver / Sledge Hammer
 - Battery Powered Drill
 - Spade Drill Bit 3/4 (20mm)
 - Cutting Pliers

- Optional
- Shear Attachment For Drill (Trim Fence)
 - Battery Powered reciprocating Saw (Trim Posts)
 - Drill Bit For Drainage Holes 1/8in (3mm)
 - Gripple Tensioning Tool

AMX 48

Step-by-step Installation



●

Fixings & Fastening

Scorded Plastic HDPE

AMX-T & AMX-SP

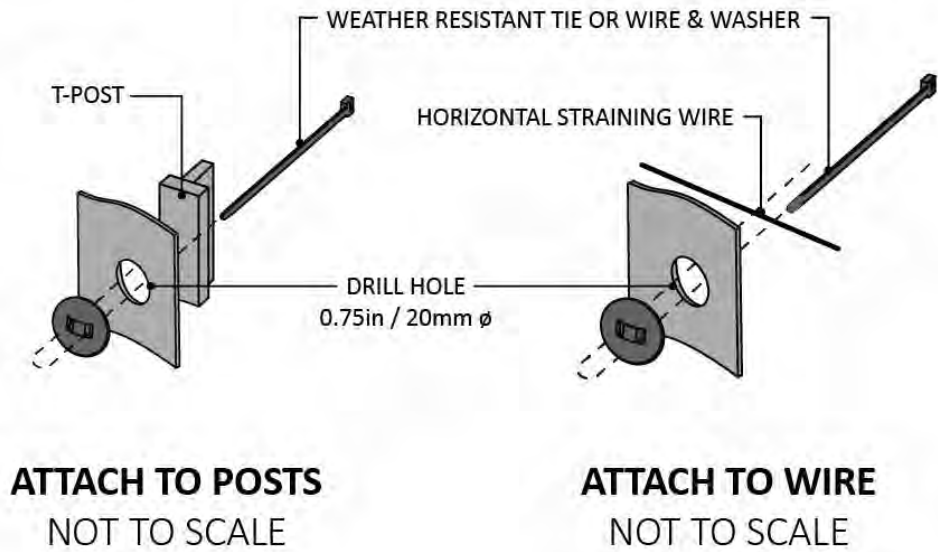
Pre-scored plastic (HDPE) sheets and rolls can expand in when installed in places where there are large fluctuations in temperature. You should therefore avoid hard fixing this material as it can cause buckling and even open up gaps at overlapped or joining sections.

We have prepared some illustrations to demonstrate the best ways to connect and fasten HDPE rolls and sheets.

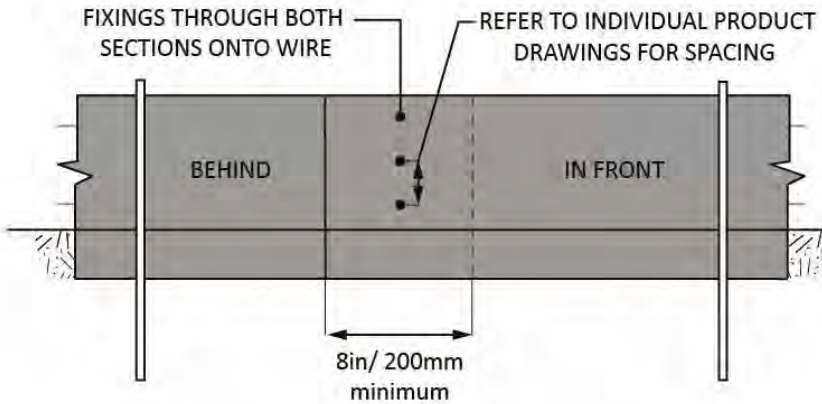
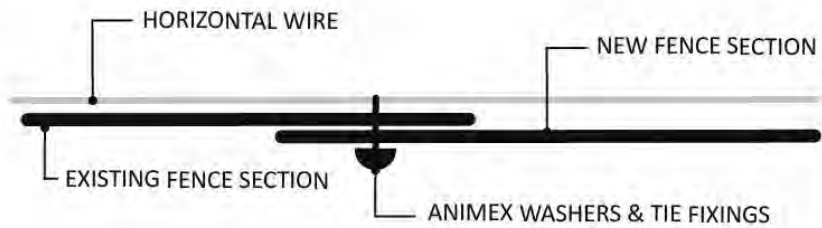
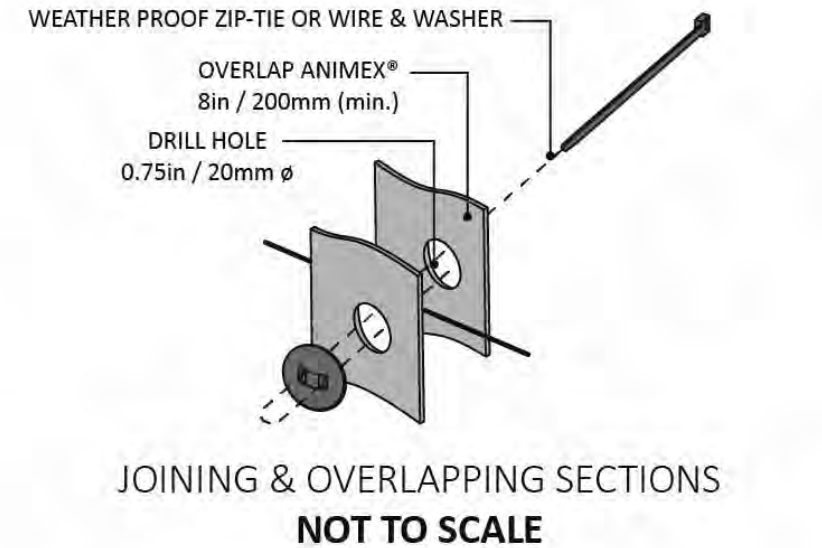
This technique helps to reduce the chances of gaps opening up at the joins and allows the fencing to expand and contract freely.

Ensuring the trench is backfilled correctly and the earth is compacted tightly against both sides of the fence is also essential to ensure there are no gaps at ground level where animals will be encountering the fence.

Joins should be made between posts and onto horizontal wire or horizontal parts of existing fences where possible.



NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



●

Fixings & Fastening

Scored Plastic HDPE

Preformed Metal

AMX-XP

Preformed metal fencing is supplied in sections that are often custom made for your project.

Each section slots inside the other and is then fastened by drilling holes through the overlapping sections and securing with bolt, nuts and washers.

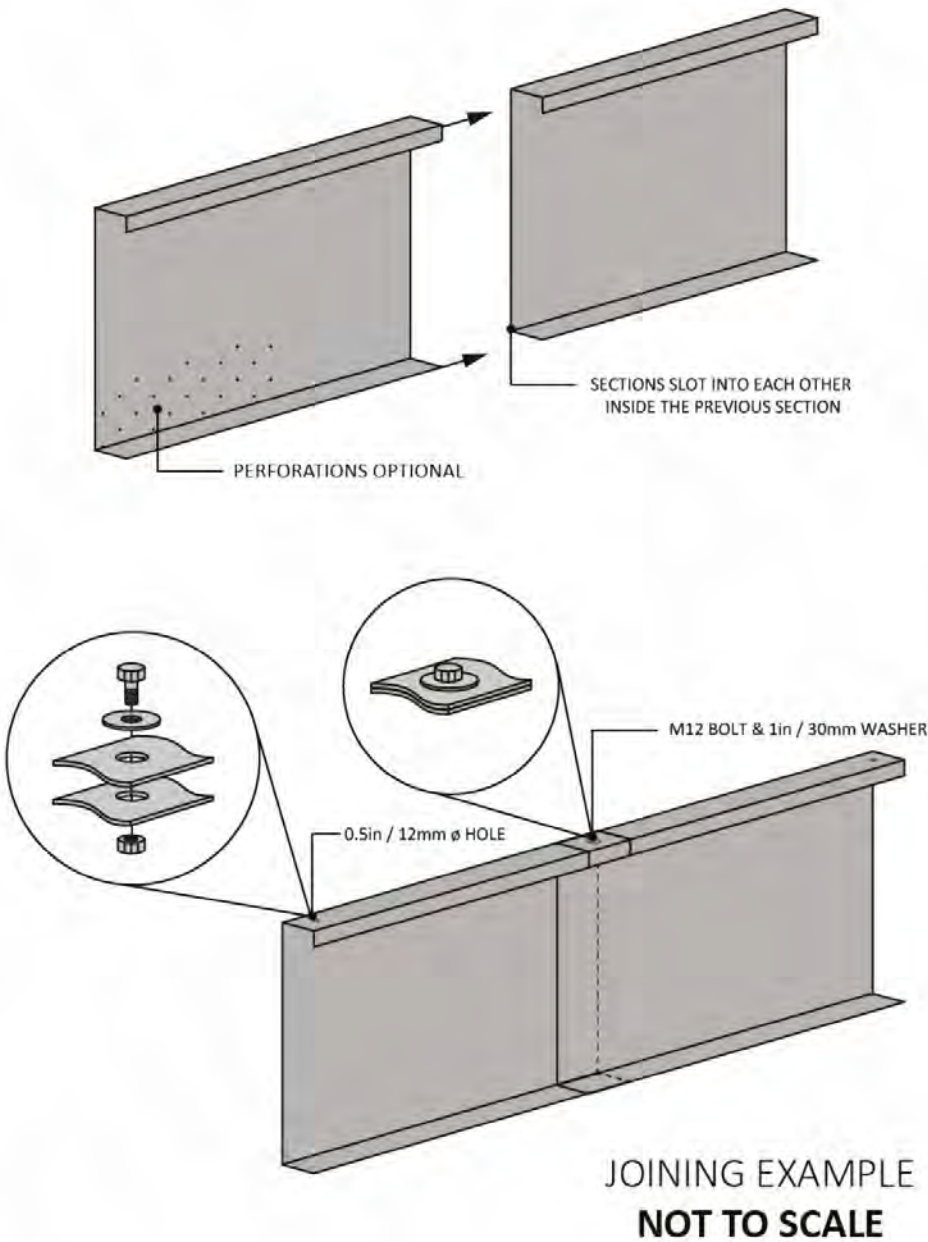
End sections and turn-arounds will also be custom made per project and fitted on site.

Panels can be supplied with a power coating but this will increase costs and may need touch ups after installation.

NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

Fixings & Fastening

Scored Plastic HDPE

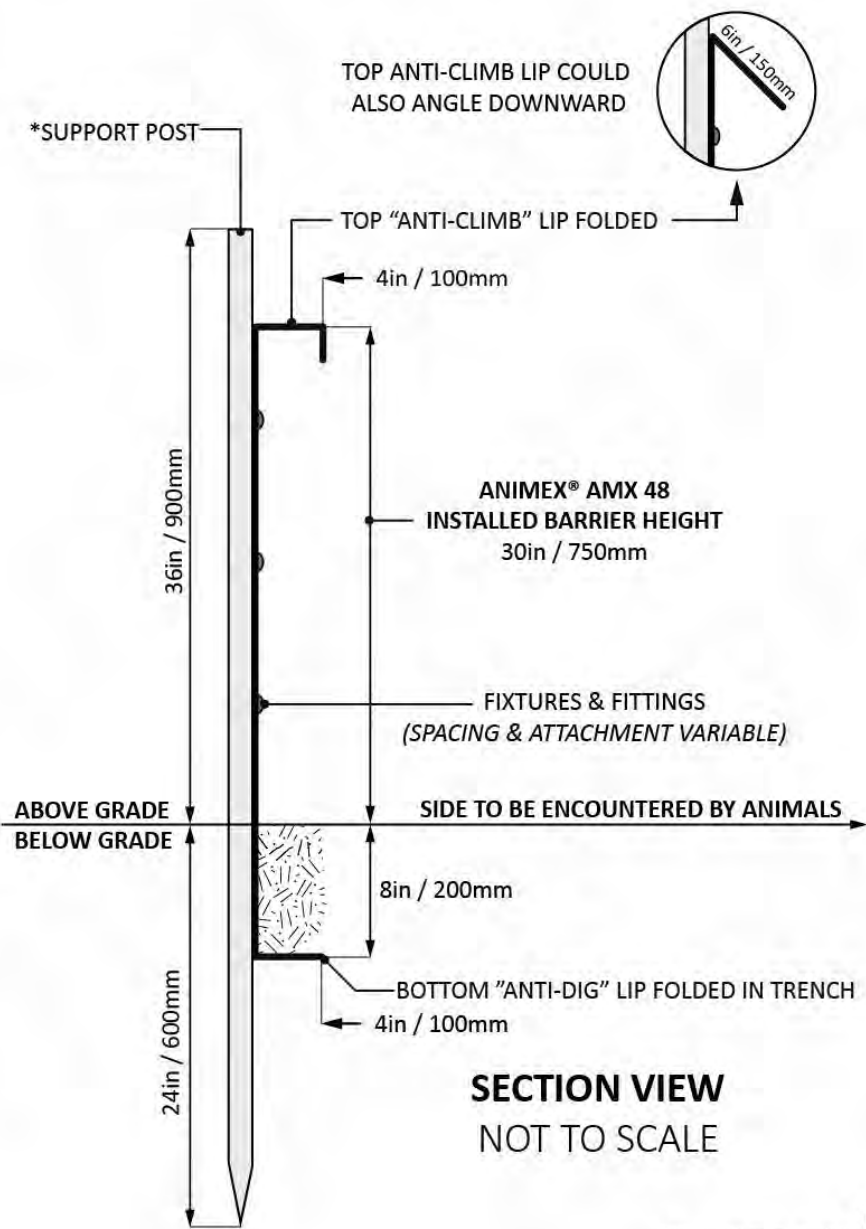


Fixings & Fastening

Scored Plastic HDPE

● **AMX 48**

Free-standing Below Ground



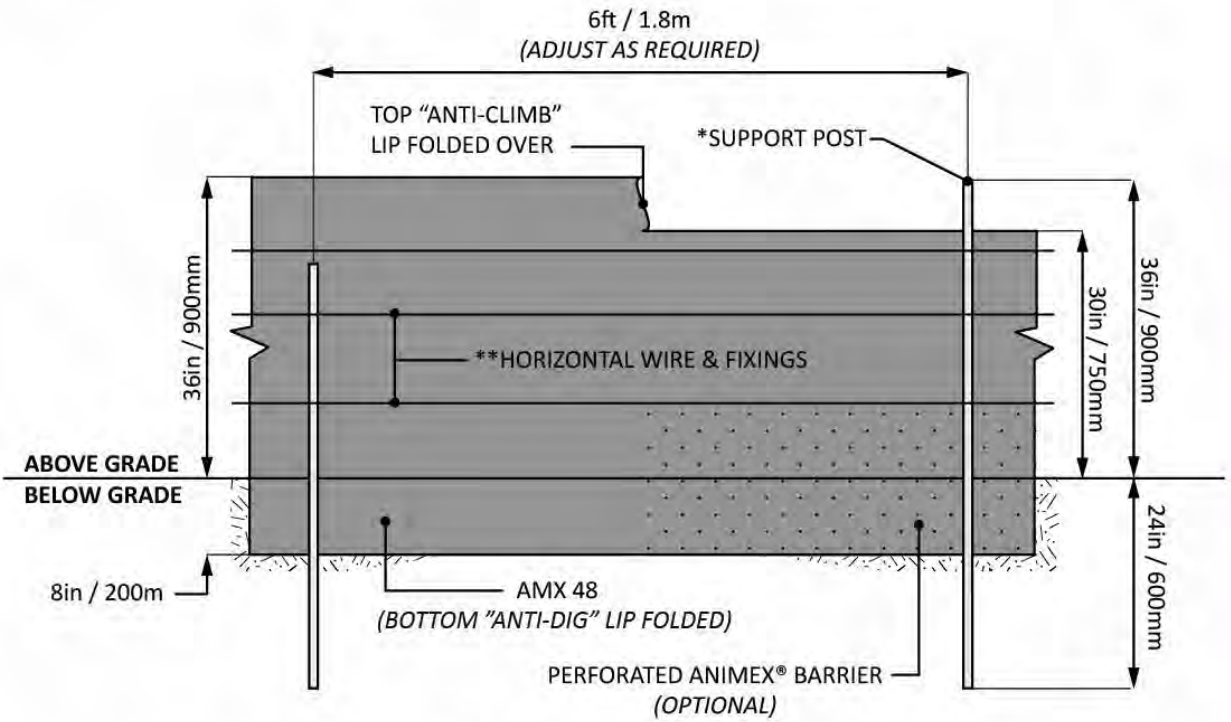
NOTES:
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AMX 48

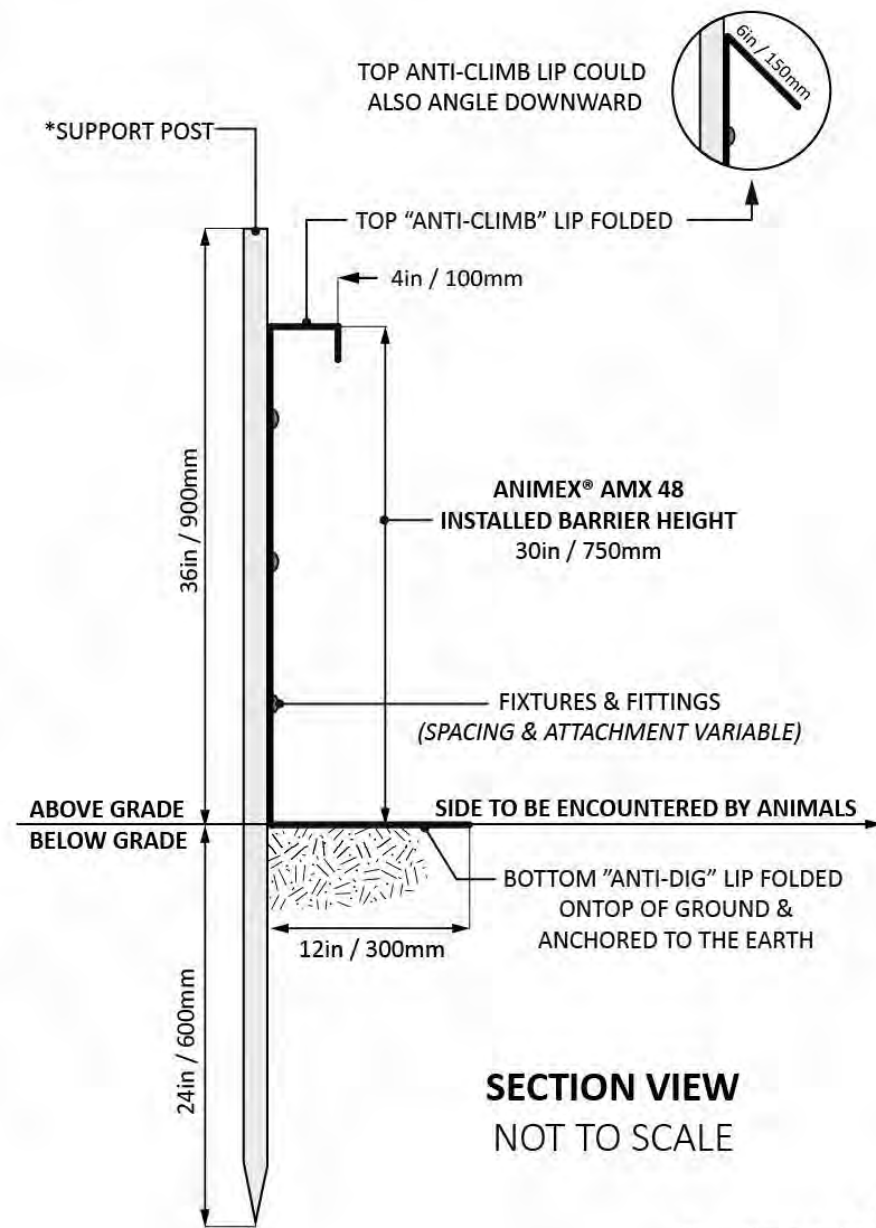
Free-standing Below Ground

*SUPPORT POSTS & HORIZONTAL WIRE MAY NOT BE NEEDED FOR PREFORMED METAL (AMX-XP) FENCES
**HORIZONTAL WIRE MAY NOT BE NEEDED FOR TEMPORARY (AMX-T) FENCES



● **AMX 48**

Free-standing Above Ground



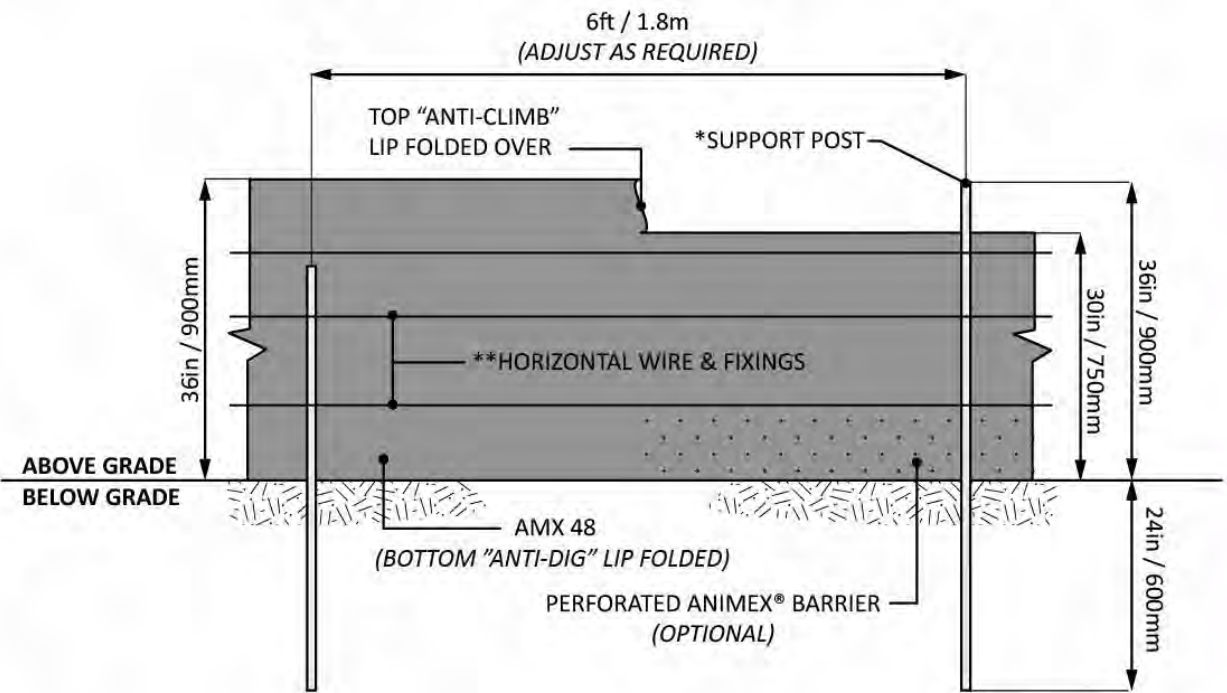
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AMX 48
Free-standing Above Ground

APPLY THIS ABOVE GROUND METHOD WHEN ATTACHING TO EXISTING FENCE TYPES AS WELL

*SUPPORT POSTS & HORIZONTAL WIRE MAY NOT BE NEEDED FOR PREFORMED METAL (AMX-XP) FENCES
**HORIZONTAL WIRE MAY NOT BE NEEDED FOR TEMPORARY (AMX-T) FENCES

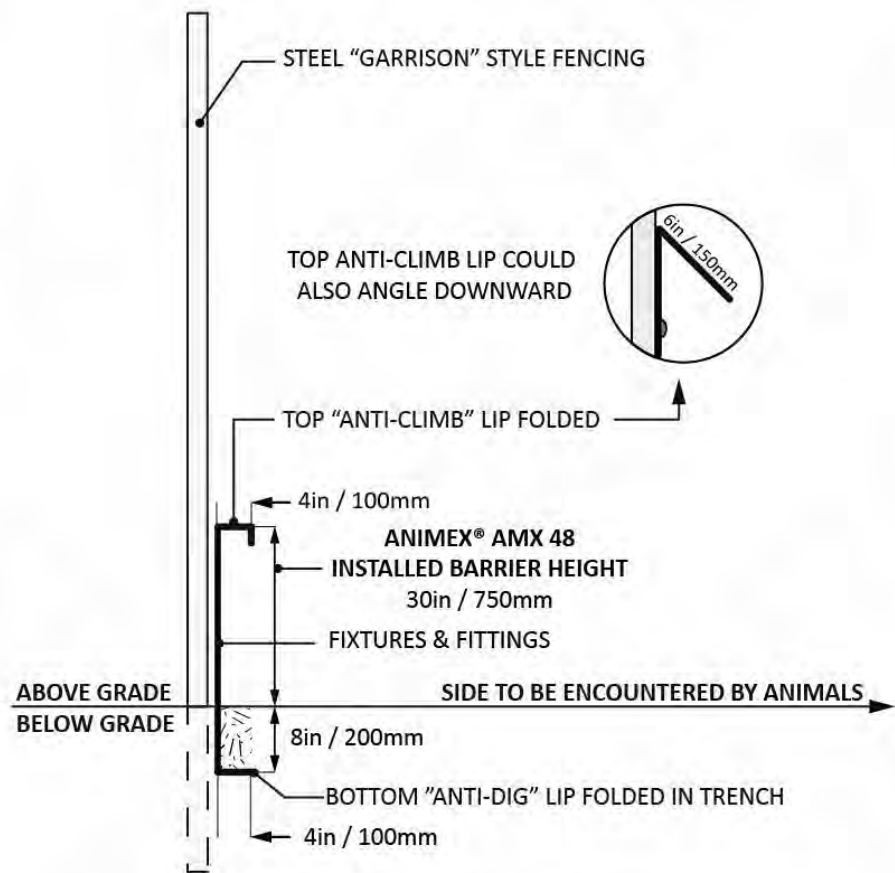


ELEVATION VIEW NOT TO SCALE

AMX 48
Free-standing Above Ground

● **AMX 48**

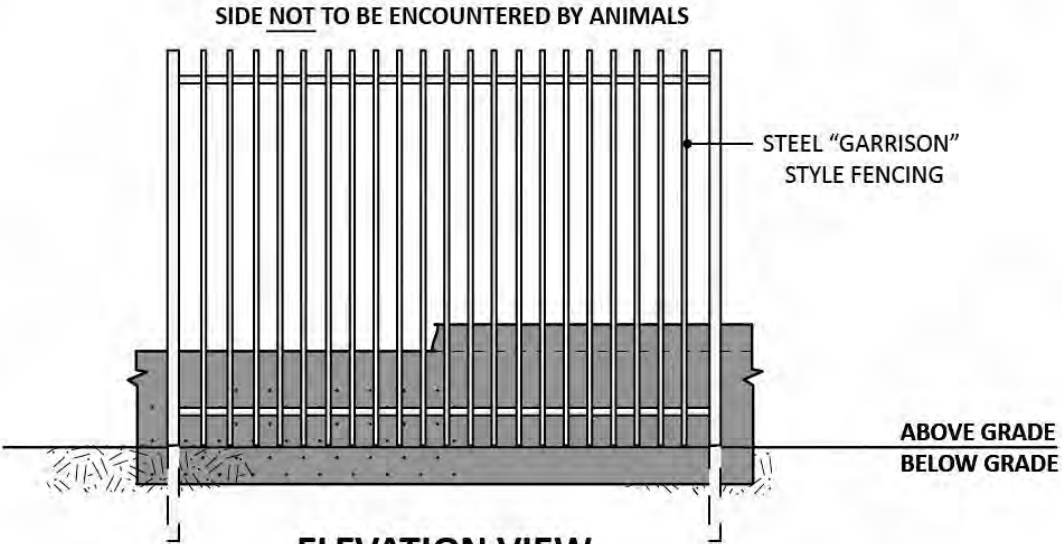
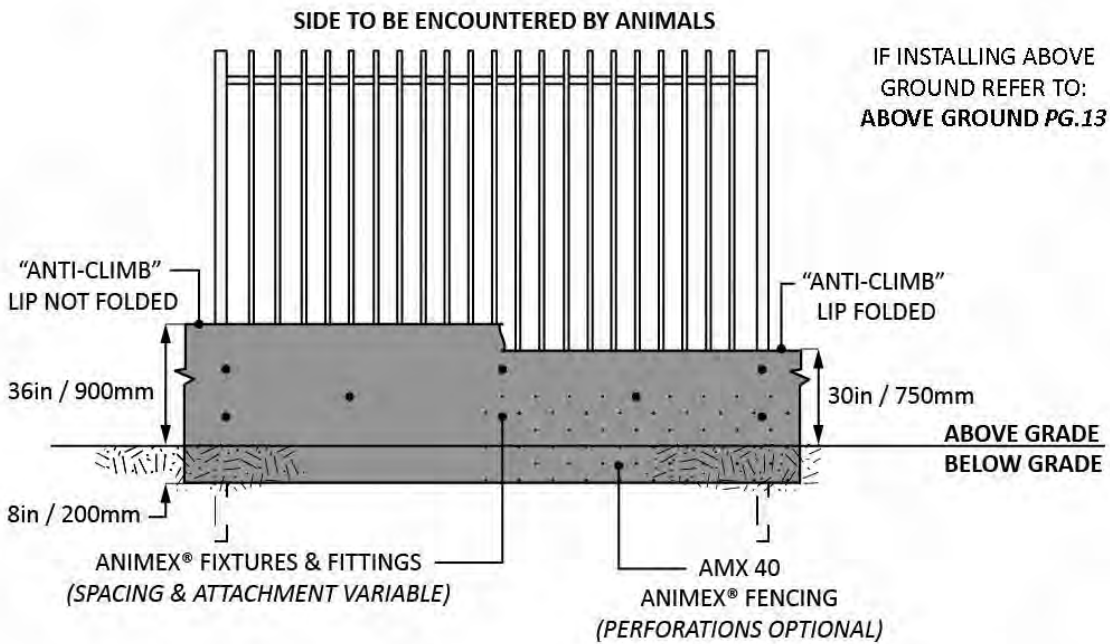
Attached Garrison



SECTION VIEW
NOT TO SCALE

NOTES:
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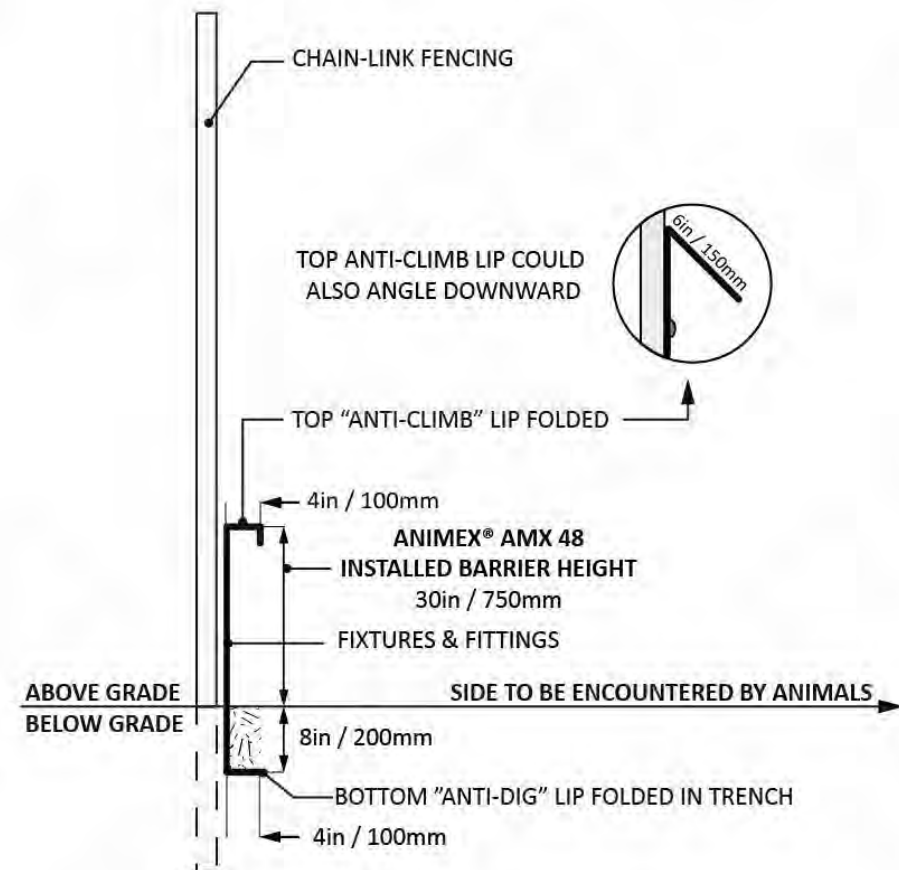


ELEVATION VIEW
NOT TO SCALE

AMX 48
Attached Garrison

● **AMX 48**

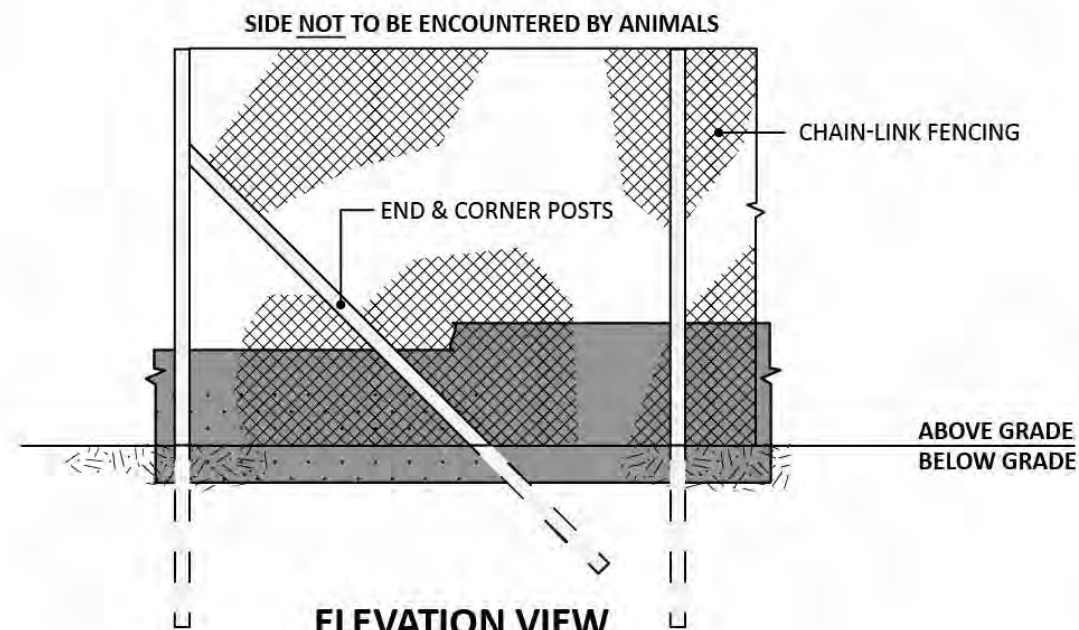
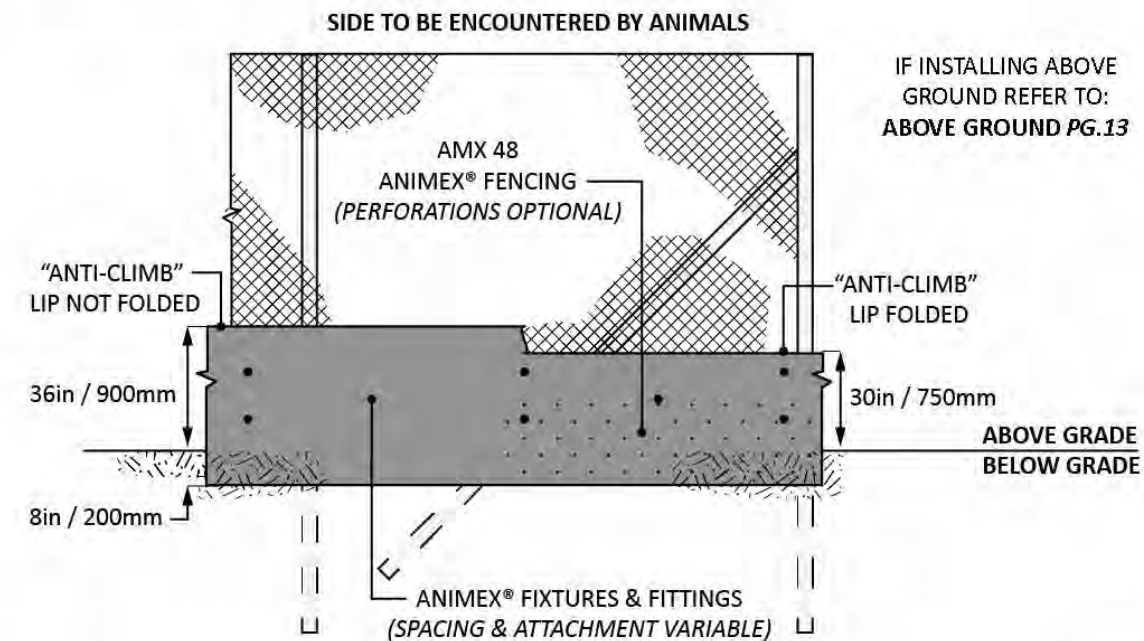
Attached Chain-link



SECTION VIEW
NOT TO SCALE

NOTES:
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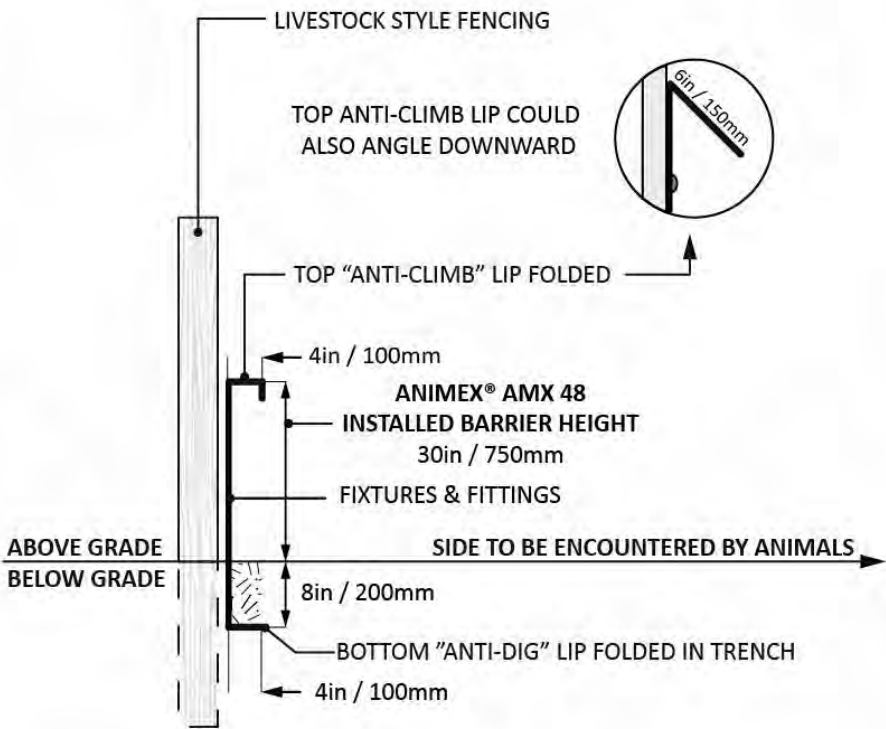


ELEVATION VIEW
NOT TO SCALE

AMX 48
Attached Chain-link

● **AMX 48**

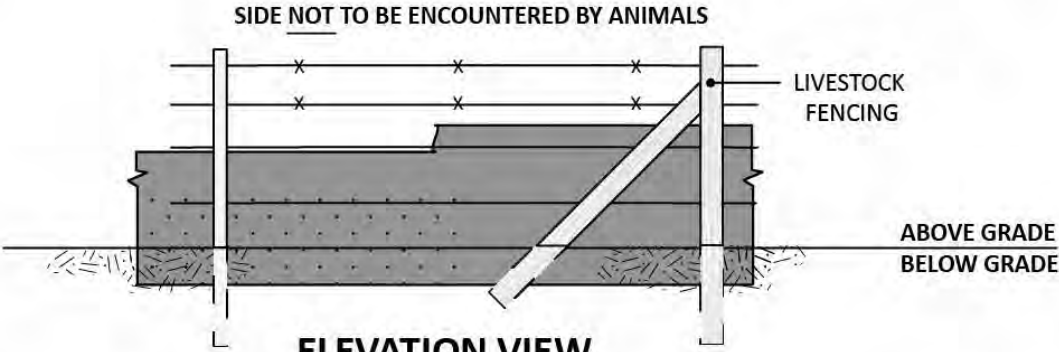
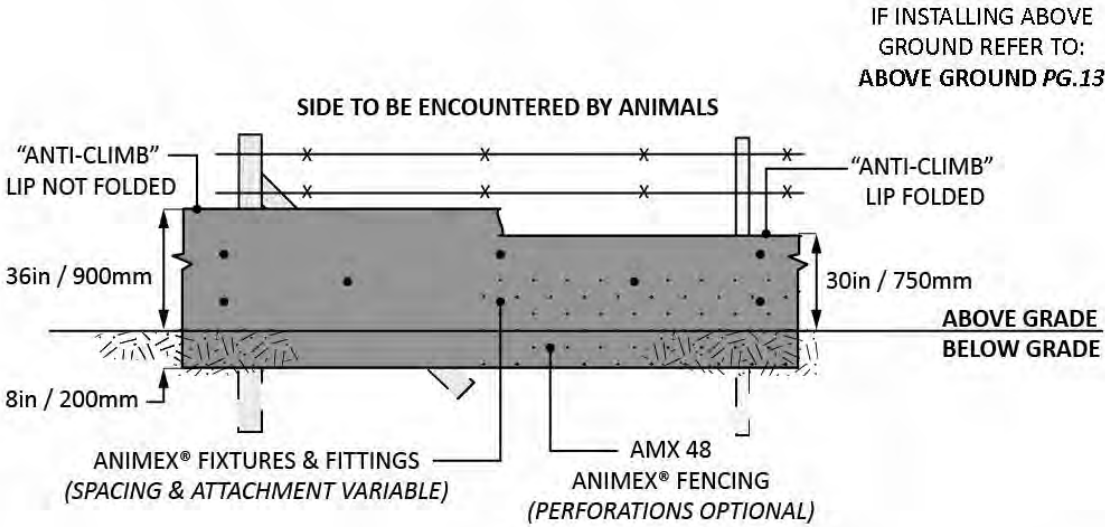
Attached Live Stock



SECTION VIEW
NOT TO SCALE

NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

AMX 48
Attached Livestock



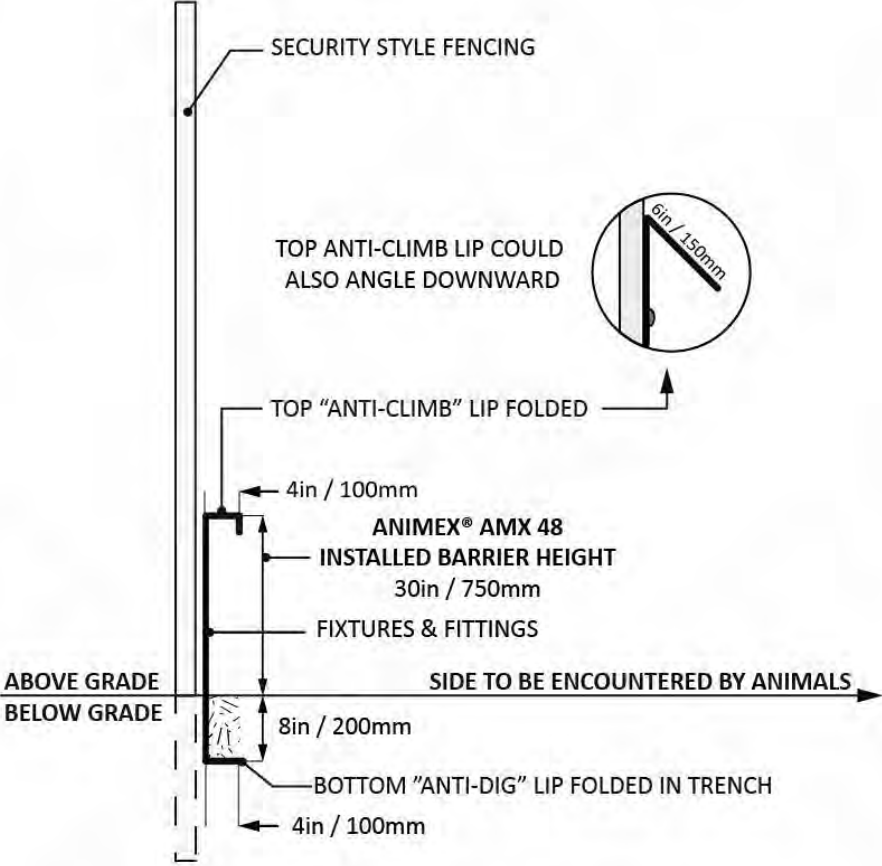
ELEVATION VIEW
NOT TO SCALE

NOTES:
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AMX 48
Attached Livestock

● **AMX 48**

Attached Security

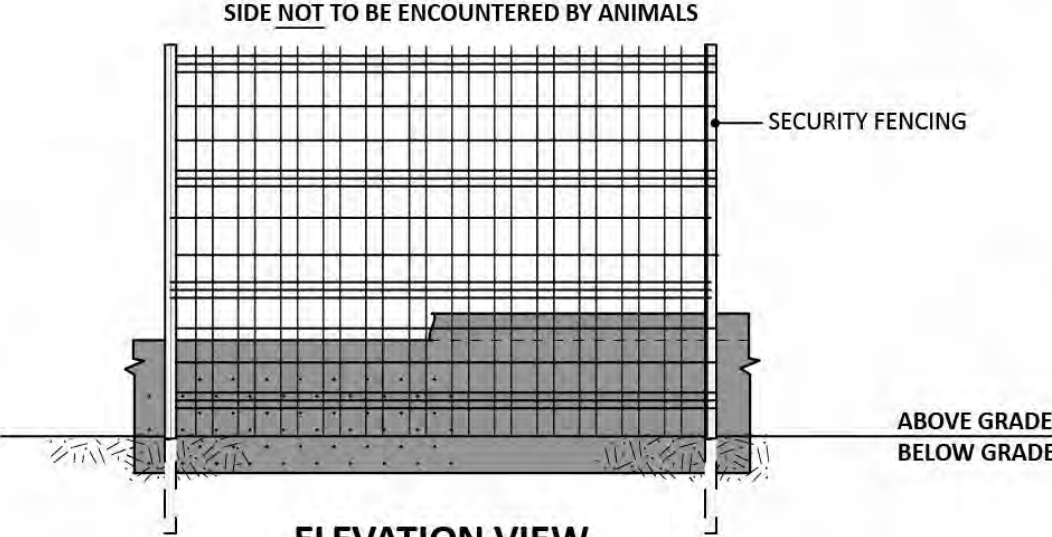
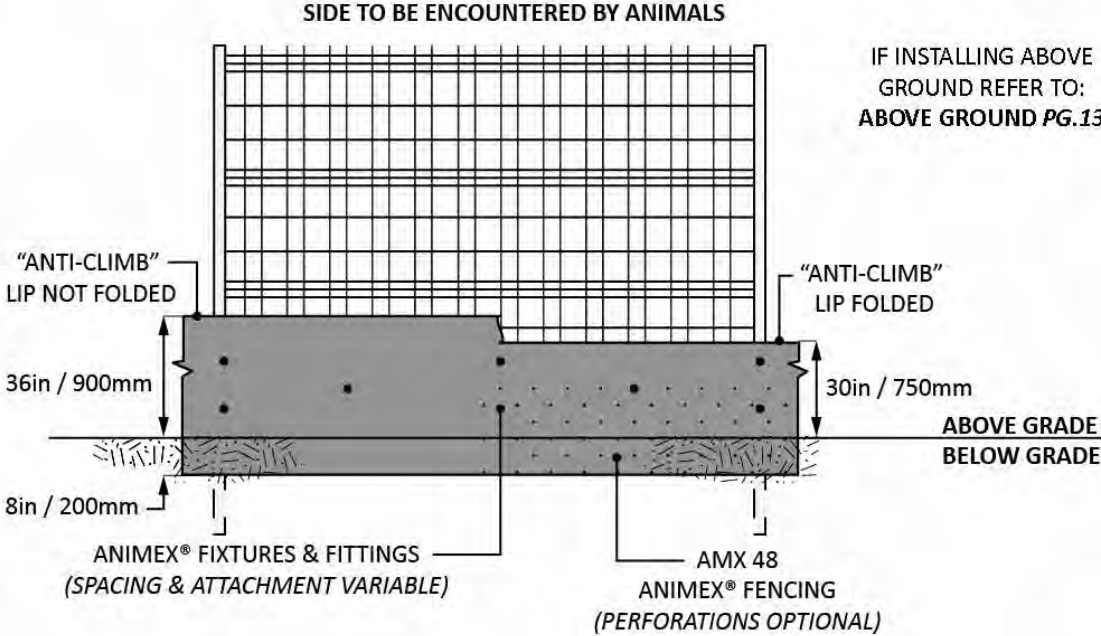


SECTION VIEW
NOT TO SCALE

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AMX 48
Attached Security

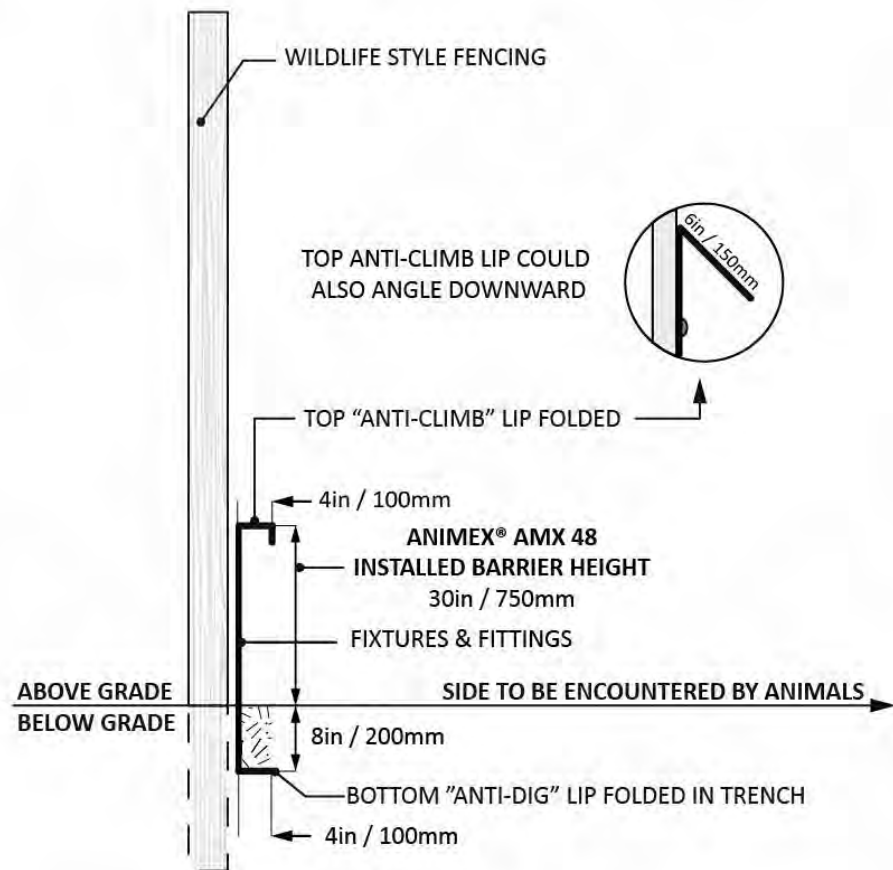


ELEVATION VIEW
NOT TO SCALE

AMX 48
Attached Security

● **AMX 48**

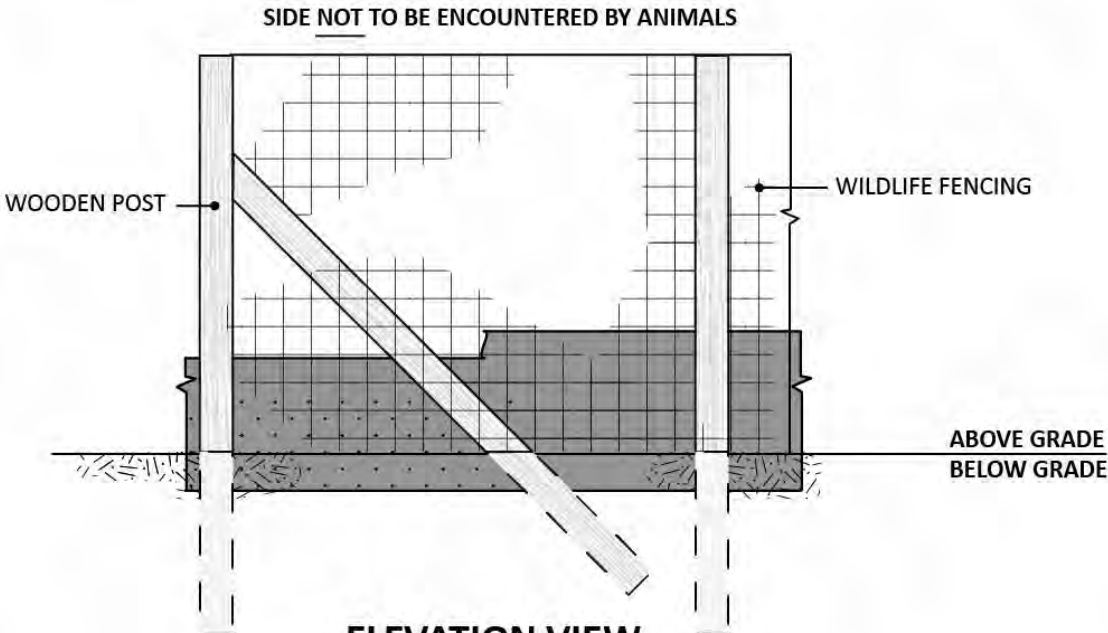
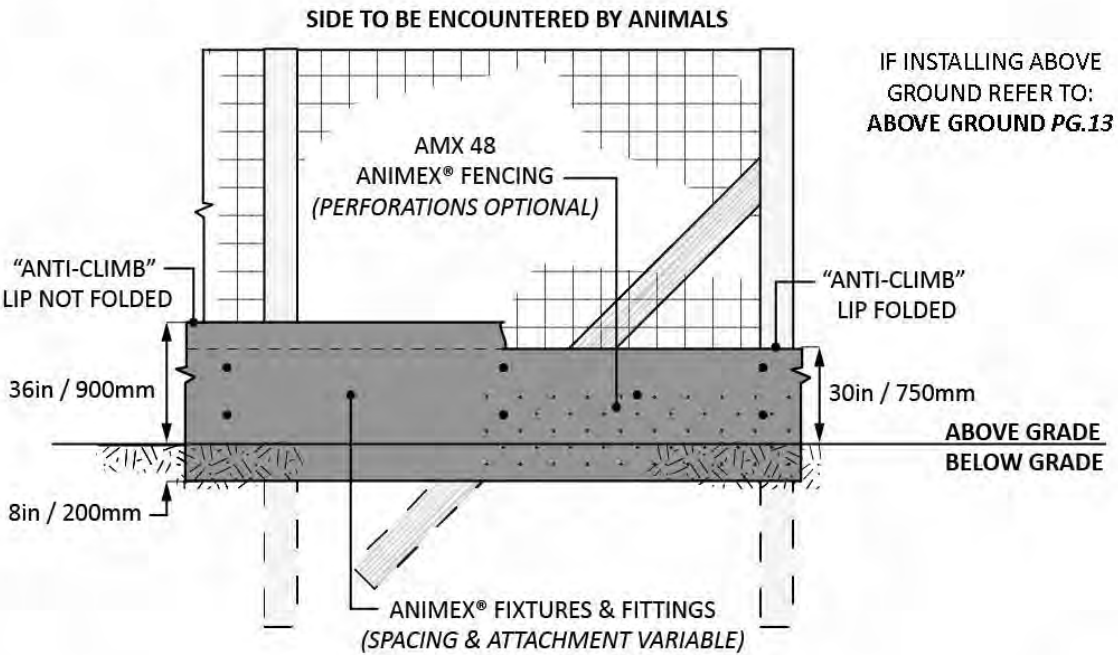
Attached Large Wildlife



SECTION VIEW
NOT TO SCALE

NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

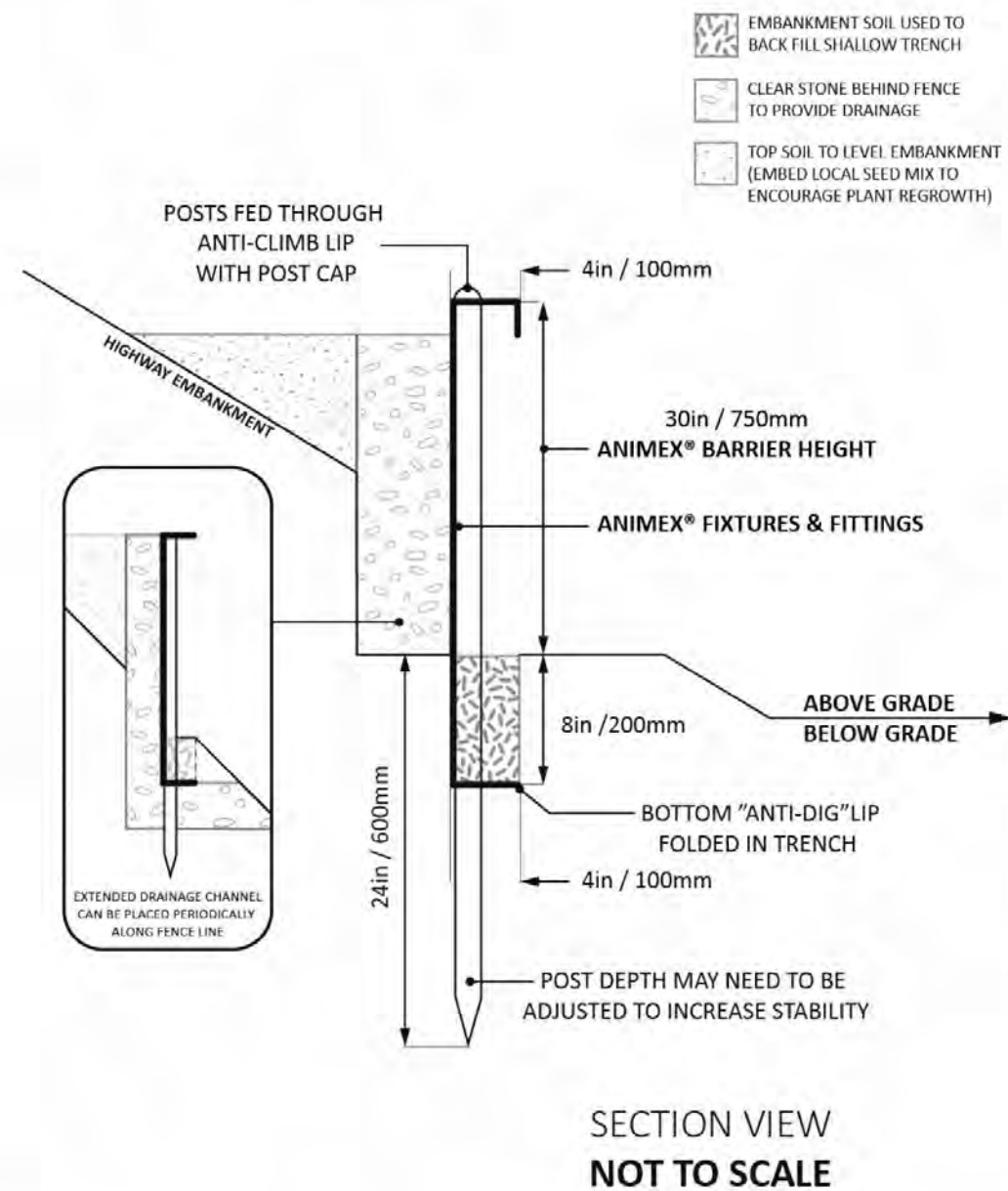
NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



ELEVATION VIEW
NOT TO SCALE

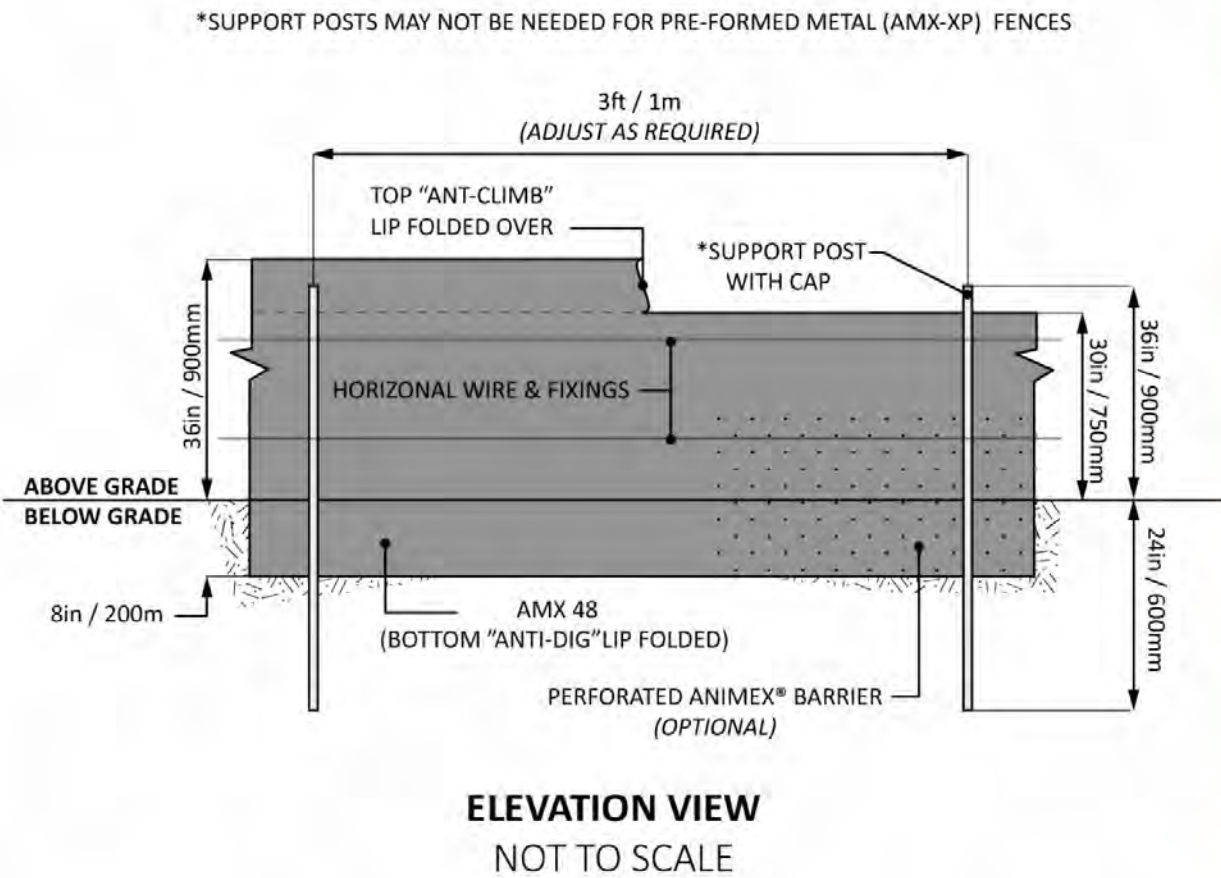
AMX 48
Attached Wildlife

Specialized Fencing Specifications
Roadside Embankment



NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

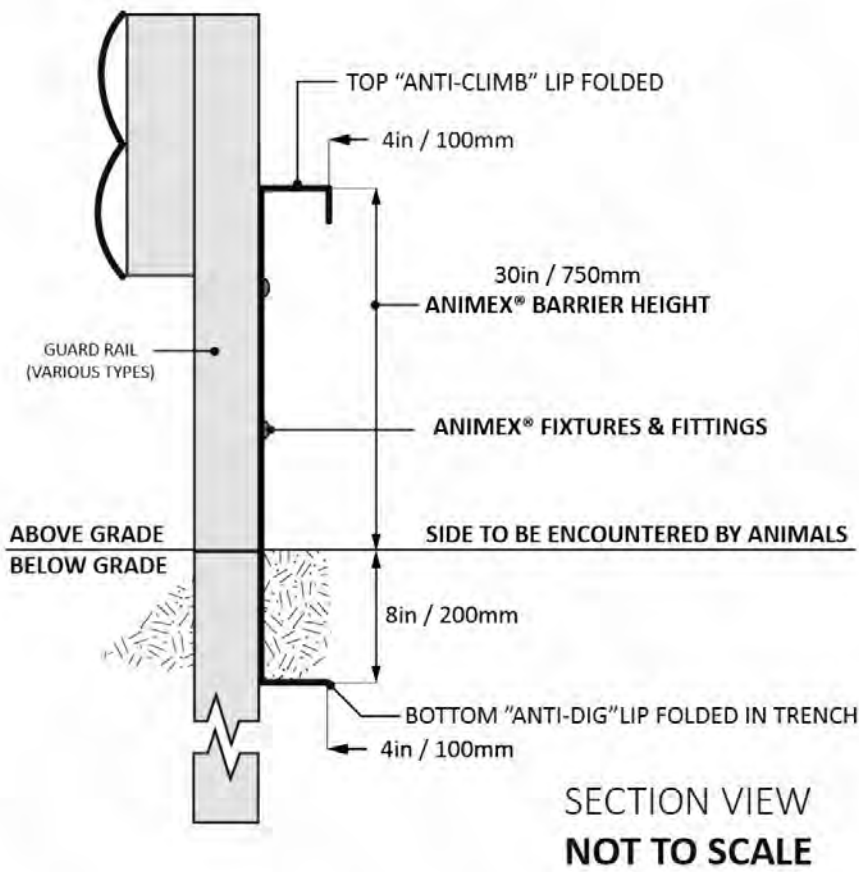
Specialized Fencing Specifications
Roadside Embankment



●

Specialized Fencing Specifications

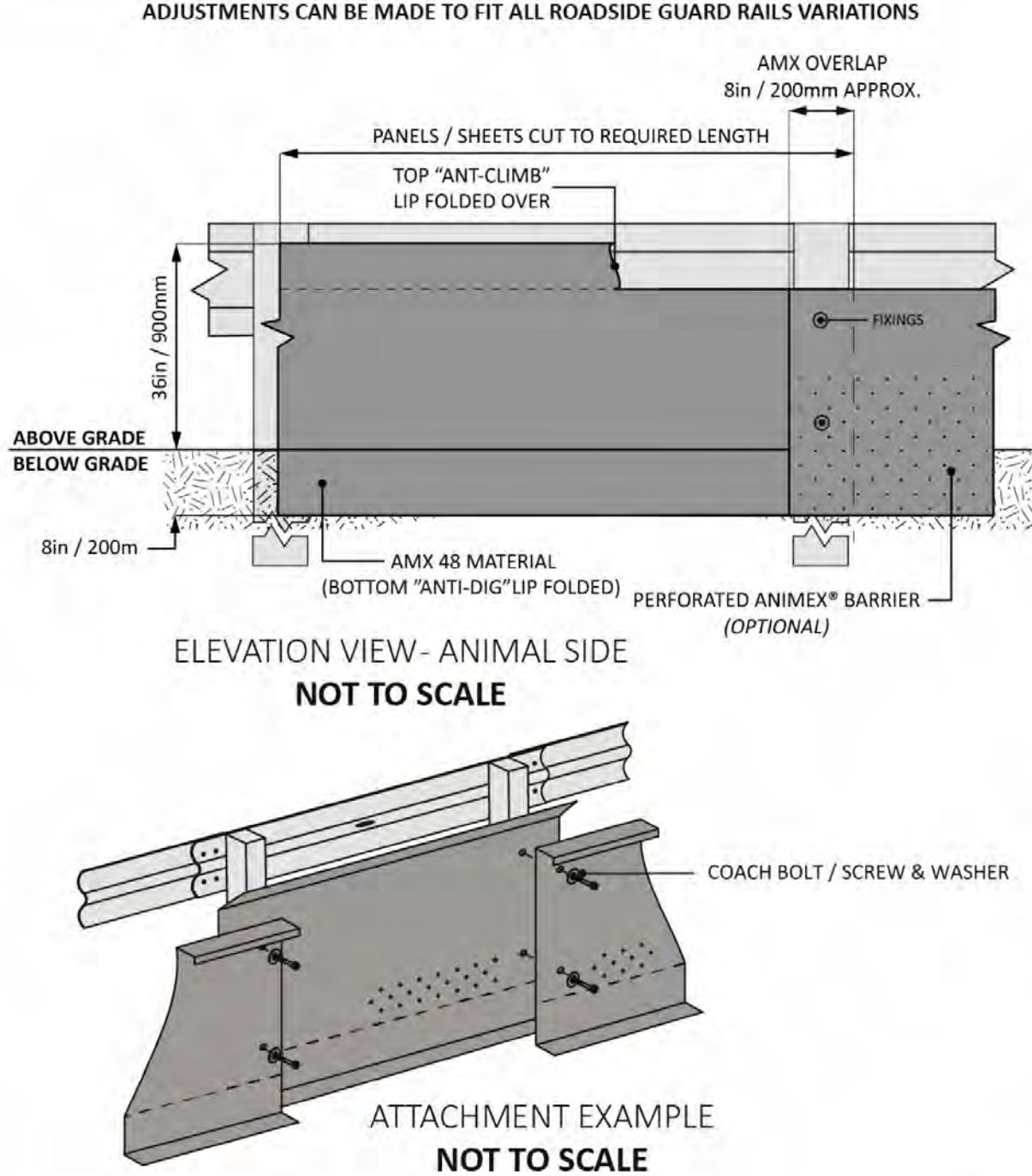
Roadside Guardrail



NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

Specialized Fencing Specifications

Roadside Guardrail



Specialized Fencing Specifications

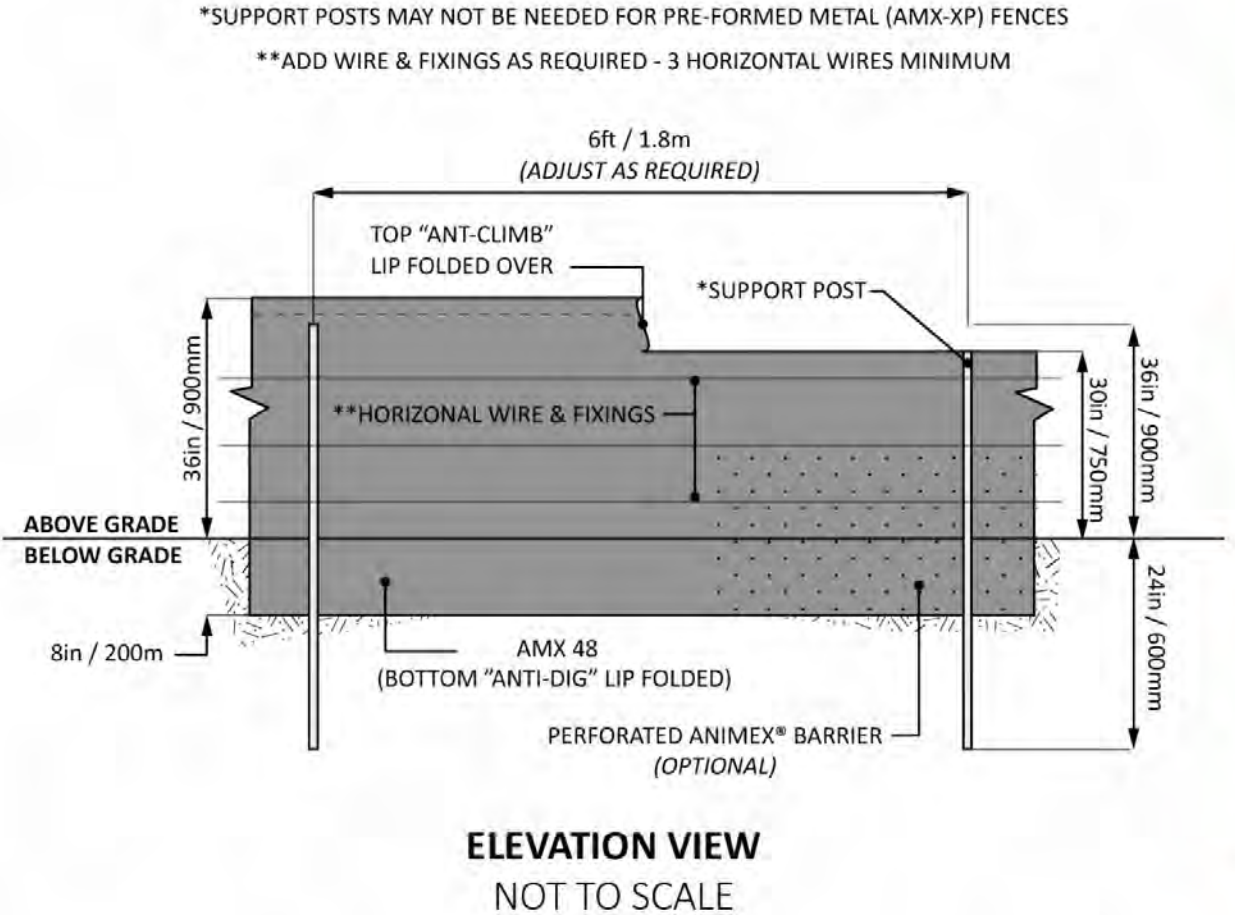
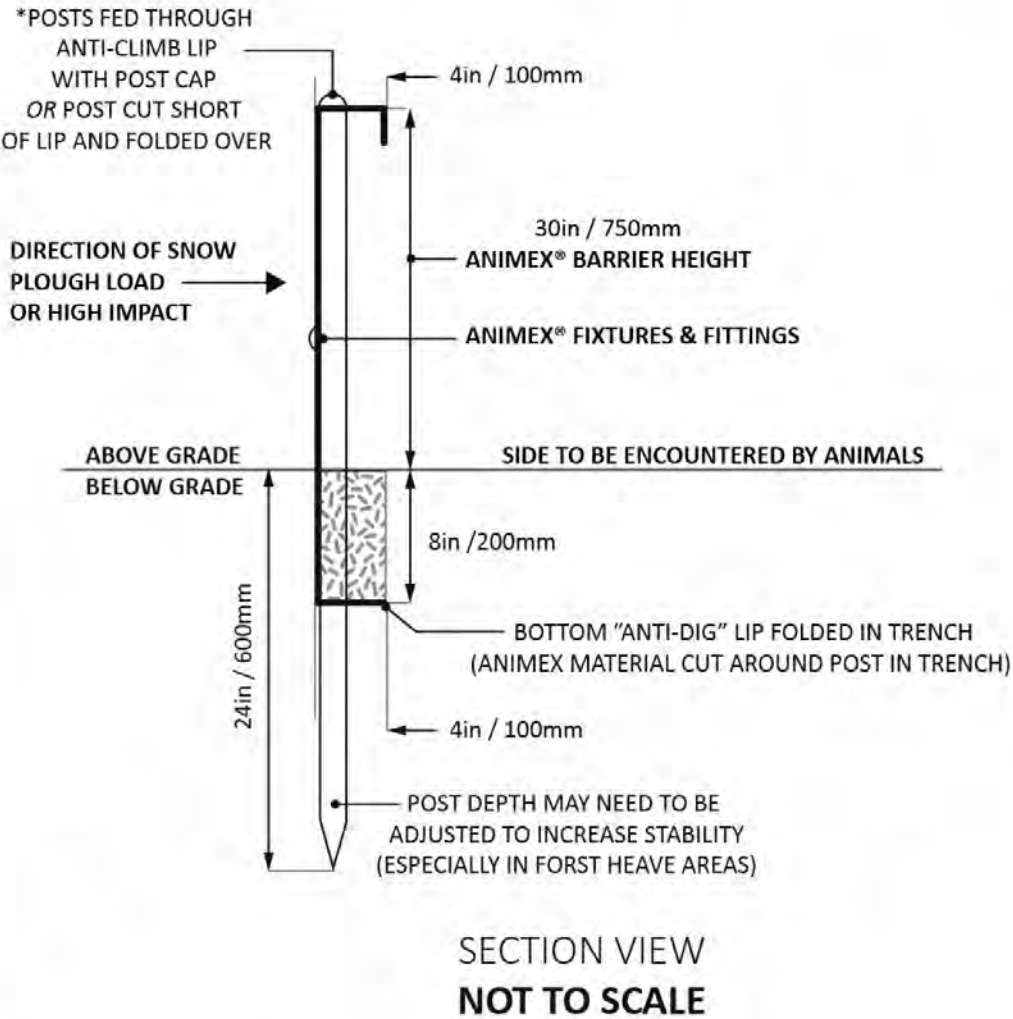
●

Specialized Fencing Specifications

Snow Load / High Impact

NOTES:
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

Specialized Fencing Specifications
Snow Load / High Impact



Specialized Fencing Specifications

Specialized Fencing Specifications
Snow Load / High Impact



● Tender Document Descriptions

AMX 48
Tender Document Descriptions

AMX-T / AMX-SP

General Description:
Specifically designed solid Animex wildlife fencing barrier to protect, exclude or guide wildlife.

Common Applications:
Roads
Construction sites
Scientific research
Conservation zones
Species re-introduction

Material Height:
1015mm (40in)
1070mm (42in)
1220mm (48in)
1550mm (60in)
Custom options available

Material Thickness:
AMX-T (Temporary): 1mm
AMX-SP (Semi-Permanent): 2mm

Material Properties:
Solid barrier - no mesh, matrix or geo-textile material
Made from High Density Polyethylene (HDPE) in North America
Grooves or scoreline 100mm (4in) from the top and bottom edge to create fold-able lips
Glossy surface on one side
Perforations to allow water flow (if required)
Supplied in sheets or rolls
Maximum weight per item 25kg (55lbs)

Installation:
See relevant drawings and guides displayed in this document between pages 6 and 29

AMX-XP

General Description:
Specifically designed solid Animex wildlife fencing barrier to protect, exclude or guide wildlife.

Common Applications:
Roads
Construction sites
Scientific research
Conservation zones
Species re-introduction

Material Height:
1015mm (40in)
1070mm (42in)
1220mm (48in)
1550mm (60in)
Custom options available

Material Thickness:
AMX-XP - (Permanent): 2mm

Material Properties:
Solid metal barrier - no mesh, matrix or geo-textile material
Made from weather resistant metals
Pre-formed with top and bottom lips (as detailed in drawing pg9)
Perforations to allow water flow (if required)
Supplied in sheets
Maximum weight per item 40kg (88lbs)

Installation:
See relevant drawings and guides displayed in this document on pages 8 and 9

This document is continually updated based on new research and information.

To ensure you are referencing the most recent version please contact:

info@animexfencing.com

FOR MORE INFORMATION OF WILDLIFE FENCING PLEASE VISIT:

WWW.WILDLIFEFENCING.COM

Animex[®]
www.animexfencing.com

C2 California Natural Diversity Database Results



California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Bernardino North (3411723) OR Harrison Mtn. (3411722) OR Keller Peak (3411721) OR Yucaipa (3411711) OR El Casco (3311781) OR Sunnymead (3311782) OR Riverside East (3311783) OR San Bernardino South (3411713) OR Redlands (3411712))

Inland Feeder - Foothill Pump Station Intertie Project (March 2024)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Alvin Meadow bedstraw <i>Galium californicum ssp. primum</i>	PDRUB0N0E6	None	None	G5T2	S2	1B.2
American badger <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
American bumble bee <i>Bombus pensylvanicus</i>	IIHYM24260	None	None	G3G4	S2	
Andrew's marble butterfly <i>Euchloe hyantis andrewsi</i>	IILEPA5032	None	None	G3G4T2	S2	
arroyo chub <i>Gila orcuttii</i>	AFCJB13120	None	None	G2	S2	SSC
ash-gray paintbrush <i>Castilleja cinerea</i>	PDSCR0D0H0	Threatened	None	G1G2	S1S2	1B.2
bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S3	FP
Bear Valley checkerbloom <i>Sidalcea malviflora ssp. dolosa</i>	PDMAL110FH	None	None	G5T2	S2	1B.2
Bell's sparrow <i>Artemisiospiza belli belli</i>	ABPBX97021	None	None	G5T2T3	S3	WL
bird-foot checkerbloom <i>Sidalcea pedata</i>	PDMAL110L0	Endangered	Endangered	G1	S1	1B.1
black bog-rush <i>Schoenus nigricans</i>	PMCYP0P010	None	None	G4	S2	2B.2
bristly sedge <i>Carex comosa</i>	PMCYP032Y0	None	None	G5	S2	2B.1
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S2	SSC
Busck's gallmoth <i>Eugnosta busckana</i>	IILEM2X090	None	None	G1G3	S2S3	
California black rail <i>Laterallus jamaicensis coturniculus</i>	ABNME03041	None	Threatened	G3T1	S2	FP
California diplectronan caddisfly <i>Diplectrona californica</i>	IITRI23010	None	None	G1G2	S1	
California glossy snake <i>Arizona elegans occidentalis</i>	ARADB01017	None	None	G5T2	S2	SSC
California horned lark <i>Eremophila alpestris actia</i>	ABPAT02011	None	None	G5T4Q	S4	WL

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California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California satintail <i>Imperata brevifolia</i>	PMPOA3D020	None	None	G3	S3	2B.1
Canyon Live Oak Ravine Forest <i>Canyon Live Oak Ravine Forest</i>	CTT61350CA	None	None	G3	S3.3	
chaparral ragwort <i>Senecio aphanactis</i>	PDAST8H060	None	None	G3	S2	2B.2
coast horned lizard <i>Phrynosoma blainvillii</i>	ARACF12100	None	None	G4	S4	SSC
coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	ARADB30033	None	None	G5T4	S3	SSC
coastal California gnatcatcher <i>Poliophtila californica californica</i>	ABPB08081	Threatened	None	G4G5T3Q	S2	SSC
coastal whiptail <i>Aspidoscelis tigris stejnegeri</i>	ARACJ02143	None	None	G5T5	S3	SSC
Cooper's hawk <i>Accipiter cooperii</i>	ABNKC12040	None	None	G5	S4	WL
Coulter's goldfields <i>Lasthenia glabrata ssp. coulteri</i>	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch's bumble bee <i>Bombus crotchii</i>	IIHYM24480	None	Candidate Endangered	G2	S2	
Davidson's saltscale <i>Atriplex serenana var. davidsonii</i>	PDCHE041T1	None	None	G5T1	S1	1B.2
Delhi Sands flower-loving fly <i>Rhaphiomidas terminatus abdominalis</i>	IIDIP05021	Endangered	None	G1T1	S1	
Desert cuckoo wasp <i>Ceratochrysis longimala</i>	IIHYM71040	None	None	G1	S1	
ferruginous hawk <i>Buteo regalis</i>	ABNKC19120	None	None	G4	S3S4	WL
Gambel's water cress <i>Nasturtium gambelii</i>	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
golden eagle <i>Aquila chrysaetos</i>	ABNKC22010	None	None	G5	S3	FP
Hall's monardella <i>Monardella macrantha ssp. hallii</i>	PDLAM180E1	None	None	G5T3	S3	1B.3
Horn's milk-vetch <i>Astragalus hornii var. hornii</i>	PDFAB0F421	None	None	GUT1	S1	1B.1
hot springs fimbriatylis <i>Fimbristylis thermalis</i>	PMCYP0B0N0	None	None	G4	S1S2	2B.2
Laguna Mountains jewelflower <i>Streptanthus bernardinus</i>	PDBRA2G060	None	None	G3G4	S3S4	4.3



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Lawrence's goldfinch <i>Spinus lawrencei</i>	ABPBY06100	None	None	G3G4	S4	
least Bell's vireo <i>Vireo bellii pusillus</i>	ABPBW01114	Endangered	Endangered	G5T2	S3	
lemon lily <i>Lilium parryi</i>	PMLIL1A0J0	None	None	G3	S3	1B.2
lesser long-nosed bat <i>Leptonycteris yerbabuenae</i>	AMACB03030	Delisted	None	G3	S1	SSC
lodgepole chipmunk <i>Neotamias speciosus speciosus</i>	AMAFB02172	None	None	G4T3T4	S2	
loggerhead shrike <i>Lanius ludovicianus</i>	ABPBR01030	None	None	G4	S4	SSC
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	AMAFD01041	None	None	G5T2	S1S2	SSC
Los Angeles sunflower <i>Helianthus nuttallii ssp. parishii</i>	PDAST4N102	None	None	G5TX	SX	1A
marsh sandwort <i>Arenaria paludicola</i>	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
merlin <i>Falco columbarius</i>	ABNKD06030	None	None	G5	S3S4	WL
mesa horkelia <i>Horkelia cuneata var. puberula</i>	PDROS0W045	None	None	G4T1	S1	1B.1
Morrison bumble bee <i>Bombus morrisoni</i>	IIHYM24460	None	None	G3	S1S2	
Mt. Pinos onion <i>Allium howellii var. clokeyi</i>	PMLIL02161	None	None	G4T2	S2	1B.3
mud nama <i>Nama stenocarpa</i>	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Nevin's barberry <i>Berberis nevinii</i>	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	AMAFD05031	None	None	G5T3T4	S3S4	
orange-throated whiptail <i>Aspidoscelis hyperythra</i>	ARACJ02060	None	None	G5	S2S3	WL
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G4	S3	SSC
Palmer's mariposa-lily <i>Calochortus palmeri var. palmeri</i>	PMLIL0D122	None	None	G3T2	S2	1B.2
Parish's alumroot <i>Heuchera parishii</i>	PDSAX0E1F0	None	None	G3	S3	1B.3
Parish's bush-mallow <i>Malacothamnus parishii</i>	PDMAL0Q0C0	None	None	GXQ	SX	1A

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Parish's checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	PDMAL110A3	None	Rare	G3T1	S1	1B.2
Parish's desert-thorn <i>Lycium parishii</i>	PDSOL0G0D0	None	None	G4	S1	2B.3
Parish's gooseberry <i>Ribes divaricatum</i> var. <i>parishii</i>	PDGRO020F3	None	None	G5TX	SX	1A
Parish's yampah <i>Perideridia parishii</i> ssp. <i>parishii</i>	PDAP11N0C2	None	None	G4T3T4	S2	2B.2
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	PDPGN040J2	None	None	G3T2	S2	1B.1
Peruvian dodder <i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	PDCUS01111	None	None	G5T4?	SH	2B.2
Plummer's mariposa-lily <i>Calochortus plummerae</i>	PMLIL0D150	None	None	G4	S4	4.2
pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	AMACD04010	None	None	G5	S3	SSC
prairie wedge grass <i>Sphenopholis obtusata</i>	PMPOA5T030	None	None	G5	S2	2B.2
Pringle's monardella <i>Monardella pringlei</i>	PDLAM180J0	None	None	GX	SX	1A
quino checkerspot butterfly <i>Euphydryas editha</i> <i>quino</i>	IILEPK405L	Endangered	None	G4G5T1T2	S1S2	
red-diamond rattlesnake <i>Crotalus ruber</i>	ARADE02090	None	None	G4	S3	SSC
Riverside fairy shrimp <i>Streptocephalus woottoni</i>	ICBRA07010	Endangered	None	G1G2	S2	
Riversidian Alluvial Fan Sage Scrub <i>Riversidian Alluvial Fan Sage Scrub</i>	CTT32720CA	None	None	G1	S1.1	
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	PDBRA1M114	None	None	G5T3	S3	4.3
salt marsh bird's-beak <i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
salt spring checkerbloom <i>Sidalcea neomexicana</i>	PDMAL110J0	None	None	G4	S2	2B.2
San Bernardino aster <i>Symphyotrichum defoliatum</i>	PDASTE80C0	None	None	G2	S2	1B.2
San Bernardino flying squirrel <i>Glaucomys oregonensis californicus</i>	AMAFB09021	None	None	G5T1T2	S1S2	SSC
San Bernardino kangaroo rat <i>Dipodomys merriami parvus</i>	AMAFD03143	Endangered	Endangered	G5T1	S1	SSC
San Bernardino Mountains owl's-clover <i>Castilleja lasiorhyncha</i>	PDSCR0D410	None	None	G2?	S2?	1B.2



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San Bernardino ragwort <i>Packera bernardina</i>	PDAST8H0E0	None	None	G2	S2	1B.2
San Bernardino ringneck snake <i>Diadophis punctatus modestus</i>	ARADB10015	None	None	G5T2T3	S2?	
San Diego banded gecko <i>Coleonyx variegatus abbotti</i>	ARACD01031	None	None	G5T5	S1S2	SSC
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	AMAEB03051	None	None	G5T3T4	S3S4	
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	AMAFF08041	None	None	G5T3T4	S3S4	SSC
San Gabriel slender salamander <i>Batrachoseps gabrieli</i>	AAAAD02110	None	None	G2G3	S2S3	
San Jacinto Valley crownscale <i>Atriplex coronata</i> var. <i>notatior</i>	PDCHE040C2	Endangered	None	G4T1	S1	1B.1
Santa Ana River woollystar <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
Santa Ana speckled dace <i>Rhinichthys osculus</i> ssp. <i>8</i>	AFCJB3705K	None	None	G5T1	S1	SSC
Santa Ana sucker <i>Catostomus santaanae</i>	AFCJC02190	Threatened	None	G1	S1	
silver-haired ivesia <i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	PDROS0X021	None	None	G2T2	S2	1B.2
slender-horned spineflower <i>Dodecahema leptoceras</i>	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
smooth tarplant <i>Centromadia pungens</i> ssp. <i>laevis</i>	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Sonoran maiden fern <i>Pelazoneuron puberulum</i> var. <i>sonorense</i>	PPTHE05192	None	None	G5T3	S2	2B.2
Southern California legless lizard <i>Anniella stebbinsi</i>	ARACC01060	None	None	G3	S3	SSC
southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	ABPBX91091	None	None	G5T3	S4	WL
Southern Coast Live Oak Riparian Forest <i>Southern Coast Live Oak Riparian Forest</i>	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest <i>Southern Cottonwood Willow Riparian Forest</i>	CTT61330CA	None	None	G3	S3.2	
southern grasshopper mouse <i>Onychomys torridus ramona</i>	AMAFF06022	None	None	G5T3	S3	SSC
southern jewelflower <i>Streptanthus campestris</i>	PDBRA2G0B0	None	None	G3	S3	1B.3
Southern Mixed Riparian Forest <i>Southern Mixed Riparian Forest</i>	CTT61340CA	None	None	G2	S2.1	

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southern mountain yellow-legged frog <i>Rana muscosa</i>	AAABH01330	Endangered	Endangered	G1	S2	WL
Southern Riparian Forest <i>Southern Riparian Forest</i>	CTT61300CA	None	None	G4	S4	
Southern Riparian Scrub <i>Southern Riparian Scrub</i>	CTT63300CA	None	None	G3	S3.2	
southern rubber boa <i>Charina umbratica</i>	ARADA01011	None	Threatened	G2G3	S2	
Southern Sycamore Alder Riparian Woodland <i>Southern Sycamore Alder Riparian Woodland</i>	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub <i>Southern Willow Scrub</i>	CTT63320CA	None	None	G3	S2.1	
southwestern willow flycatcher <i>Empidonax traillii extimus</i>	ABPAE33043	Endangered	Endangered	G5T2	S3	
steelhead - southern California DPS <i>Oncorhynchus mykiss irideus pop. 10</i>	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	AMAFD03100	Threatened	Threatened	G2	S3	
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S4	
thread-leaved brodiaea <i>Brodiaea filifolia</i>	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G1G2	S2	SSC
two-striped gartersnake <i>Thamnophis hammondi</i>	ARADB36160	None	None	G4	S3S4	SSC
western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011	None	None	G4G5T4	S3S4	SSC
western pond turtle <i>Emys marmorata</i>	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
western spadefoot <i>Spea hammondi</i>	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western yellow bat <i>Lasiurus xanthinus</i>	AMACC05070	None	None	G4G5	S3	SSC
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white cuckoo bee <i>Neolarra alba</i>	IIHYM81010	None	None	GH	SH	
white-bracted spineflower <i>Chorizanthe xanti var. leucotheca</i>	PDPGN040Z1	None	None	G4T3	S3	1B.2
white-eared pocket mouse <i>Perognathus alticola alticola</i>	AMAFD01081	None	None	G2TH	SH	SSC



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white-faced ibis <i>Plegadis chihi</i>	ABNGE02020	None	None	G5	S3S4	WL
white-tailed kite <i>Elanus leucurus</i>	ABNKC06010	None	None	G5	S3S4	FP
Wright's trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	PDAST9F031	None	None	G4T3	S1	2B.1
yellow warbler <i>Setophaga petechia</i>	ABPBX03010	None	None	G5	S3	SSC
yellow-breasted chat <i>Icteria virens</i>	ABPBX24010	None	None	G5	S4	SSC
Yucaipa onion <i>Allium marvinii</i>	PMLIL02330	None	None	G1	S1	1B.2

Record Count: 129

C3 CNPS Rare Plant Inventory









[CNPS Rare Plant Inventory](#)



Search Results







88 matches found. Click on scientific name for details









Search Criteria: Quad is one of [3411712:3411723:3411722:3411721:3411711:3311781:3311782:3311783:3411713]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	None	None	G5T2?	S2	1B.1		2001-01-01	 © 2011 Aaron E. Sims
Acanthoscyphus parishii var. parishii	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	None	None	G4? T3T4	S3S4	4.2	Yes	2007-04-05	 © 2014 Keir Morse
Allium howellii var. clokeyi	Mt. Pinos onion	Alliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4T2	S2	1B.3	Yes	1974-01-01	 © 2016 Keir Morse
Allium marvinii	Yucaipa onion	Alliaceae	perennial bulbiferous herb	Apr-May	None	None	G1	S1	1B.2	Yes	2001-01-01	 © 2013 Keir Morse
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2		1994-01-01	 © 2008 Aaron Schusteff
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	FE	CE	G1	S1	1B.1		1984-01-01	No Photo Available
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2		1974-01-01	No Photo Available
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2		1974-01-01	No Photo Available


<u><i>Astragalus hornii</i></u> <u>var. <i>hornii</i></u>	Horn's milk- vetch	Fabaceae	annual herb	May-Oct	None	None	GUT1	S1	1B.1		2006- 12-01	No Photo Available
<u><i>Astragalus pachypus</i></u> var. <u><i>jaegeri</i></u>	Jaeger's milk- vetch	Fabaceae	perennial shrub	Dec-Jun	None	None	G4T1	S1	1B.1	Yes	1994- 01-01	No Photo Available
<u><i>Atriplex coronata</i></u> var. <u><i>notatior</i></u>	San Jacinto Valley crownscale	Chenopodiaceae	annual herb	Apr-Aug	FE	None	G4T1	S1	1B.1	Yes	1988- 01-01	 © 2008 Larry Sward
<u><i>Atriplex serenana</i></u> var. <u><i>davidsonii</i></u>	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2		1994- 01-01	No Photo Available
<u><i>Berberis nevinsii</i></u>	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar- Jun	FE	CE	G1	S1	1B.1	Yes	1980- 01-01	No Photo Available
<u><i>Brodiaea filifolia</i></u>	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	Yes	1974- 01-01	 © 2016 Keir Morse
<u><i>Calochortus catalinae</i></u>	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar- Jun	None	None	G3G4	S3S4	4.2	Yes	1974- 01-01	No Photo Available
<u><i>Calochortus palmeri</i></u> var. <u><i>palmeri</i></u>	Palmer's mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3T2	S2	1B.2	Yes	1994- 01-01	No Photo Available
<u><i>Calochortus plummerae</i></u>	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	Yes	1994- 01-01	No Photo Available
<u><i>Calochortus simians</i></u>	La Panza mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.3	Yes	1980- 01-01	 © 2011 Aaron E. Sims
<u><i>Carex comosa</i></u>	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994- 01-01	 Dean Wm. Taylor 1997
<u><i>Castilleja cinerea</i></u>	ash-gray paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun-Aug	FT	None	G1G2	S1S2	1B.2	Yes	1974- 01-01	No Photo Available
<u><i>Castilleja lasiorhyncha</i></u>	San Bernardino Mountains owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	May-Aug	None	None	G2?	S2?	1B.2	Yes	1980- 01-01	No Photo Available
<u><i>Castilleja montigena</i></u>	Heckard's paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Aug	None	None	G3	S3	4.3	Yes	1974- 01-01	No Photo Available

<u>Caulanthus</u> <u>si_lans</u>	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar- May(Jun)	None	None	G4	S4	4.2	Yes	1974- 01-01	No Photo Available
<u>Centro_dia</u> <u>pungens</u> ssp. <u>laevis</u>	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.1	Yes	1994- 01-01	No Photo Available
<u>Chloropyron</u> <u>ma</u> <u>mu_riti</u> <u>m</u> ssp. <u>riti</u> <u>mu</u>	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May- Oct(Nov)	FE	CE	G4?T1	S1	1B.2		1974- 01-01	No Photo Available
<u>Chorizanth</u> <u>leptotheca</u>	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2		1994- 01-01	No Photo Available
<u>Chorizanth</u> <u>parryi</u> var. <u>parryi</u>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994- 01-01	 © 2012 Keir Morse
<u>Chorizanth</u> <u>xanti</u> var. <u>leucotheca</u>	white-bracted spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G4T3	S3	1B.2	Yes	1994- 01-01	No Photo Available
<u>Convolvulus</u> <u>si_lans</u>	small- flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994- 01-01	No Photo Available
<u>Cuscuta</u> <u>obtusiflora</u> var. <u>glandulosa</u>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011- 08-24	No Photo Available
<u>Deinandra</u> <u>paniculata</u>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr- Nov	None	None	G4	S4	4.2		2001- 01-01	No Photo Available
<u>Diplacus</u> <u>clevelandii</u>	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2		1980- 01-01	 © 2020 W. Juergen Schrenk
<u>Dodecahe</u> <u>a</u> <u>leptoceras</u>	slender- horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980- 01-01	No Photo Available
<u>Eriastrum</u> <u>densifolium</u> ssp. <u>sanctorum</u>	Santa Ana River woollystar	Polemoniaceae	perennial herb	Apr-Sep	FE	CE	G4T1	S1	1B.1	Yes	1980- 01-01	No Photo Available
<u>Eriophyllum</u> <u>lanatum</u> var. <u>obovatum</u>	southern Sierra woolly sunflower	Asteraceae	perennial herb	Jun-Jul	None	None	G5T4	S4	4.3	Yes	1974- 01-01	No Photo Available
<u>Erythranthe</u> <u>exigua</u>	San Bernardino Mountains monkeyflower	Phrymaceae	annual herb	May-Jul	None	None	G2	S2	1B.2		1974- 01-01	No Photo Available

<u><i>Fimbristylis thermalis</i></u>	hot springs fimbristylis	Cyperaceae	perennial rhizomatous herb	Jul-Sep	None	None	G4	S1S2	2B.2		1980- 01-01	No Photo Available
<u><i>Fraseria neglecta</i></u>	pine green- gentian	Gentianaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1980- 01-01	No Photo Available
<u><i>Fritillaria pinetorum</i></u>	pine fritillary	Liliaceae	perennial bulbiferous herb	May- Jul(Sep)	None	None	G4	S4	4.3	Yes	2001- 01-01	 © 2008 Steve Matson
<u><i>Galium californicum</i></u> <u>ssp. primum</u>	Alvin Meadow bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G5T2	S2	1B.2	Yes	1974- 01-01	 © 2013 Keir Morse
<u><i>Galium johnstonii</i></u>	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974- 01-01	 © 2015 Keir Morse
<u><i>Helianthus nuttallii</i></u> ssp. <u>parishii</u>	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	Yes	1974- 01-01	No Photo Available
<u><i>Heuchera caespitosa</i></u>	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	Yes	1974- 01-01	 © 2015 Keir Morse
<u><i>Heuchera parishii</i></u>	Parish's alumroot	Saxifragaceae	perennial rhizomatous herb	Jun-Aug	None	None	G3	S3	1B.3	Yes	1974- 01-01	 © 2015 Keir Morse
<u><i>Hordeum intercedens</i></u>	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994- 01-01	No Photo Available
<u><i>Horkelia cuneata</i></u> <u>var. puberula</u>	mesa horkelia	Rosaceae	perennial herb	Feb- Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001- 01-01	 © 2008 Tony Morosco
<u><i>Hulsea vestita</i></u> <u>ssp. parryi</u>	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	None	None	G5T4	S4	4.3	Yes	1994- 01-01	 © 2015 Keir Morse

<i>Imperata brevifolia</i>	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006- 12-26	 © 2020 Matt C. Berger
<i>Ivesia argyrocom a var. argyrocom a</i>	silver-haired ivesia	Rosaceae	perennial herb	Jun-Aug	None	None	G2T2	S2	1B.2	Yes	1974- 01-01	 © 2015 Keir Morse
<i>Juglans californica</i>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994- 01-01	 © 2020 Zoya Akulova
<i>Juncus duranii</i>	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974- 01-01	 © 2017 Keir Morse
<i>Lasthenia glabrata ssp. coulteri</i>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994- 01-01	 © 2013 Keir Morse
<i>Lepidium virginicum var. robinsonii</i>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994- 01-01	 © 2015 Keir Morse
<i>Lilium hum boldtii ssp. ocellatum</i>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar- Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980- 01-01	 © 2008 Thomas Stoughton
<i>Lilium parryi</i>	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	None	None	G3	S3	1B.2		1974- 01-01	 © 2009 Thomas Stoughton
<i>Lycium parishii</i>	Parish's desert-thorn	Solanaceae	perennial shrub	Mar-Apr	None	None	G4	S1	2B.3		1980- 01-01	No Photo Available
<i>Malacothamnus parishii</i>	Parish's bush- mallow	Malvaceae	perennial deciduous shrub	Jun-Jul	None	None	GXQ	SX	1A	Yes	1974- 01-01	 © 2021 Keir Morse

<u>Monardella</u> <u>cæantha</u> ssp. <u>hallii</u>	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974- 01-01	No Photo Available
<u>Monardella</u> <u>pringlei</u>	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974- 01-01	No Photo Available
<u>Muhlenbergia</u> <u>californica</u>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994- 01-01	No Photo Available
<u>Muilla coronata</u>	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar- Apr(May)	None	None	G3	S3	4.2		1988- 01-01	No Photo Available
<u>Nasturtium</u> <u>stenocarpa</u>	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994- 01-01	No Photo Available
<u>Nasturtium</u> <u>gambelii</u>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980- 01-01	No Photo Available
<u>Packera</u> <u>bernardina</u>	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974- 01-01	No Photo Available
<u>Pelazoneuron</u> <u>puberulum</u> var. <u>sonorense</u>	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994- 01-01	No Photo Available
<u>Perideridia</u> <u>parishii</u> ssp. <u>parishii</u>	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4	S2	2B.2		1974- 01-01	No Photo Available
<u>Phacelia</u> <u>havensis</u>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994- 01-01	No Photo Available
<u>Phacelia</u> <u>stellaris</u>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994- 01-01	No Photo Available
<u>Piperia</u> <u>leptopetala</u>	narrow- petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001- 01-01	No Photo Available
<u>Quercus</u> <u>mangelnii</u>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988- 01-01	No Photo Available
<u>Ribes</u> <u>divaricatum</u> var. <u>parishii</u>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988- 01-01	No Photo Available
<u>Rorippa</u> <u>coulteri</u>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar- Jul(Aug)	None	None	G4	S4	4.2		1974- 01-01	No Photo Available
<u>Rupertia rigida</u>	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974- 01-01	No Photo Available

<u><i>Schoenus nigricans</i></u>	black bog-rush	Cyperaceae	perennial herb	Aug-Sep	None	None	G4	S2	2B.2		2001-01-01	No Photo Available
<u><i>Senecio aphanactis</i></u>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
<u><i>Senecio astephanus</i></u>	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	None	None	G3	S3	4.3	Yes	2006-12-21	No Photo Available
<u><i>Sidalcea hickmanii</i> ssp. <i>parishii</i></u>	Parish's checkerbloom	Malvaceae	perennial herb	(May)Jun-Aug	None	CR	G3T1	S1	1B.2	Yes	1974-01-01	No Photo Available
<u><i>Sidalcea malviflora</i> ssp. <i>dolosa</i></u>	Bear Valley checkerbloom	Malvaceae	perennial herb	May-Aug	None	None	G5T2	S2	1B.2	Yes	2012-06-13	No Photo Available
<u><i>Sidalcea neomexicana</i></u>	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
<u><i>Sidalcea pedata</i></u>	bird-foot checkerbloom	Malvaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Sidothea caryophylloides</i></u>	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	None	None	G4	S4	4.3	Yes	1980-01-01	 ©2021 Keir Morse
<u><i>Sphenopholis obtusata</i></u>	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
<u><i>Streptanthus bernardinus</i></u>	Laguna Mountains jewelflower	Brassicaceae	perennial herb	May-Aug	None	None	G3G4	S3S4	4.3	Yes	1980-01-01	No Photo Available
<u><i>Streptanthus campestris</i></u>	southern jewelflower	Brassicaceae	perennial herb	(Apr)May-Jul	None	None	G3	S3	1B.3		1994-01-01	No Photo Available
<u><i>Symphyotrichum defoliatum</i></u>	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes	2004-01-01	No Photo Available
<u><i>Trichocoronis wrightii</i> var. <i>wrightii</i></u>	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1		1988-01-01	No Photo Available
<u><i>Trichostema m cranthum</i></u>	small-flowered bluecurls	Lamiaceae	annual herb	Jun-Sep	None	None	G4	S3	4.3		1974-01-01	No Photo Available
<u><i>Yucca brevifolia</i></u>						CC			CBR		2011-12-13	No Photo Available

Showing 1 to 88 of 88 entries

Appendix D

Cultural Resources Assessment (Public Version)

INLAND FEEDER-FOOTHILL PUMP STATION INTERTIE PROJECT

Cultural Resources Assessment

Prepared for

The Metropolitan Water District of Southern
California
700 North Alameda Street,
Los Angeles, California 90012

March 2024



INLAND FEEDER-FOOTHILL PUMP STATION INTERTIE PROJECT

Cultural Resources Assessment

Prepared for

The Metropolitan Water District of Southern
California
700 North Alameda Street,
Los Angeles, California 90012

March 2024

Prepared by

ESA
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Principal Investigator:

James Clark, M.A.

Author:

Claudia Camacho-Trejo, B.A.

Project Location:

Redlands (CA) USGS 7.5-minute Topographic Quad
Township 1 South, Range 3 West, Section 1

Acreage: Approx. 10.4 acres

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ACRONYMS AND OTHER ABBREVIATIONS

Acronym or Abbreviation	Definition
APE	Area of Potential Effects
B.P.	Before Present
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRHR	California Register of Historical Resources
ESA	Environmental Science Associates
Metropolitan	Metropolitan Water District of Southern California
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PRC	California Public Resources Code
SBVMWD	San Bernardino Valley Municipal Water District
SBVWCD	San Bernardino Valley Water Conservation District
SCCIC	South Central Coastal Information Center
USC	United States Code
USGS	U.S. Geological Survey

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INLAND FEEDER-FOOTHILL PUMP STATION INTERTIE PROJECT

Cultural Resources Assessment

Introduction

Environmental Science Associates (ESA) has been retained by The Metropolitan Water District of Southern California (Metropolitan) to conduct a cultural resources assessment for the Inland Feeder-Foothill Pump Station Intertie Project (proposed project). The Inland Feeder is owned and operated by Metropolitan and conveys approximately 1.7 billion gallons of water daily throughout its distribution system. Located in western San Bernardino and Riverside counties, the Inland Feeder is a 44-mile-long, 12-foot-diameter conveyance pipeline supporting reliable water delivery to Southern California. The primary purpose of the Inland Feeder is to connect State Water Project supplies to Metropolitan's Eastern Distribution System.

Project Personnel

ESA personnel involved in the preparation of this report are as follows: Principal Investigator James Clark, M.A., RPA; report author and archaeologist Claudia Camacho-Trejo, B.A.; archaeologist Ellen McIlvain, B.A.; and GIS specialist Chance Scott. Resumes of key personnel are included in **Appendix A**.

Project Location

The proposed project is located on an approximately 10-acre, triangular-shaped parcel immediately south of the intersection of Cone Camp Road and Greenspot Road in Highland, California (assessor's parcel numbers 1210381240000 and 1210381250000; referred to in this report as the project area). The site is generally accessible from State Route 210 (Foothill Freeway), located roughly 3.5 miles to the west. Local access to the project area is provided by Cone Camp Road, with an entrance gate immediately north and south of the Foothill Pump Station. The majority of the site is secured with chain-link perimeter fencing. The project area is bounded by Greenspot Road and residential development to the north, the Santa Ana River and open space to the south, and large-lot, single-family residences and open space to the east and west.

Metropolitan owns 5.47 acres of the project area and has easement rights to approximately 1 acre of the project area. The San Bernardino Valley Municipal Water District (SBVMWD) and the San Bernardino Valley Water Conservation District (SBVWCD) own the remainder of the project area. SBVWCD also owns the parcel directly south of Metropolitan's triangular-shaped fee property. Metropolitan will obtain an additional easement for the SBVWCD property located between the

Metropolitan Inland Feeder alignment and its fee property. The project location is shown in **Figure 1, Regional Location Map**. The proposed project facilities are shown in **Figure 2, Project Location Map**, and are situated within Section 1 of Township 1 South, Range 3 West of the Redlands (CA) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.

Project Description

To enhance Metropolitan's water delivery flexibility in response to drought conditions and limited State Water Project (SWP) allocations, Metropolitan is proposing two new pipeline connections between the Inland Feeder and the SBVMWD-Inland Feeder Interconnection Line 1 and SBVMWD's Foothill Pump Station (FPS).

Two new underground pipelines (supply connection and discharge connection), two underground vaults, four aboveground hydropneumatic surge tanks (HST), and associated appurtenant structures would be constructed in two stages as outlined below.

Stage 1 would include construction of the components mainly located within the existing fenced facility. This would include construction of an approximately 400-foot-long, 54-inch supply connection pipeline, an approximately 750-foot-long, 54-inch discharge connection pipeline, a 50-by-40-foot underground vault, four aboveground HSTs on concrete pads, and appurtenant structures. Additionally, the proposed project would include installation of a new fence-line along the western boundary of the project area to accommodate the supply and discharge connection components.

Stage 2 construction activities would occur along the southern portion of the project area, located mainly outside of the fenced facility, and would include a 45-by-40-foot underground vault, a portion of the 54-inch discharge connection pipeline, all associated appurtenant structures, and final connections to the existing Inland Feeder pipeline.

Most of the construction activities would occur during daylight hours, occasional nighttime construction activities may be required to shutdown the Inland Feeder and install the tie-in connection. Operation and maintenance activities at the FPS and Inland Feeder would be similar to existing conditions.

Area of Potential Effects

An Area of Potential Effects (APE) was established for the undertaking in accordance with Section 106 of the National Historic Preservation Act (NHPA). An APE is defined as:

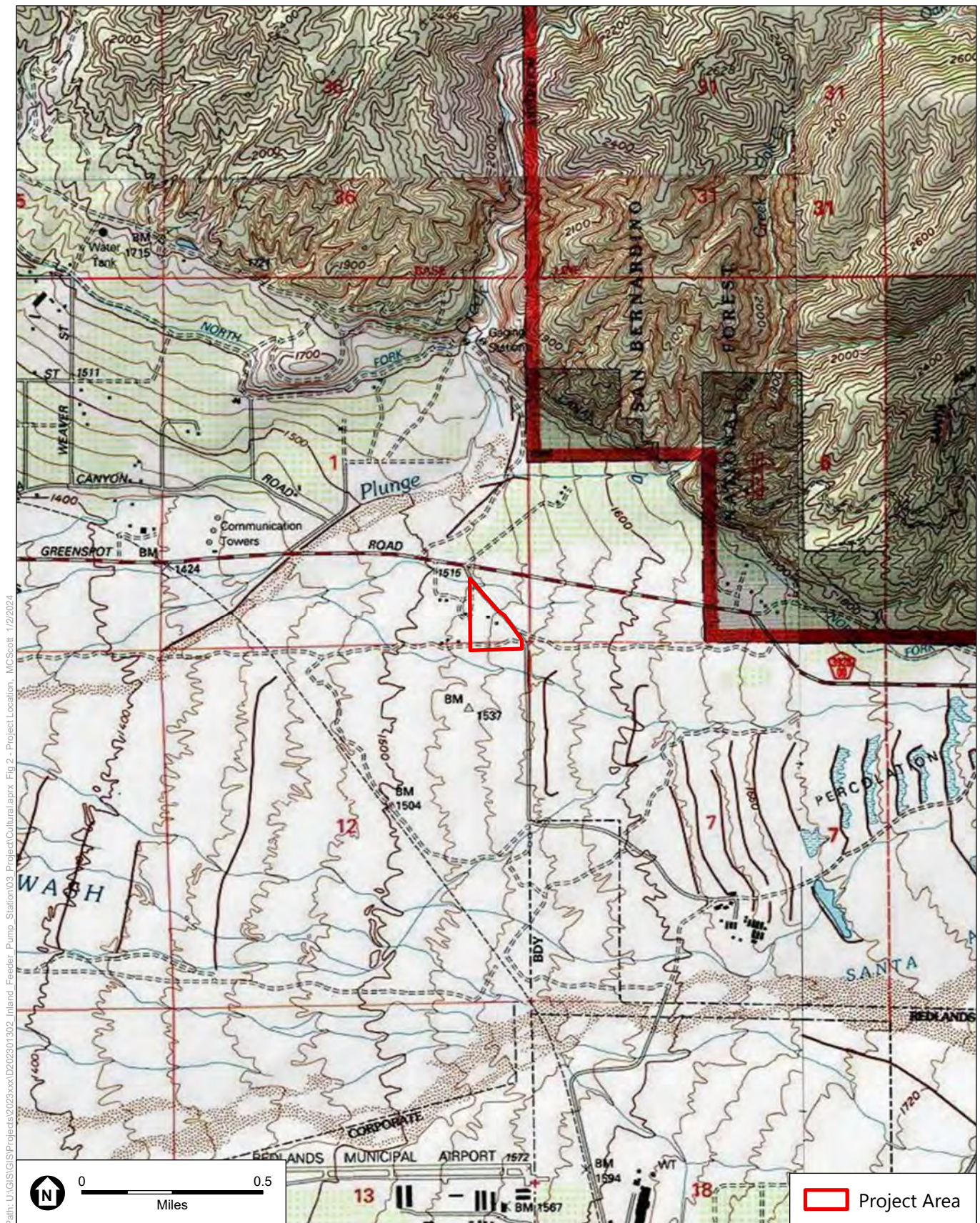
... the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]).



SOURCE: ESA, 2024

Inland Feeder Pump Station

Figure 1
Regional Location Map



SOURCE: ESA, 2024, USGS, 2023

Topo Quad: Redlands, 1980

Inland Feeder Pump Station

Figure 2
Project Location Map

The APE includes the area where project-related activities may directly or indirectly affect cultural resources. The total acreage for the horizontal APE is approximately 10 acres. The horizontal APE retains the level of anticipated disturbance. The vertical APE consists of the maximum depth of ground disturbance, which varies from 10 to 35 feet (**Figure 3, Area of Potential Effects [APE]**), given the nature of the undertaking, which would replace and enhance existing facilities or add underground pipelines, an indirect effects APE was not established.

Setting

Environmental Setting

The project site is located on the Peninsular and the south side of the Transverse Ranges border in the north and eastern part of the San Bernardino Valley. This section of San Bernardino Valley, known as Highland, comprises a slim belt of foothill slopes raised from the lowlands, skirting the southern base of the San Bernardino Mountains, and extending west over 10 miles from the gorge of the Santa Ana River. It comprises Quaternary-age young alluvial fan, channel, and wash deposits. Many different environments are recorded in the valley fill, including rivers, lakes, and broad alluvial fans. Alluvium, lake, playa, and terrace deposits at the surface range from the early Pleistocene to the Holocene (Morton and Miller 2006). Several fault systems are located within proximity of the project site.

Prehistoric Setting

The chronology of Southern California is typically divided into three general time periods: the Early Holocene (11,000 to 8,000 Before Present [B.P.]), the Middle Holocene (8,000 to 4,000 B.P.), and the Late Holocene (4,000 B.P. to A.D. 1769). This chronology is manifested in the archaeological record by particular artifacts and burial practices that indicate specific technologies, economic systems, trade networks, and other aspects of culture.

Early Holocene (11,000 to 8,000 B.P.)

While it is not certain when humans first came to California, their presence in Southern California by about 11,000 B.P. has been well documented. At Daisy Cave, on San Miguel Island, cultural remains have been radiocarbon dated to between 11,100 and 10,950 years B.P. (Byrd and Raab 2007). On the mainland, radiocarbon evidence confirms occupation of the Orange county and San Diego county coast by about 9,000 B.P., primarily in lagoon and river valley locations (Gallegos 2002). In western Riverside county, few Early Holocene sites are known to exist. One exception is site CA-RIV-2798, which contains deposits dating to as early as 8,580. B.P. (Grenda 1997). During the Early Holocene, the climate of Southern California became warmer and more arid and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Byrd and Raab 2007).

The primary Early Holocene cultural complex in coastal Southern California was the San Dieguito Complex, occurring between approximately 10,000 and 8,000 B.P. The people of the San Dieguito Complex inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Warren 1967). Leaf-shaped and large-stemmed projectile points, scraping tools, and crescentics are typical of San Dieguito Complex material culture.



SOURCE: ESA, 2024

Inland Feeder Pump Station

Figure 3
Area of Potential Effects

Middle Holocene (8,000 to 4,000 B.P.)

During the Middle Holocene, there is evidence for the processing of acorns for food and a shift toward a more generalized economy in coastal and inland Southern California. During this period, the processing of plant foods—particularly acorns—increased, a wider variety of animals were hunted, and trade with neighboring regions intensified (Byrd and Raab 2007).

The Middle Holocene La Jolla (8,000–4,000 B.P.) Complex is essentially a continuation of the San Dieguito Complex. La Jolla groups lived in chaparral zones or along the coast, often migrating between the two. Coastal settlement focused on the bays and estuaries of coastal Orange and San Diego counties. La Jolla peoples produced large, coarse stone tools, but also produced well-made projectile points and milling slabs. The La Jolla Complex represents a period of population growth and increasing social complexity, and it was also during this period that the first evidence of the exploitation of marine resources and the grinding of seeds for flour appears, as indicated by the abundance of millings in the archaeological record (Byrd and Raab 2007).

Contemporary with the La Jolla Complex, the Pauma Complex has been defined at coastal and adjacent inland sites in San Diego and Orange counties, as well as in inland Riverside county (True 1958). The Pauma Complex is similar in technology to the La Jolla Complex; however, evidence of coastal subsistence is absent from Pauma Complex sites (Moratto 1984). The Pauma and La Jolla Complexes may either be indicative of separate inland and coastal groups with similar subsistence and technological adaptations, or, alternatively, may represent inland and coastal phases of one group's seasonal rounds. The latter hypothesis is supported by the lack of hidden and deeply buried artifacts at Pauma sites, indicating that these sites may have been temporary camps for resource gathering and processing.

Late Holocene (4,000 B.P. to A.D. 1769)

During the Late Holocene, native populations of Southern California were becoming less mobile, and populations began to gather in small sedentary villages with satellite resource-gathering camps (Byrd and Raab 2007). Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab 2007).

Around 1,000 B.P., there was an episode of sustained drought, known as the Medieval Climatic Anomaly. While the effects of this environmental change on prehistoric populations are still debated, it likely led to changes in subsistence strategies to deal with the substantial stress on resources (Jones and Schwitalla 2008). In coastal Southern California, beginning before the Medieval Climatic Anomaly but possibly accelerated by it, conditions became drier, and many lagoons had been transformed into saltwater marshes. Because of this, populations abandoned coastal mesa and ridge tops to settle nearer to permanent freshwater resources (Gallegos 2002).

Trade intensity reached its zenith in the Late Holocene, with asphaltum (tar), seashells and steatite being traded from Southern California to the Great Basin. Major technological changes appeared as well, particularly with the advent of the bow and arrow, which largely replaced the use of the dart and atlatl (Byrd and Raab 2007). Small projectile points, ceramics, including Tizon

brownware pottery, and obsidian from Obsidian Butte (Imperial county), are all representative artifacts of the Late Holocene.

It has been postulated that as early as 3,500 B.P., a Takic-speaking people arrived in coastal Los Angeles and Orange counties, having migrated west from inland desert regions (Kroeber 1925; Warren 1968; Sutton 2009). By around 1,500 to 1,000 B.P., Takic language and cultures had spread to the south and inland to the east. These new arrivals, linguistically and culturally different from earlier coastal populations, may have brought new settlement and subsistence systems with them, along with other new cultural elements. This migration has been postulated as being a factor in several of the significant changes in material culture seen in the Late Holocene (such as the use of smaller projectile points and pottery), as well as the introduction of cremation as a burial practice.

The San Luis Rey (divided into San Luis Rey I [AD 1400 to 1750] and San Luis Rey II [AD 1750 to 1850]) cultures represented the Late Period in southwestern Riverside county, northern San Diego county, southern Los Angeles county, and the interior mountains of Orange county (Meighan 1954; Moratto 1984). San Luis Rey I village sites contain manos (hand stones), metates (grinding slabs), bedrock mortars, shell artifacts, and triangular arrow points. In addition to these features, San Luis Rey II sites are characterized by the presence of pottery, pictographs, and the cremation of the dead (Moratto 1984).

San Luis Rey settlement patterns in the upper San Luis Rey River drainage are typified by seasonally occupied lowland villages located in proximity to water sources, and highland villages occupied in the late summer and fall for acorn collection (True and Waugh 1982). However, settlement patterns within southwestern Riverside county are less well known. The available information, stemming primarily from survey data, indicates that four primary site types existed within the region during the Late Period: field camps, resource procurement locations, residential bases, and villages (Mason 1999). Resource procurement locations and field camps, the most common site types, contain a limited assemblage of artifacts and subsistence remains, primarily lithic debitage, some tools, fire affected rock, and small amounts of animal bones and charred seeds and nuts. This indicates that these types of sites were used primarily for focused activities and short-term occupancy.

Villages and residential bases, on the other hand, show evidence for long-term occupation by large groups of people. Villages were occupied year-round, while residential bases were occupied seasonally. Artifacts and features found at both village and residential bases, including large amounts of faunal and botanical remains, numerous high-quality tools, fire-affected rock, and anthrosols, indicate a wide range of activities (Mason 1999). Bedrock mortars point to the processing of seeds and acorns, and ceremonial activities are evidenced by the presence of pictographs, petroglyphs, and cupules within village sites.

Ethnographic setting

Maara'yam

At the time of contact, San Bernardino county was occupied by two groups, the Maara'yam (referred to as the Serrano in ethnographic literature) and the Cahuilla, though the area of the undertaking was largely occupied by the Maara'yam. The Maara'yam speak a dialect of the Takic family of the Uto-Aztecan language group. The extent of Maara'yam ancestral territory, which includes the mountain regions occupied by the Mountain Maara'yam and desert region occupied by the Desert Maara'yam, sometimes referred to as "Vanyume". Maara'yam ancestral territory includes the Antelope Valley to the west, the southwest Mojave Desert to the north, portions of the San Gabriel and San Bernardino Mountains at its center, the Inland Empire north of the city of Riverside to the south, and the city of Twentynine Palms to the east (San Manuel Band of Mission Indians 2022).

The Maara'yam lived in seasonal rounds and utilized resources in specific locations at different times of year, such as acorns, piñon nuts, yucca, mesquite, cacti, chia, deer, bighorn sheep, antelope, rabbits, small rodents, and birds (primarily quail) (Bean and Smith 1978). The Maara'yam used shell, bone, feathers, wood, stone, and plant fibers in the manufacture of their material culture, including basketry, blankets, and clothing. The Maara'yam, and many neighboring language groups, were organized into independent but interconnected village communities. These villages consisted of extended families residing in circular, dome-shaped structures made of willow frames covered with tule thatching, also known as a *kiic* (Bean and Smith 1978). Each of these villages consisted of one or more patrilineal clans that belonged to one of two exogamous moieties, either coyote or wildcat. The clan-based villages and the larger moiety groups maintained complex ceremonial, familial, and political relationships with one another (Gifford 1918; Strong 1929). Frequently, a number of communities would combine to celebrate important festivals, harvest cycles, and other ceremonial events, occasionally inviting distant, linguistically unrelated groups. The APE covers a broad area and was potentially known and visited by separate groups. However, the northern slopes of the San Bernardino Mountains appear to have fallen within the territory of the Apihavatum, a Maara'yam clan whose primary village was located at the present-day Arrowhead Hot Springs. The village, as well as the entire region, was known as *Apihanava t* or *Apuiva 't* (Strong 1929).

Historic Setting

Spanish Period (1769–1821)

The first European to cross into San Bernardino County was Pedro Fages, who entered the area in 1772. Fages was in pursuit of deserting Spanish soldiers. In 1774 and 1776, Juan Batista de Anza crossed into San Bernardino Valley. With the establishment of the Mission System in California, catastrophe was wrought on Native American communities, their social fabric, and lifeways. Much of the Maara'yam were removed from the Antelope Valley, the Mojave River region, and the Inland Empire to the San Gabriel Mission, established in 1771 (San Manuel Band of Mission Indians 2022). The first attempt by Spanish missionaries to settle the valley was short-lived and unsuccessful. In 1810, Father Dumetz set out from the San Gabriel Mission to establish a mission station adjacent to an Indian village on the Santa Ana River. The station, called Politana, was

largely destroyed by an earthquake in 1812. Shortly thereafter, the mission station was raided by non-local Indians and the settlement was abandoned (Scott 1976).

In 1819, Spanish Missionaries attempted to establish another mission outpost in the San Bernardino Valley. The outpost, called Estancia San Bernardino, was located in the area around what is presently the city of Redlands. The estancia's overseers compelled local Maara'yam and other indigenous communities to work as laborers building infrastructure to support the outpost (San Manuel Band of Mission Indians 2022). One such piece of infrastructure established via the labor of the Maara'yam was the Mill Creek Zanja, an irrigation system that allowed for the watering of the estancia's agricultural fields and served the local population for 60 years (Hertzberg 1976; San Manuel Band of Mission Indians 2022)

Mexican Period (1821–1846)

Mexico received its independence from Spain in 1821 and secularized the Spanish Missions in 1834. In 1842, Mexican settlers began to populate the eastern portion of the San Bernardino Valley. The same year, the Mexican Governor of California granted the majority of east San Bernardino Valley, including the Estancia San Bernardino, to Don Antonio Lugo's sons—Jose del Carmen, Jose Maria, and Vincente—along with their cousin, Diego Sepulveda. The land was used primarily for cattle ranching and was known as San Bernardino Rancho. The Lugos subsequently sold off parcels of the rancho to incoming Mormon settlers in the early 1850s, including the sale of the estancia in 1852 (Hertzberg 1976; Scott 1976).

American Period (1846–Present)

Mexico ceded California to the United States as part of the Treaty of Guadalupe Hidalgo, which ended the Mexican American War (1846–1848). The treaty also recognized rights of Mexican citizens to retain ownership of land granted to them by Spanish or Mexican authorities. However, the claimant was required to prove their right to the land before a patent was given. The process was lengthy and costly, and generally resulted in the claimant losing at least a portion of their land to attorney's fees and other costs associated with proving ownership (Starr 2007).

The Gold Rush (1849–1855) saw the first big influx of American settlers to California. In San Bernardino county, Mormon settlers entered the San Bernardino Valley in 1851 and purchased 37,000 acres from the Lugos for \$75,000. The Mormon pioneers established the town of San Bernardino, along with other settlements along the Santa Ana River, and created new irrigation systems such as the Tenny Ditch. In 1857, the Mormon colony was recalled to Salt Lake City and many of the settlers were forced to sell off their lands at a loss. New residents of the valley continued to divert water from the Santa Ana River and Mill Creek to expand local agricultural production (Hertzberg 1976). Over the next 20 years, as the population and agriculture increased, so did the scale of the region's irrigation systems.

With the influx of settlers came increased private land ownership within the ancestral lands of the Maara'yam as ranches, farms, mines, and logging camps were established in the region. As a result, the Maara'yam who still inhabited their ancestral lands were subject to violence by the new settlers and forced into marginal areas of the San Bernardino Valley (San Manuel Band of

Mission Indians 2022). In 1866, San Bernardino militia units began terrorizing Maara'yam in the Big Bear region, killing many, causing the local Maara'yam tribal head, Santos Manuel, to lead his *Yuhaaviatam* (People of the Pines) clan of 20–30 persons away from their mountain territory (San Manuel Band of Mission Indians 2022).

Following removal from their mountain homeland, the *Yuhaaviatam* inhabited the San Bernardino Valley along Warm Creek, and over a period of a decade settled in various areas such as what is presently the National Orange Show Event Center in San Bernardino, Meadowbrook Park, and Harlem Springs (San Manuel Band of Mission Indians 2022). In 1891, the *Yuhaaviatam* were removed to the San Manuel Reservation.

Regulatory Framework

There are various laws and regulations that require federal, state, and local agencies to consider the impact of a project on cultural resources. These laws and regulations specify a compliance process, outline the responsibilities of the different agencies involved in proposing the action, and establish the relationship between other relevant agencies.

Federal

Section 106 of the NHPA

Archaeological resources are protected through the NHPA of 1966, as amended (16 United States Code [USC] 470f), and its implementing regulation, Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an “undertaking” (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (National Register). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the National Register. Under the NHPA, a resource is considered significant if it meets the National Register listing criteria at 36 CFR 60.4.

National Register of Historic Places

The National Register was established by the NHPA of 1966, as “an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation’s historic resources and to indicate what properties should be considered for protection from destruction or impairment” (36 CFR 60.2). The National Register recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the National Register is considered “historic property” under Section 106 of the NHPA.

To be eligible for listing in the National Register, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

- A. Are associated with events that have made a significant contribution to the broad patterns of our history;
- B. Are associated with the lives of persons significant in our past;
- C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as “the ability of a property to convey its significance.” The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the National Register unless they meet one of the Criteria Considerations (a–g) below, in addition to meeting at least one of the four significance criteria A–D above, and retaining integrity (36 CFR 60.4):

- a. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- b. A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- c. A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.
- d. A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- e. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- f. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- g. A property achieving significance within the past 50 years if it is of exceptional importance.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the principal statute governing environmental review of projects occurring in the state and is codified at California Public Resources Code (PRC) Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The CEQA Guidelines (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the CEQA Guidelines apply. If an archaeological site does not meet the criteria for a historical resource contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be

made to permit any or all of these resources to be preserved in place (Section 21083.1[a]). If preservation in place is not feasible, mitigation measures shall be required. The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5[c][4]).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5(a). Substantial adverse change is defined as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired” (CEQA Guidelines Section 15064.5[b][1]). According to CEQA Guidelines Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

- A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
- B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- C. Convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Grimmer 2017) is considered to have mitigated its impacts to historical resources to a less-than-significant level (CEQA Guidelines Section 15064.5[b][3]).

California Register of Historical Resources

The CRHR is “an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1[a]). The criteria for eligibility for the CRHR are based upon National Register of Historic Places (NRHP) criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
2. Is associated with the lives of persons important in our past.

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined eligible for the NRHP.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include the following:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register).
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the California NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

PRC Section 5097.98, as amended by Assembly Bill 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner

and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the landowner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Archival Research

South Central Coastal Information Center Records Search

On December 15, 2023, ESA staff conducted a records search for the proposed project through the California Historical Resources Information System South Central Coastal Information Center (SCCIC), housed at California State University, Fullerton. The records search included a review of all recorded archaeological resources and previous studies within the APE and general vicinity.

Previous Cultural Resources Investigations

According to the search results, 13 cultural resources studies have been conducted within a 0.5-mile radius of the APE (as shown in **Table 1**). Approximately 50 percent of the searched radius was covered in these previous studies. Out of these 13 studies, two of them (SB-05816, and 07459) overlap nearly 90 percent of the APE, including adjacent roads.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

SCICC (SB-)	Author	Title	Year
01566	Brock, James, John F. Elliott, Benjamin Resnick, And William A. Sawyer	Santa Ana River Upstream Alternatives, Cultural Resources Survey	1986
01754	Hatheway, Roger G.	Historical And Architectural Evaluation, Seven Oaks Dam Bridges	1987
01783	Hornbeck, David And Howard Botts	Seven Oaks Dam Project: Water Systems	1988
02652	Mckenna, Jeanette A.	Results Of An Archaeological Monitoring Program For The Greenspot Road Pipeline Along Greenspot Road, East Highlands, San Bernardino County, California	1992
02685	Mckenna, Jeanette A. And Leta J. Franklin	Archaeological Testing And Mitigation Of Adverse Impacts At Ca-Sbr-7166h, An Historic Habitation Site, East Highlands, San Bernardino County, California	1992
02853	Foster, John M., James J. Schmidt, Carmen A. Weber, Gwendolyn R. Romani, And Roberta S. Greenwood	Cultural Resource Investigation: Inland Feeder Project, MWD Of Southern Ca	1991
04067	Tang, Bai Tom	APN: 297-021-04, -05 & The Southern Portion Of 097-021-12, Due Diligence/Feasibility Investigation, City Of Highland, San Bernardino County, Ca. 3PP	2004
04831	Brunzell, David and Curt Duke	Cultural Resource Assessment: Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, San Bernardino County, California.	2005

SCICC (SB-)	Author	Title	Year
05816	Schmidt, Tiffany A. And Janis K. Offerman	East Branch Extension Phase II Archaeological Survey Report, San Bernardino County, California.	2007
06035	Goodwin, Riordan	Archaeological Survey Report for The Greenspot S-Curve Realignment, City Of Highland, San Bernardino County, California.	2008
07459	Tang, Bai "Tom", Terri Jacquemain, Harry Quinn, Daniel Ballester, And Nina Gallardo	Identification and Evaluation of Historic Properties: Enhanced Recharge Facilities for Santa Ana River Water Diverted by Valley District and Western under Water Rights Permit Project (Phase 1 & 2), Cities of Highland and Redlands, San Bernardino County, California.	2012
07569	Mcdougall, Dennis P. And Jill A. Onken	Inland Feeder Pipeline Project: Final Synthetic Report of Archaeological Findings, San Bernardino County, California.	2003
08040	Tang, Bai "Tom" And Michael Hogan	Historical/Archaeological Resources Survey Report Tentative Tract Map no. 18893, City of Highland, San Bernardino County, California	2015

NOTES: APE = area of potential effects; APN = assessor's parcel number, SCCIC = South Central Coastal Information Center.
SOURCE: SCCIC 2023.

Previously Recorded Cultural Resources

The records search results indicate that a total of 18 cultural resources have been recorded within the general vicinity of the APE (Table 2). Of the 18 resources, 8 are historic-period archaeological sites (P-36-005526, 006068, 010184, 033121, 033122, 033123, 033124, and 060194); two are historic isolates (P-36-023403 and 024382); and eight historic built-in structures (P-36-006847, 006848, 007051, 007165, 007215, 023404, and 024384).

TABLE 2
PREVIOUSLY RECORDED CULTURAL RESOURCES

P Number (P-36-)	Permanent Trinomial (CASBR-)	Description	Dates Recorded	NRHP/ CRHR Eligibility
005526	005526H	Historic site: building foundation and refuse scatter	1985; 1987	Unknown
006068	006068H	Historic site: pipes, cans, and domestic debris	1987; 2018	Not Evaluated
006847	006847H	Historic site: (Structure, Site) segment of the historic alignment of the Southern California Railroad	1987; 2018	Ineligible
006848	006848H	Historic site: irrigation ditch	1990; 1992; 1993; 2006; 2010; 2017	Ineligible
007051	007051H	Historic Structure: Irrigation system	1990; 1994; 2003	Unknown
007165	007165H	Historic Site: Plunge Creek Bridge	1996; 1987	Ineligible
007215	007215h	Historic Site: road, orchard, irrigation canal and standpipe irrigation system.	1992	Unknown
010184	010184H	Historic Site: trash scatter	1999	Unknown
010681	010681H	Historic Site: building foundations	2002	Ineligible
023403	—	Historic Isolate: wooden and metal objects	2009	Unknown
023404	014789H	Historic Structure: pipe culvert	2009	Ineligible
024382	—	Historic Isolate	2012	Unknown

P Number (P-36-)	Permanent Trinomial (CASBR-)	Description	Dates Recorded	NRHP/ CRHR Eligibility
024384	—	Historic Site: Water Conveyance	2018	Ineligible
033121	033121H	Historic Site: Refuse scatter	2018	Not Evaluated
033122	033122H	Historic Site: Refuse scatter	2018	Not Evaluated
033123	033123H	Historic Site: Refuse scatter	2018	Not Evaluated
033124	033124H	Historic Site: Refuse scatter	2018	Unknown
060194	—	Historic: Porcelain fragments and a license plate	1984	Unknown

Native American Heritage Commission

The Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File that contains information about sites that hold a traditional, cultural, or religious value to the Native American community. On December 14, 2023, a request was made to the NAHC for a Sacred Land File search for the APE. On January 5, 2024, the NAHC responded to the request. The NAHC provided a list of tribal contacts and recommended that they be contacted to obtain additional information. The Sacred Lands File search has been included in **(Appendix B-Confidential)**.

Historic Maps and Aerial Photographs

ESA examined historic maps and aerial photographs to discern historical information about the APE and to contribute to an assessment of the APE's archaeological sensitivity. Available maps include the 1954 and 2012 Redlands USGS 7.5-minute topographic quadrangle (TopoView 2023). Historic aerial photographs were available for the years 1938, 1959, 1980, 2002, 2005, 2010, 2013, and 2020 (Historicaerials.com 2023); 1933, 1952, 1954, and 1966, (FrameFinder 2023); 1995, 2002, 2003, 2005, 2018, and 2023 (Google Earth Pro 2024).

The 1901 topographic map depicts Greenspot Road and Cone Camp Road (unnamed) adjacent to the APE, although these are shown as unknown. A review of the 1954 topographic map shows the area is primarily undeveloped, with only two buildings in the southwest section of the APE. On the next available topographic map from 2012, no buildings near Cone Camp Road are visible.

The 1938 aerial photograph displays a historic-era resource within the APE. The northwest area of the APE was undeveloped. By 1959, more buildings (features) could be observed as part of the historic-era resource within the APE while the rest of the area remained the same. After 1966, housing growth can be observed on the east side of the APE. The 1995 aerial is missing features present in the 1966 aerial, indicating historic-era resources were removed sometime between the two images were taken. In the 2002 aerial image, it is evident that the last poultry farm standing within the southern portion of APE is no longer present. After 2005, the APE was turned into a staging area for the Inland Feeder construction. In the northeast section of the APE, the

SBVMWD Foothill Pump Station building is visible in aerial imagery. From 2006 to 2023, the south area remained a graded empty lot while the north section of the APE presented changes, including a pipeline running north to south, the Foothill Pump Station structure, a chain-link fence surrounding the APE and also acting as a divider between the north and south of the APE, and a short, paved road that leads to a graded parking area.

Geologic Map Review

The project area is entirely mapped as Holocene-aged Quaternary alluvial (Qa) “consisting of “sand and clay of valley areas, covered with gray clay soil, including “alluvial pebbly sand adjacent to mountain terranes” (Dibblee and Minch, 2004). Surficial sediment consists of alluvial sediments composed of gravel and sand. The vicinity of the project site also includes Young Alluvial Wash Deposits (Qw), Young Axial-Channel Deposits (Qya3 and Qya4), and artificial fill adjacent to or near the improvements (HDR Engineering, 2022; Morton and Matti, 2001).

Geotechnical Report Review

The geotechnical study was completed by HDR Engineering (2022). They conducted a geophysical survey by their subcontractors (Atlas) on June 24, 2022. In addition to the survey, three test pits were excavated to the maximum depth of 15 feet below ground surface to study the conditions of the project site. The first 5 to 11 feet of the test pit units showed artificial fill, alluvium soils were found beneath the artificial fill and consist of poorly graded sand mixed with gravel, cobbles, and boulders up to 49.6 inches in diameter. (HDR Engineering 2022).

Cultural Resources Survey

Methods

On December 20, 2023, ESA archaeologists Claudia Camacho-Trejo, B.A. and Ellen McIlvain, B.A. conducted an intensive pedestrian survey of the APE. The purpose of the survey was to identify archaeological and built environment resources within the APE. The survey methodology varied depending on the landforms encountered within the APE. Areas with flat terrain and visible ground surfaces were subject to systematic pedestrian surveys with transects spaced between 5 and 15 meters apart (approximately 15 to 45 feet). Areas with limited ground visibility, such as densely vegetated areas, underwent opportunistic surveys, where areas with some ground visibilities were targeted. The APE was verified using the ArcGIS Field Maps application on an Android phone. Photo logs, field observations, and results were documented using Survey 123 with a Samsung 10S device. No subsurface investigation was performed during the pedestrian survey.

Results

No cultural resources were discovered during the survey. The APE is a relatively flat area with SBVMWD Foothill Pump Station’s modern pump structure on the northeast area surrounded by chain-link fences and gates subdividing the area. Soils generally consisted of graded sandy gravel with cobbles, including native vegetation and several trees. However, one modern feature, an F-shaped poured concrete foundation, was documented within the APE. The following paragraphs

describe the results of the survey and the resources encountered during the survey. No artifacts were observed during the survey.

In the northern part of the APE, 5-meter transects were conducted along the chain-link fence with good ground visibility of around 60 to 70 percent. Elsewhere in northern part of the APE, due to a concentration of granite boulders, the Foothill Pump Station building, a depression near a pipeline area, and a graded parking lot area, ground visibility was low (about 10 to 20 percent); an opportunistic survey was conducted in this section of the APE (**Figures 4–6**).

The middle portion of the APE was surveyed using 5-meter transects; ground visibility was excellent (around 80 to 90 percent) due to previous grading and compaction of the area. The soil was composed of imported gravel and silty sand. This section of the APE was highly disturbed and previously used as a parking area, as two track marks are visible all over the area.

Figure 4. General View along Northwest Chain-Link Fence, View NW



SOURCE: Photo by Environmental Science Associates

Figure 5. General View of Depression of the Discharged Pipeline on the Northwest Section of the APE, View NW



SOURCE: Photo by Environmental Science Associates

Figure 6. General View of Granite Boulders, Foothill Pump Station Building and a Plastic Pipe Feature, View SE



SOURCE: Photo by Environmental Science Associates

On the southeast area of APE, an F-shaped concrete foundation was encountered. The foundation measured about 157.2 inches long and 53 inches wide. Based on aerial imagery, the foundation was built between 2012 and 2015 (Historicaerials 2023; Google Earth Pro 2024). This F-shaped concrete foundation was made for a trailer truck previously stationed in this area of the APE. Based on the aerial imagery, it is likely that this section of the APE was previously used as a parking location for trucks and trailers. The F-shaped concrete foundation was in excellent condition, with some spray paint markings and a small wood frame on the edges of the foundation (**Figures 7–8**).

Outside the gated facility, within the southern portion of the project area, visibility was poor (less than 10 percent) in the areas with overgrown vegetation, oversized granite boulders mixed in with modern trash debris; therefore, an opportunistic survey was conducted. Two existing, unpaved two track roads cross west to east in this portion of the APE (**Figures 9–11**).

Figure 7. General View of F-Shape Poured Cement Foundation, View SW



SOURCE: Photo by Environmental Science Associates

Figure 8. Overview F-Shape Poured Cement Foundation, View SW



SOURCE: Photo by Environmental Science Associates

Figure 9. General View of the SOUTH portion of the APE, Granite Boulder and Distribution Pole, View SW



SOURCE: Photo by Environmental Science Associates

Figure 10. General View of Two Track Road Transecting the South APE, View SE



SOURCE: Photo by Environmental Science Associates

Figure 11. Overview of APE, View N



SOURCE: Photo by Environmental Science Associates

Archaeological Sensitivity Assessment

Prehistoric Archaeological Analysis

The potential for prehistoric archaeological deposits is predicated on (1) proximity to permanent or semi-permanent water sources capable of supporting long-term or seasonal occupation of the area; and (2) flat or gently sloped topography conducive to human habitation. Previous research conducted elsewhere in California has indicated that the presence of buried archaeological sites is positively correlated with proximity to water, as well as flat to gently sloped landforms.

Review of the geologic map indicates that the APE is composed of Quaternary-age young alluvial fan, channel, and wash deposits. The review of the geotechnical report also shows a historic disturbance layer of 3 to 5 feet, and an artificial fill composed primarily of sand and gravel to at least 5 to 15 feet below ground surface.

The APE is located on a flat surface, and the closest body of water to the APE (per a review of historical topographic maps) is the Santa Ana River, located approximately 1.12 miles southeast of the APE. The NAHC indicated that the Sacred Lands File search yielded positive results. Based on all these factors, the potential for yielding surficial and not deeply buried prehistoric archaeological resources within the APE is considered to be low to moderate.

Historic Archaeological Analysis

The records search identified 19 historic-period archaeological sites (consisting of remains of irrigation features, concrete foundations/structures, refuse deposits, and bridges) recorded within the general vicinity. The number of historic-period archaeological sites, and historic use of the area within the APE and vicinity, indicate a low to moderate potential of encountering buried historic archaeological resources. The construction of the Inland Feeder conveyance system by the Metropolitan Water District began in 1997 and was completed in 2007. Before the proposed project of Inland Feeder Foothill Pump Station Intertie, the Foothill Pump Station was built in early 2005. Given previous construction, the APE was previously graded and disturbed by the construction of the Inland Feeder conveyance system and the Foothill Pump Station within the APE.

A total of two historic architectural resources are recorded within the general vicinity the APE; however, none of these resources are located within or immediately adjacent to the APE. Therefore, no impacts to historic architectural resources would occur as a result of the proposed project.

Conclusions and Recommendations

No cultural resources were identified as a result of the survey. As such, the proposed project would result in **No Historic Properties Affected** under Section 106 of the National Register and California Register under CEQA and the Project would not result in a direct impact to historical resources.

As a result of the archival research and cultural resources survey conducted for the proposed project, no cultural resources have been identified within the APE. However, the likelihood for encountering subsurface archaeological deposits within the APE during project construction is low to moderate based on the amount of disturbance and fill at the site. In the event that subsurface archaeological deposits are encountered during project implementation, they may qualify as historical resources or unique archaeological resources pursuant to CEQA and may be subject to significant impacts. As such, the following recommended measures for the retention of a qualified archaeologist, cultural resources sensitivity training, construction monitoring, and inadvertent discovery protocols are provided below. Since no cultural resources were identified within the APE, and with implementation of the recommended measures below, the Project would result in less than significant impacts related to archaeological resources.

Recommendations

Worker Archaeological Awareness Training. Because of the potential for the proposed project to encounter archaeological resources, a qualified archaeologist shall conduct worker training prior to the initiation for ground-disturbing activities to inform workers of the types of resources that may be encountered and advise them of the proper handling of such resources.

Inadvertent Discoveries. If archaeological resources are encountered at the project site, the Contractor shall not disturb the resources and shall immediately cease all work within 50 feet of the discovery, notify the Engineer, and protect the discovery area, as directed by the Engineer. The Engineer, with the qualified archaeologist, shall make a decision of validity of the discovery and designate an area surrounding the discovery as a restricted area. The Contractor shall not enter or work in the restricted area until the Engineer provides written authorization.

Should the resource be determined to be potentially significant, a treatment plan shall be prepared. The plan shall be implemented by the qualified archaeologist in consultation with the Metropolitan to provide for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The treatment plan shall include measures regarding the curation of the recovered resources, which may include curation at a public, non-profit institution with a research interest in the materials, if such an institution agrees to accept the material.

Human Remains

In the event that human remains are discovered during excavation/construction activity, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5(e), and Public Resources Code (PRC) Section 5097.98 will apply. The Contractor shall notify Metropolitan at once and not enter or work in the restricted area until the Engineer provides written authorization.

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Appendix A

Personnel Qualifications



Claudia Camacho-Trejo

Cultural Resources Specialist III



EDUCATION

MA(In Progress),
Anthropology, California
State University, Los
Angeles

BA, Anthropology,
California State
University, Los Angeles

AA, Behavioral Studies,
East Los Angeles
Community College

6 YEARS' EXPERIENCE

PROFESSIONAL AFFILIATIONS

Archaeological Institute of
American, since 2016.

Society for California
Archaeology, since 2016.

Golden Key International
Honour Society, California
State L.A. inducted 2015

Lambda Alpha
Anthropological Honor
Society, California State
L.A. inducted 2014

Society of American
Archaeology since 2014

Claudia Camacho-Trejo is an archaeologist with eleven years of experience throughout Eastern Sierra Nevada, the Mojave Desert, the California South Coast, and Mexico. Claudia had focused as a cultural resource specialist the last six years of her career, working as an author and co-author of California Environmental Quality Act (CEQA)-level technical reports, Environmental Impact Report (EIR) sections, Initial Study (IS) sections, archaeological peer reviews, archaeological monitoring reports, and reports under Bureau Land Management requirements. She has performed archaeological excavation and testing, site recordation, laboratory analysis, pedestrian surveys, and construction monitoring. She has experience requesting records searches through several California Historical Resources Information Systems-Information Centers. In addition to her archaeological background, Claudia has coauthored paleo reports.

Relevant Experience

Ten West Link Transmission Line Project, Riverside County, CA and La Paz County, AZ. *Senior Cultural Resources Specialist (November 2022 – Present).* Environmental Science Associates (ESA) was retained by Delaney Colorado River Transmission LLC to provide archaeological monitoring during construction as well as perform archaeological and historic architectural resource documentation and evaluation in compliance with Section 106, NEPA, and CEQA requirements. The project involves the construction of 125 miles of high voltage electrical transmission line from Tonopah, AZ, to Blythe, CA. The corridor spans numerous federal, state, and private jurisdictions with varied cultural resource requirements necessitating sophisticated tracking and implementation of numerous agency jurisdiction-specific mitigations. The project passes through many Abandoned Mine Land areas and ESA's team has identified, documented, and evaluated a wide array of historic mining and mining related features such as prospects, cairns and claim markers, roads and trails, mine openings, can and other refuse scatters, and other mining related infrastructure. The project footprint also encompasses culturally sensitive areas important to multiple tribes including CRIT. ESAs providing ESA's team is working alongside the construction contractor, several tribes including CRIT monitors, and with the BLM in two states. Claudia was a lithic specialist who conducted a macroscopic lithic analysis on stone tools artifacts recovered during monitoring and excavation activities. She also curated part of the lithics collection at the Pasadena Lab and co-authored parts of the report.

The San Manuel Ancestral Land Exchange, San Bernardino County, CA. *Cultural Resources Specialist (May 2022 – Present).* Yuhaaviatam of San Manuel Nation, a Federally recognized Indian Tribe, formerly known as the San Manuel Band of Mission Indians and the Forest Service, United States Department Of Agriculture entered into an Agreement to Initiate the San Manuel Ancestral Land Exchange. Environmental Science Associates (ESA) prepared a cultural Resources Assessment in support of the Land Exchange. The study was conducted in compliance with Section 106 of the National Historic Preservation Act



Claudia Camacho-Trejo (Continued)

Cultural Resources Specialist

(NHPA) of 1966 and considered a 2,997-acre study area, comprised of the combined six privately owned Non-Federal Parcels and two USFS-administered Federally Parcels. Claudia authored portions of the reports and conducted a heritage record search.

Caltrans-ROW Project, Olancho, CA. *Archaeologist*. Claudia performed archaeological screening from dewatering dwell spoils to recover cultural artifacts. This task was conducted directly with the tribal monitors and ESA supervisors to ensure the protection of culturally sensitive areas and artifact density areas identified during Phase I & II testing.

Material Culture Consulting, Pomona, CA. *Archaeologist/Project Analyst*. Claudia conducted pedestrian surveys for SCE pole replacement on public and private lands as an archaeologist. She also performed background research for archaeological studies, including processing records searches. Additional duties included conducting archaeological desktop reviews, including background data, project information, archaeological sensitivity, land ownership, and preparing DPR reports. Claudia then performed cultural resources monitoring during ground-disturbing activities. As a project analyst, Claudia provided Administrative and operational support for Operations and Maintenance Projects with extensive use of Excel, EHSYNC, and Google Earth. With a focus on archaeology, she collaborated with a team of subject matter experts regarding project status, assignment status, pre-construction and post-construction status, and other project issues as appropriate. She compiled and issued Environmental Clearance Documents to clients, project management, and field staff. Claudia prepared project information (e.g., project maps using GIS, Google Earth, or a similar program, and project description) for agency consultation and approvals. She also performed desktop clearances related to deteriorated pole replacements, Master Special Use Permit pole replacements on U.S. Forest Service Land, and private lands for Southern California Edison.

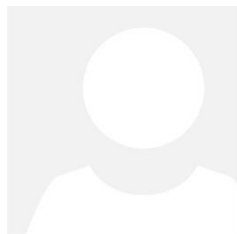
SWCA, Pasadena, CA. *Archaeologist*. Claudia conducted archaeological pedestrian surveys, construction monitoring, and other field or office tasks. She also prepared DPRs, technical reports and organized the company's artifacts collections being deaccessioned to an Orange County Museum.

California State University, Los Angeles Los Angeles, CA. *Graduate Thesis Reviewer*. Claudia conducted thesis examination meetings for Master degree candidates from all fields of study. She met with graduate students on an individual basis to review theses, provide direction regarding format requirements and academic standards, answer questions, and communicate policy guidelines. Claudia recorded the outcome of student thesis appointments, progress and dates of completion and maintained accurate and complete records of each thesis meeting with students to demonstrate progress. She would also communicate with students, to provide thesis related information, review select thesis pages, deadlines, and/or answer questions. She managed all activities related to the completion, submission and reporting and oversaw the thesis publication process with ProQuest and the distribution of hard copies to the academic units.



James J. Clark

Senior Archaeologist



EDUCATION

MA, Museum Studies, New York University

BA, Ancient Near Eastern Civilizations (Egyptology), Minor, Anthropology, University of California Los Angeles

24 YEARS' EXPERIENCE

CERTIFICATIONS/REGISTRATION

Registered Professional Archaeologist, #16586

Meets Secretary of the Interior's PQS for Archaeology

United States Department of Agriculture Organics Act Permit, Principal Investigator

California BLM Permit, Principal Investigator

Meets Caltrans PQS for Principal Investigator

PROFESSIONAL AFFILIATIONS

Society of California Archaeology

Society of Black Archaeologists

James Clark is a Senior Archaeologist with over two decades of experience working in California, as well as the U.S. Northeast and Southeast. James provides technical oversight, expertise, and quality assurance for cultural resources support services, including survey, testing, data recovery, and monitoring projects. He has conducted numerous cultural resource studies for local, state, and federal agencies, as well as private utility companies and corporate entities pursuant to Sections 106 and 110 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act, and the California Environmental Quality Act. James is experienced in Native American coordination and compliance with California Assembly Bill 52. He is also experienced in archaeological curation and collections rehabilitation (36 CFR 79) and is proficient in several collections management and database applications including Gallery Systems/The Museum System, Microsoft Access, and SQL.

James meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (i.e., 36 Code of Federal Regulations Part 61) and is a Registered Professional Archaeologist. Further, he also meets the California Department of Transportation (Caltrans) Professionally Qualified Staff standards at the level of Principal Investigator and is also named on permits to perform archaeological studies for a number of federal, state, and local agencies as well as Native American tribes.

Relevant Experience

Southern California Edison, Rush Creek Hydroelectric System FERC Relicensing Project #1039, Inyo National Forest, Mono County, CA. *Project Manager.*

James coordinated the implementation of the archival research and fieldwork components of the project's Technical Study Plans for archaeological and built environment resources within the proposed APE for the Undertaking. Archival research entailed record searches at the Eastern Information Center and the Inyo National Forest office and an examination of germane documents from various repositories and on-line databases; fieldwork involved an intensive Class III inventory of the project APE. James also participated in project stakeholder meetings, as well as coordinated the preparation of separate Technical Study Reports (TSRs) which included preliminary NRHP eligibility recommendations for resources identified within the APE.

Southern California Edison, Ivanpah-Control Transmission Line Rating Remediation (TLRR) 15 Sites National Register of Historic Places and California Register of Historic Resources Eligibility Evaluations, Inyo County, CA. *Principal Investigator.*

James coordinated the implementation of the project research design for the testing of 15 sites (prehistoric, historical period, and multicomponent) for NRHP and CRHR eligibility. In addition to coordinating testing fieldwork, he also supervised artifact analysis (including obsidian hydration and sourcing) and performed senior review of the technical report and its Department of Parks and Recreation 523 series site form appendix.



James J. Clark (Continued)

Senior Archaeologist

Naval Facilities Engineering Command (NAVFAC) SW Division, Post-Fire Archeological Survey of 2,645 Acres, Naval Weapons Station Seal Beach, Detachment Fallbrook, CA. *Principal Investigator.* This project entailed NRHP Section 110 Class III Inventory of 2,645 acres at Naval Weapons Station Seal Beach, Detachment Fallbrook. James coordinated, co-authored, and provided senior review the project work plan, research design, safety plan, technical report, and Department of Parks and Recreation 523 series site forms. James also supervised the fieldwork phase of the project.

National Park Service, Scorpion Pier Replacement Project, Santa Cruz Island, Channel Island National Park, Santa Barbara County, CA. *Principal Investigator.* As required per a 2017 Programmatic agreement between the NPS and the California State Historic Preservation Office, this project involved archaeological and osteological monitoring during construction-related ground disturbance at Scorpion Pier, Channel Island National Park for NHPA Section 106 compliance. James coordinated monitoring fieldwork and co-authored the technical report.

Property One, LLC. Redlands Packing House District Phase 2, Distillery, Coffee Shop, and Mixed-Use Retail Cultural Resources Investigations, Redlands, CA. *Project Manager.* This project entailed preconstruction and construction cultural resources monitoring, mechanical stripping, trenching, and testing at various parcels overlaying historic Chinatown (i.e., CA-SBR-5314H) and Sonora town in Downtown Redlands, California. James coordinated all phases of fieldwork, ethnographic interviews w/community stakeholders, artifact analysis, and technical report writing.

Naval Facilities Engineering Command (NAVFAC) SW Division, Archaeological Survey of a Portion of the Wilcox Ranch Properties for the Cultural Resources Program, Travis Air Force Base, Solano County, CA. *Principal Investigator.* The project involved an NHPA Section 106 Class III cultural resources inventory of 271- acres of privately owned land in support of a potential land exchange with Travis AFB. James coordinated, co-authored, and provided senior review of the project work plan, research design, safety plan, and technical report. James also supervised the fieldwork phase of the project.

United States Fish and Wildlife Service, Cultural Resources Survey for a Potential Land Exchange at Bitter Creek National Wildlife Refuge, Kern County, CA. *Project Manager.* The project involved an NHPA Section 106 Class III cultural resources inventory of 714- acres at 10 district parcels located within the Bitter Creek NWF, Kern County, California in support of a potential land exchange. James coordinated, co-authored, and provided senior review of the project work plan, research design, safety plan, and technical report. James also supervised the fieldwork phase of the project.

First Solar, LLC., First Solar Desert Quartzite Solar Farm Survey, Blythe, CA. *Project Manager.* The project entailed an NHPA Section 106 Class III archaeological inventory of approximately 5,000 acres of Bureau of Land Management land near Blythe, California for a 300-megawatt power-generating solar photovoltaic facility. James coordinated the production of the project work plan, research design, safety plan and technical report. James also supervised the fieldwork phase of the project.

Naval Facilities Engineering Command (NAVFAC) SW Division, Section 110 Site Recordation, Evaluation, and Data Recovery at Locus 1019, CA-IMP-8396, Naval Air Facility, El Centro, CA. *Project Manager.* The project involved an NHPA Section 110 survey, testing, and data recovery at CA-IMP-8396 Locus 1019 which consisted of three house pit house structures, several thermal features, and a midden situated along the maximum high stand shoreline of Lake Cahuilla. James coordinated preparation of the project work plan, research design, safety plan, technical report. James also supervised all three fieldwork phases of the project and coordinated all artifact analysis (including special studies conducted by external analysts).



Sara Dietler

Senior Archaeologist



EDUCATION

BA, Anthropology, San Diego State University

24 YEARS' EXPERIENCE

CERTIFICATIONS/ REGISTRATION

California BLM Permit,
Principal Investigator,
Statewide

Nevada BLM Permit,
Paleontology, Field Agent,
Statewide

PROFESSIONAL AFFILIATIONS

Society for American
Archaeology (SAA)

Society for California
Archaeology (SCA)

Sara Dietler is a senior archaeology and paleontology lead with more than 20 years of experience in cultural resources management in Southern California. As a senior project manager, she manages and prepares technical studies to report the findings of archaeological and paleontological surveys to assess a project's potential impacts. She applies her expertise for project-specific as well as on on-call contracts for cities, counties, utilities, transportation, and other agencies throughout the state of California.

Sara is well versed in preparing documentation and providing consultation in compliance with the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and the Society of Vertebrate Paleontology guidelines and requirements. Cross-trained in paleontological monitoring, Sara regularly monitors and supervises fossil salvage for public agencies and private developers. She has extensive experience providing oversight for long-term compliance monitoring projects throughout the Los Angeles Basin for archaeological, Native American, and paleontological monitoring projects and provides streamlined management for these disciplines.

Lending her expertise in Native American consultation, Sara also conducts trainings for and provides expert support to clients managing tribal cultural resource issues under CEQA and NEPA for all types of projects and environmental documents.

Relevant Experience

City of Los Angeles, Department of Recreation and Parks, Rancho Cienega Celes King III Swimming Pool. *Project Manager.* Sara is managing the historic recordation and archaeological, paleontological, and Native American monitoring performed for the proposed new Recreation Center and swimming pool at the Rancho Cienega Sports Complex.

City of Los Angeles, Department of Recreation and Parks, San Pasqual Park Restroom Replacement Project. *Project Manager.* Sara managed and oversaw the archaeological and Native American monitoring performed during ground disturbance of the San Pasqual Park Restroom Replacement project. The project required monitoring during construction activities due to known archaeological sensitivity at the park.

City of Los Angeles Department of Public Works – Bureau of Engineering, San Pedro Plaza Park, San Pedro, Los Angeles, CA. *Senior Cultural Resources Project Manager.* Sara provided archaeological and paleontological monitoring support for the San Pedro Plaza Park Project. The project area is located in the City of Los Angeles port district of San Pedro, approximately 26 miles south of downtown Los Angeles. Sara provided quality control oversight for the archaeological and paleontological mitigation. During monitoring on the project, archaeological materials were recovered include refuse associated with park use since it opened in 1889, and historic building debris likely



Sara Dietler (Continued)

Senior Archaeologist

associated with the Carnegie Library which formerly stood on site. Sara also provided recommendations for commemoration and protection of the find.

City of Los Angeles Department of Public Works – Bureau of Engineering, Gaffey Street Pool Construction Monitoring, San Pedro, Los Angeles, CA. *Project Manager.* Sara oversaw the data recovery of a World War I slit trench discovered during project excavation for an ADA compliant sidewalk. Serving as project manager and senior archaeologist on the project Sara provided mitigation recommendations and immediate response to the find.

City of Los Angeles Department of Public Works – Bureau of Engineering, Warner Grand Theatre, Historic Resources Technical Report and Conditions Assessment, San Pedro, Los Angeles, CA. *Project Manager, Report Co-Author.* The Bureau of Engineering's Environmental Management Group requested a Cultural Resources Surveys to inform and guide future rehabilitation or redevelopment efforts of the Warner Grand Theatre. The Warner Grand Theatre designed in the Art Deco-Modern style by master architect B. Marcus Priteca in 1931, and is listed on the National Register of Historic Places, and is designated a Los Angeles Historic-Cultural Monument. ESA prepared a historical resources technical report and conditions assessment report, which provided a comprehensive table of character-defining features along with a conditions assessment of each feature located within the interior and exterior of the Warner Grand Theatre. Sara managed both the archaeological and historic efforts providing one point of contact for the City.

City of Los Angeles Department of Public Works – Bureau of Engineering, Alameda Street Widening Between Harry Bridges Boulevard and Anaheim Street Project, Los Angeles, CA. *Project Manager.* The project included upgrades to Alameda Street and adjoining streets with improved infrastructure to accept increased traffic from existing and proposed projects located primarily within the Port of Los Angeles and the Wilmington Industrial Park and to adequately deal with storm flows. Sara oversaw a California Historical Resources Information System record search of the project area for archaeological and paleontological resources and technical documents regarding the findings and recommendations for construction activities during the proposed project. In addition, she provided and oversaw staff for the Archaeological/paleontological monitoring for geotechnical testing and made further recommendations based on the results of the testing.

Alameda Street Widening Archaeological Resource Assessment; Los Angeles, California; LADPW, Bureau of Engineering. *Project Archaeologist.* During the course of monitoring, archaeologists discovered historic archaeological resources from the late 19th and early 20th century use of the area. Resources discovered included a segment of the original Zanja Madre irrigation system, railroad elements, and the original vitrified brick paving surface of Alameda Street located under the present roadway. Mitigation in compliance with CEQA was developed to address each of the resource types, and included documentation, avoidance, and removal. Brick paving was reused in design of current traffic island as a result of this mitigation. Role included analysis of artifacts, research and development of mitigation during field phase of project and client consultation.

Main Street Archaeological/Paleontological Monitoring and Assessment; Los Angeles, California; City of Los Angeles BOE. *Archaeologist.* Archaeological monitoring resulted in the identification of 18 archaeological features. The features mainly consisted of subterranean architecture such as basements that had been backfilled and capped. Directed construction crew in controlled excavation of these features so that they could be exposed and recorded prior to demolition. Completed the analysis of artifacts recovered and produced a technical report. Directed the archaeological and paleontological monitoring of a police parking facility in downtown Los Angeles. Coordinated with the client and construction personnel throughout the project.



Sara Dietler (Continued)

Senior Archaeologist

RSCVE LLC., 670 Mesquit Street and Seventh Street Bridge Evaluation, Los Angeles, CA. *Project Manager and Report Co-author.* ESA prepared an EIR for the 670 Mesquit Street project in Los Angeles. As part of the EIR, a Cultural Resources Technical Report was prepared to determine if the project site was eligible for listing as a historical resource. The project site, originally occupied by the Los Angeles Ice and Cold Storage Company, was determined to lack integrity and therefore, ineligible for listing. Although the core of the building on the project site retained elements of the historic cold storage building, the facility was seismically upgraded resulting in significant alterations to its exterior. In its current condition, the facility does not convey its historical associations. Located south of the project site is the Seventh Street Bridge, which is listed on the California Register of Historical Resources, and eligible for the National Register of Historic Places. The project was also evaluated to determine if it would result in any potential impacts to nearby historic resources, including the Seventh Street Bridge and adjacent railroad tracks. Sara provided oversight and analysis for the preparation of Cultural Resources Technical Report.

Clark Construction, Long Beach Courthouse Project, Long Beach, CA. *Senior Project Archaeologist and Project Manager.* Sara directed the paleontological and archaeological monitoring for the construction of the New Long Beach Courthouse. She supervised monitors inspecting excavations up to 25 feet in depth. Nine archaeological features were recovered. Sara completed an assessment of the artifacts and fossil localities in a technical report at the completion of the project.

Vadnais Trenchless Services, Venice Dual Force Main Project, Venice, CA. *Cultural Resources Lead.* The Venice Dual Force Main Project is an \$88 million sewer force main construction project spanning 2 miles within Venice, Marina del Rey, and Playa del Rey. Contracted to Vadnais Trenchless Services and reporting to the City of Los Angeles, Bureau of Engineering, Environmental Management Group, ESA is serving as the project's environmental resource manager. ESA is serving as the project's environmental resource manager responsible for documenting the project's compliance with required environmental measures. The project is situated in a dense residential neighborhood and has garnered significant public interest. Monitoring includes the electronic collection of compliance data in the areas of aesthetics, biology, cultural resources, noise, vibration, stormwater pollution prevention best management practices, parking, haul routes, tree protection, among others. Sara provides quality control oversight for the archaeological and paleontological mitigation.

Advanced Water Treatment Facility Project Groundwater Reliability Improvement Project, Pico Rivera, CA. *Project Manager.* ESA is providing environmental compliance monitoring for the Water Replenishment District to ensure compliance with the conditions contained in the Mitigation and Monitoring Reporting Programs associated with three environmental documents, including the Final Environmental Impact Report (EIR), a Mitigated Negative Declaration, and a Supplemental EIR, pertaining to three infrastructure components associated with the project. ESA provides general compliance monitoring at varying rates of frequency depending on the nature of the activities and is sometimes on-site for 4-hour spot checks and other times for full 24-hour rotations. The project is located near a residential neighborhood and adjacent the San Gabriel River. Issues of concern include noise, vibration, night lighting, biological resources, cultural resources, and air quality. Sara provides quality assurance and oversight of the field monitoring, and day-to-day response to issues. She oversees archaeological and Native American monitoring for ground disturbance and coordinates all sub-consultants for the project. She also provides daily, weekly, and quarterly reporting on project compliance to support permitting and agency oversight.

Southern California Edison On-Call Master Services Agreement for Natural and Cultural Resources Services, Avalon, CA. *Cultural Resources Task Manager.* Sara provided project management and senior archaeological support for



Sara Dietler (Continued)

Senior Archaeologist

an on-call Master Services Agreement with Southern California Edison for cultural and natural resources consulting services. This contract included numerous surveys and monitoring projects for pole replacements and small- to mid-size reconductoring projects, substation maintenance, and construction projects. Sara served as project manager for more than 25 projects under this contract and served as the go-to person for all water, gas, and power projects occurring in the city of Avalon on Santa Catalina Island. Sara was responsible for oversight of archaeological and paleontological monitors and served as report author and report manager.

Los Angeles Unified School District (LAUSD) Central Los Angeles High School #9; Los Angeles, CA. Senior Project Archaeologist and Project Manager. Sara conducted on-site monitoring and investigation of archaeological sites exposed as a result of construction activities. During the data recovery phase in connection with a 19th century cemetery located on-site, she participated in locating of features, feature excavation, mapping, and client coordination. She organized background research on the cemetery, including genealogical, local libraries, city and county archives, other local cemetery records, internet, and local fraternal organizations. Sara advised on the lab methodology and setup and served as project manager. She was a contributing author and editor for the published monograph, which was published as part of a technical series, “Not Dead but Gone Before: The Archaeology of Los Angeles City Cemetery.”

City of Los Angeles Department of Water and Power, Scattergood Olympic Transmission Line, Los Angeles, CA. Report Author. The Los Angeles Department of Water and Power constructed approximately 11.4 miles of new 230 kilovolt (kv) underground transmission line connecting the Scattergood Generation Station and Olympic Receiving Station. The project includes monitoring of construction activities occurring in street rights-of-way. Sara provided final reporting for the long-term monitoring and QA/QC of the field data.

Veterans Administration Long Beach, Long Beach, CA. Senior Project Manager. Sara managed a long-term monitoring project of the Veteran’s Administration campus, which also includes implementation of a Memorandum of Agreement, a Plan of Action, and Historic Properties Treatment plan for the mitigation of disturbance to a prehistoric site on the campus.

City of Los Angeles Department of Public Works – Bureau of Engineering, Downtown Cesar Chavez Median Project, City of Los Angeles, CA. Project Manager. As a part of the Specialty Services On-Call Contract with the Bureau of Engineering, Sara assisted the City with a Local Assistance Project requiring consultations with Caltrans cultural resources. Sara was responsible for Caltrans coordination, serving as contributing author and report manager for the required Archaeological Survey Report, Historic Properties Survey Report, and Historical Resources Evaluation Report prepared for the project. Approximate Cost: \$9,956, Project Work Dates: 09/2015 to 12/2015

John Laing Homes, Hellman Ranch Project, Orange County, CA. Lab Director. Sara served as the lab director for the final monitoring phase of the John Laing Homes development project, cataloging and analyzing artifacts recovered from salvage monitoring and test units placed in relation to recovered intact burials. She conducted microscopic analysis of small items such as bone tools and shell and stone beads, directed lab assistants, and oversaw special studies, including the photo-documentation of the entire collection. Sara completed a section reporting on the results of the bead and ornament analysis in the final report, which was published as part of a technical series.

Hansen Dam Golf Course Water Recycling Project, Los Angeles, CA. Senior Archaeologist and Project Manager. Sara directed a phase I historical assessment for the Hansen Dam Golf Course Water Recycling Project located in the Los Angeles’ San Fernando Valley. The project included the construction of an outdoor pumping station adjacent to the existing Hansen Tank located at the Los Angeles Department of Water and Power’s Valley Generating Station. In addition,



Sara Dietler (Continued)

Senior Archaeologist

a pipeline or distribution line was planned to be installed from the pumping station to the Hansen Dam Golf Course along the Tujunga Wash. The phase I study of this project included mitigation for the effects of the project on the portion of the golf course falling within the area of potential effects, which was potentially sensitive for buried cultural resources as the result of a complex of World War II housing units placed on the site between the 1940s and the 1960s. Sara conducted consultation with the U.S. Army Corps of Engineers regarding the project.

Alameda Corridor-East Construction Authority (ACE). San Gabriel Trench Grade Separation Environmental Compliance Services, San Gabriel, CA. Senior Archaeologist and Report Manager. Sara conducted bead analysis, lab supervision and served as contributing author to data recovery report. She oversaw preparation of a published monograph, which includes the analysis of the feature and artifact recovery from the San Gabriel Mission site, as well as a contextual history of the site and findings. Sara provided artifact analysis and co-authored the artifact chapter in the monograph. The 2.2-mile San Gabriel Trench grade separation project resulted in the lowering of a 1.4-mile section of Union Pacific railroad track in a 30-foot-deep, 65-footwide trench through the city of San Gabriel with bridges constructed at Ramona Street, Mission Road, Del Mar Avenue and San Gabriel Boulevard, allowing vehicles and pedestrians to pass over the tracks. Proximity to the San Gabriel Mission provided sensitivity for cultural resources and a number of known archaeological resources in the project site. The cultural resources support was a multi-year effort consisting of Phase II testing, data recovery, and monitoring resulting in some of the most important finds known to the region.

Coachella Flats Wind Energy Repower Environmental Surveys, Coachella, CA. Senior Cultural Resources Task Leader. Sara served as Senior Cultural and Paleontological manager providing management and oversight for the surveys and reporting. She conducted coordination with the client and the U.S. Bureau of Land Management. Sara provided cultural resources, paleontological resources, and biological resources services in support of an Environmental Impact Report for the project.

Los Angeles County Department of Public Works (LACDPW), Topanga Library Project, Topanga Canyon, CA. Project Manager. Sara supervised the archaeological monitoring effort and directed data recovery of findings for the library project as part of an LACDPW On-call Contract. Construction included the installation waterlines along the roadway outside of the main project area. Monitoring resulted in the discovery of materials associated with the recorded archaeological site CA-LAN-8. Sara prepared a Data Recovery Plan and Research Design to mitigate the disturbance to the known site during installation of a water main for the library project. The resources were identified and evaluated for eligibility to the National Register of Historic Places. During the project, Sara worked closely with the LACDPW to assist them in mitigating the effects of the project as well as coordinating with Caltrans who had oversight on the project. Approximate Cost: \$145,000.00, Project Work Dates: 01/2009 to 12/2012

Pacific Gas & Electric (PG&E) North American Electric Reliability Corporation Support; Multiple Counties, CA. Senior Cultural Resources Specialist. Sara provided recommendations on archaeological, historic, and paleontological sensitivity based on desktop research via Geographic Information Systems, Google Earth, historic maps and aerials, and the National Geological Map database to determine sensitivity of cultural resources within the right-of-way for eight different transmission line projects. She supported PG&E Land and Environmental Management and PG&E Electric Transmission with cultural, and paleontological resource sensitivity assessments and other compliance efforts.

Pacific Gas & Electric (PG&E) Vallejo Substation B Reconductoring Projects Cultural Resources Support, Vallejo, CA. Senior Project Manager. Sara provided oversight of archaeological and historic evaluation of the property. The



Sara Dietler (Continued)

Senior Archaeologist

project consisted of an evaluation of a PG&E substation for potential historical register listing and conducted a cultural resources sensitivity desktop review.

Interstate 5 High Occupancy Vehicle Lanes Project, Orange County, CA. *Cultural Resources Task Manager.* Sara directed the Orange County Transportation Authority (OCTA) Interstate 5 (I-5) High Occupancy Vehicle (HOV) Lanes Project, which involves improvements to I-5 between State Route (SR) 55 and SR-57 and included a phase I study. Orange County Transportation Authority and the California Department of Transportation (Caltrans) served as the overseeing agencies. She coordinated with planners, other resource managers, and Caltrans. Sara completed analysis of existing conditions, conducted an archaeological survey, and produced an Archaeological Survey Report following Caltrans guidelines.

Holland Partners, Sixth and Bixel Project, Los Angeles, CA. *Project Manager.* Sara managed a monitoring phase of the project for a Holland Partners mixed-use development in downtown Los Angeles, which included the recovery of fossils such as marine invertebrates, sharks, and a partial whale. She conducted coordination with the Los Angeles Natural History Museum regarding preparation and curation of the whale fossil.

Los Angeles Department of Water and Power, Elysian/USC Water Recycling Project Initial Study/ Environmental Assessment, Los Angeles, CA. *Project Manager.* Sara worked on the Initial Study/Mitigated Negative Declaration and an Environmental Assessment/Finding of No Significant Impact to construct recycled water pipelines for irrigation and other industrial uses serving Los Angeles Department of Water and Power customers in downtown Los Angeles, including Elysian Park. The U.S. Environmental Protection Agency is the federal lead agency. Sara prepared two technical reports and a treatment plan for archaeological, historic, and paleontological resources identified during the phase I assessment.

Recurrent Energy, Kern County Solar Energy Projects, Kern County, CA. *Project Manager/Senior Archaeologist.* Sara provided cultural resources, paleontological resources, and Native American monitoring services for five separate solar photovoltaic projects for Recurrent Energy. The five projects include a total of 626 acres of previously undeveloped land in the eastern portion of the county. Sara served as project manager for all five projects and Senior Archaeologist providing client coordination and oversight of paleontological monitoring and reporting.

City of Beverly Hills, Purple Line Extension Project Independent Compliance Manager, Beverly Hills, CA. *Supervisor.* ESA conducted general compliance monitoring under contract to the City of Beverly Hills to ensure project compliance with the Memorandum of Agreement between the City of Beverly Hills and LAMetro during the advanced utilities relocation and construction of Section 1 of the Metro Purple Line Extension. In this role, ESA was responsible for compliance oversight of provisions in a Memorandum of Agreement between Metro and the City of Beverly Hills. Significant issues included traffic, pedestrian access, haul routes, and noise. Sara provided scheduling and oversight of the field monitoring and day-to-day response to compliance issues.

Crystal Geyser Roxane, Cabin Bar Ranch Water Bottling Facility Slowdown Lane, Inyo County, CA. *Project Manager, Senior Archaeologist.* Crystal Geyser Roxane proposed to construct a slowdown lane on the west side of U.S. Highway 395 for the spring water bottling facility, requiring an encroachment permit from Caltrans. ESA conducted testing at two National Register-eligible sites in accordance with Caltrans requirements. ESA evaluated the portions of the sites within the encroachment permit area and found that these areas did not contain sufficient data to address National Register criteria. Sara obtained necessary permitting, strategized and authored treatment plans in coordination with Caltrans



Sara Dietler (Continued)

Senior Archaeologist

archaeologist, Caltrans Environmental, Permitting, the Tribe and the client team. She also oversaw compliance with treatment plan during monitoring. Approximate Cost: \$34,000, Project Work Dates: 05/2016 – 02/2017

El Camino Real Bridge Replacement, Atascadero, CA. *Paleontological Project Manager.* Sara oversaw the preparation of all California Environmental Quality Act/National Environmental Policy Act documentation, survey, technical studies, and permitting, for the replacement of the El Camino Real Bridge over Santa Margarita Creek in Atascadero. Caltrans was the overseeing agency on the project and all reporting was prepared in accordance with the Caltrans Standard Environmental Reference for paleontology. Approximate Cost: \$8,600, Project Work Dates: 09/2015 to 12/2015

Orange County Parks Cooper Center Curation Project, Orange County, CA. *Project Manager.* Sara served as project manager and senior cultural resources report author and reviewer. ESA conducted this study on curation in California at the request of Orange County Parks. The purpose of the study was to conduct market research and collect a data set of curation costs and long-term management models used by curation facilities that house collections throughout California. The facilities in the data set included museums, universities, colleges, archaeological centers, cultural centers, tribal curation facilities, historical societies, city facilities, and county facilities.

Peters Canyon Channel Reuse Pipeline Project, Irvine, CA. *Paleontological Lead.* Sara served as paleontological lead for the paleontological monitoring report for the Peters Canyon Channel Reuse Pipeline Project. The project will divert high selenium nuisance surface and groundwater flows from the channel to the Orange County Sanitation District for treatment and reuse. Sara provided reporting and analysis of fossils encountered during construction.

City of Burbank, Avion Project Environmental Impact Report, Burbank, CA. *Paleontological Lead.* Sara is preparing the cultural resources section and overseeing the paleontological technical report for the Environmental Impact Report in support of a General Plan Amendment to change the General Plan land use designation from Airport to Golden State Commercial/Industrial for the westernmost 18-acre portion of the 60-acre project site.

County of Los Angeles, Rancho Los Amigos South Campus Environmental Impact Report (EIR), Los Angeles, CA. *Paleontological Lead.* Sara provided review and oversight of the paleontological technical report in support of the project EIR. ESA led the CEQA process on behalf of the County, including preparation of all technical studies in support of a full-scope EIR for the Rancho Los Amigos South Campus Project. This includes a historic district evaluation, archaeological surveys, traffic, water supply, arborist services, and all other California Environmental Quality Act-required topics.

The Onni Group, Los Angeles Times Mirror Square Environmental Impact Report, Los Angeles, CA. *Cultural Resources Task Leader.* Sara served as cultural lead, providing coordination and senior oversight for reporting on archaeological, tribal, and paleontological resources. The project includes the development of two mixed-use residential towers and the rehabilitation of the historic Los Angeles Times structures on a 3.6-acre city block within the Center City/Historic Core District of Downtown Los Angeles. Approximate Project Cost: \$219,400 (as of 2018)

Publications and Presentations

2015. Artifacts. In *Abundant Harvests: The Archaeology of Industry and Agriculture at San Gabriel Mission*. Dietler, John, Heather Gibson, and James M Potter, eds. SWCA Anthropological Research Paper Number 11. SWCA Environmental Consultants. Pasadena, California.



Sara Dietler (Continued)

Senior Archaeologist

2013. To the West of the Mission: Artifacts and Mortuary Patterns of the 19th Century Los Angeles Plaza Cemetery. Oral Presentation at the Society for California Archaeology Meeting, Honolulu, HI Session: California Mission Archaeology in the Los Angeles Area.
2012. Not Dead but Gone Before: The Archaeology of Los Angeles City Cemetery. AECOM Cultural Heritage Publication No. 4 (Author/Editor).
2008. Digging Deep: Archival Research into the History of Los Angeles' City Cemetery. Oral Presentation at the Society for American Archaeology Meeting, Vancouver, B.C., Canada and Society for California Archaeology Meeting, Ventura, California.
2007. Beads and Ornaments, in Piecing Together the Prehistory of Landing Hill: A Place Remembered. Chapter 15, EDAW Cultural Publications No. 3.
2006. Bones, Beads and Bowls: Variation in Habitation and Ritual Contexts at Landing Hill. Oral Presentation at the Society for California Archaeology Meeting, Ventura, California.

Appendix B

Sacred Land File Search

(Confidential – Not for public distribution)

Appendix C

DPR Forms

**(Confidential – Not for public
distribution)**

Appendix E

Paleontological Resources Assessment Report (Public Version)

Public Draft

INLAND FEEDER-FOOTHILL PUMP STATION INTERTIE PROJECT

Paleontological Resources Assessment Report

Prepared for

The Metropolitan Water District of Southern
California
700 North Alameda Street,
Los Angeles, California 90012

May 2024



Public Draft**INLAND FEEDER-FOOTHILL PUMP STATION
INTERTIE PROJECT****Paleontological Resources Assessment Report****Prepared for:**

The Metropolitan Water District of
Southern California
700 North Alameda Street,
Los Angeles, California 90012

May 2024

Prepared by:

ESA
626 Wilshire Blvd. Suite 1100
Los Angeles, CA 90017

Principal Investigator:

J.D. Stewart, PhD.

Authors:

J.D. Stewart, PhD.
Fatima Clark, B.A.

Project Manager

Sara Dietler, B.A.

Project Location:

Redlands (CA) USGS 7.5-minute Topographic Quad
Township 1 South, Range 3 West, Section 1

Acreage: Approx. 10.4 acres

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INLAND FEEDER-FOOTHILL PUMP STATION INTERTIE PROJECT

Paleontological Resources Assessment Report

Introduction

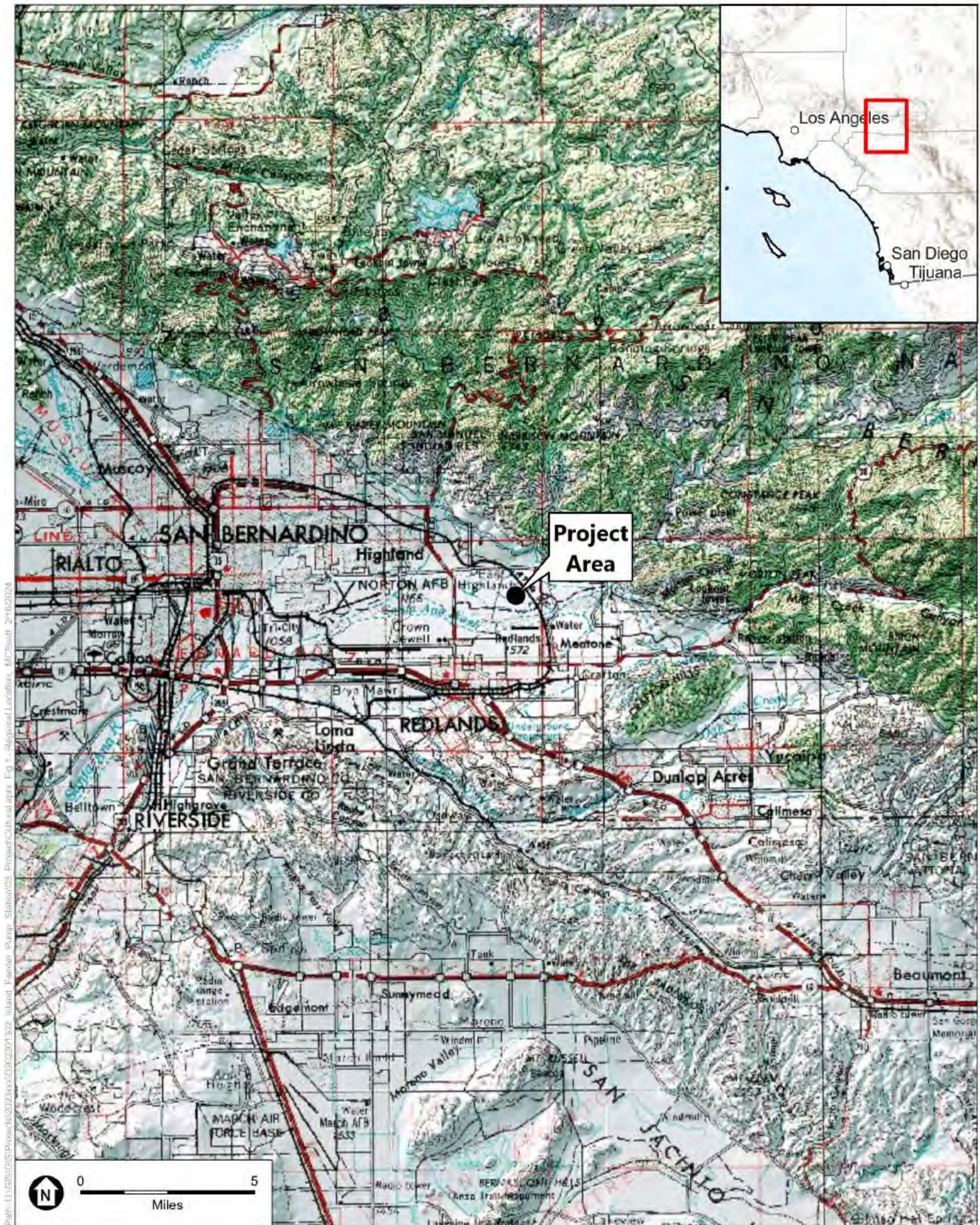
Environmental Science Associates (ESA) has been retained by The Metropolitan Water District of Southern California (Metropolitan) to conduct a paleontological resources assessment for the Inland Feeder-Foothill Pump Station Intertie Project (proposed project). The Inland Feeder is owned and operated by Metropolitan and conveys approximately 1.7 billion gallons of water daily throughout its distribution system. Located in western San Bernardino and Riverside counties, the Inland Feeder is a 44-mile-long, 12-foot-diameter conveyance pipeline supporting reliable water delivery to Southern California. The primary purpose of the Inland Feeder is to connect State Water Project supplies to Metropolitan's Eastern Distribution System. Metropolitan is the lead agency under the California Environmental Quality Act (CEQA).

Project Personnel

ESA personnel involved in the preparation of this report are as follows: J.D. Stewart, Ph.D., Principal Investigator of paleontology and report author; Fatima Clark, B.A., report contributor; Sara Dietler, B.A., project manager; and Chance Scott, GIS specialist. Resumes of key personnel are included in **Appendix A**.

Project Location

The proposed project is located on an approximately 10-acre, triangular-shaped parcel immediately south of the intersection of Cone Camp Road and Greenspot Road in Highland, California (assessor's parcel numbers 1210381240000 and 1210381250000; referred to in this report as the project area) (**Figure 1**). The site is generally accessible from State Route 210 (Foothill Freeway), located roughly 3.5 miles to the west. Local access to the project area is provided by Cone Camp Road, with an entrance gate immediately north and south of the Foothill Pump Station. The majority of the site is secured with chain-link perimeter fencing. The project area is bounded by Greenspot Road and residential development to the north, the Santa Ana River and open space to the south, and large-lot, single-family residences and open space to the east and west.



SOURCE: ESA, 2024

Inland Feeder Pump Station

Figure 1
Regional Location

Metropolitan owns 5.47 acres of the project area and has easement rights to approximately 1 acre of the project area. The San Bernardino Valley Municipal Water District (SBVMWD) and the San Bernardino Valley Water Conservation District (SBVWCD) own the remainder of the project area. SBVWCD also owns the parcel directly south of Metropolitan's triangular-shaped fee property. Metropolitan will obtain an additional easement for the SBVWCD property located between the Metropolitan Inland Feeder alignment and its fee property.

The proposed project facilities are situated within Section 1 of Township 1 South, Range 3 West of the Redlands (CA) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (**Figure 2**).

Project Description

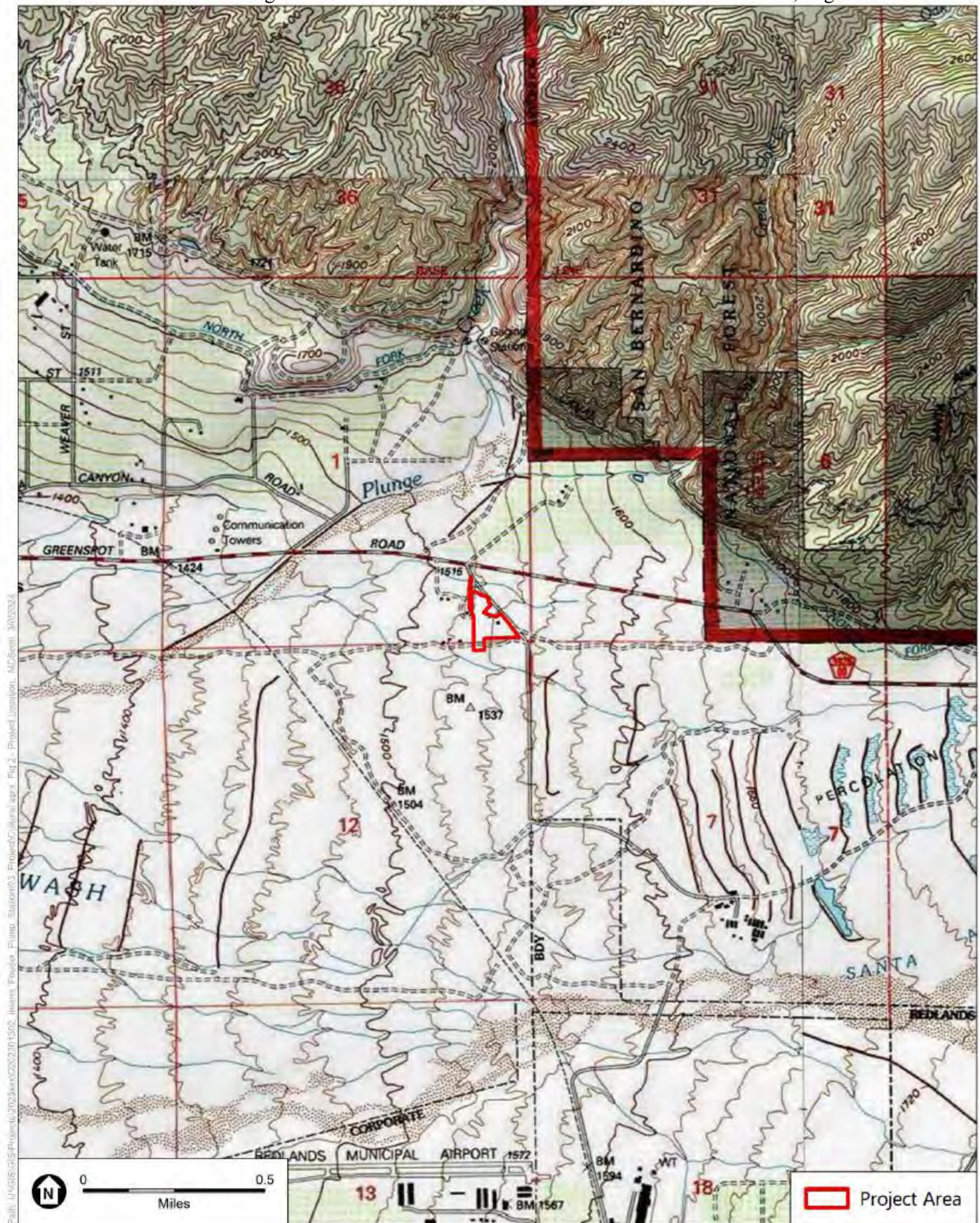
To enhance Metropolitan's water delivery flexibility in response to drought conditions and limited State Water Project (SWP) allocations, Metropolitan is proposing two new pipeline connections between the Inland Feeder and the SBVMWD-Inland Feeder Interconnection Line 1 and SBVMWD's Foothill Pump Station (FPS).

Two new underground pipelines (supply connection and discharge connection), two underground vaults, four aboveground hydropneumatic surge tanks (HST), and associated appurtenant structures would be constructed in two stages as outlined below.

Stage 1 would include construction of the components mainly located within the existing fenced facility. This would include construction of an approximately 400-foot-long, 54-inch-diameter supply connection pipeline, an approximately 750-foot-long, 54-inch-diameter discharge connection pipeline, a 50-foot by 40-foot underground vault, four aboveground HSTs on concrete pads, and appurtenant structures. Additionally, the proposed project would include installation of a new fence-line along the western boundary of the project area to accommodate the supply and discharge connection components.

Stage 2 construction activities would occur along the southern portion of the project area, located mainly outside of the fenced facility, and would include a 45-foot by 40-foot underground vault, a portion of the 54-inch-diameter discharge connection pipeline, all associated appurtenant structures, and final connections to the existing Inland Feeder pipeline.

Most of the construction activities would occur during daylight hours, occasional nighttime construction activities may be required to shut down the Inland Feeder and install the tie-in connection. Operation and maintenance activities at the FPS and Inland Feeder would be similar to existing conditions.



SOURCE: ESA, 2024, USGS, 2023

Topo Quad: Redlands, 1980

Inland Feeder Pump Station

Figure 2
Local Vicinity Map (Topo)

Regulatory Framework

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value that are afforded protection under state laws and regulations. The following section summarizes the applicable state laws and regulations, as well as professional standards provided by the Society of Vertebrate Paleontology (SVP 2010).

State Regulations

California Environmental Quality Act

In California, unique paleontologic resources, sites, and geologic features, particularly with regard to fossil localities, are afforded protection under a number of state environmental statutes, including the California Environmental Quality Act (CEQA). Under CEQA, a lead agency must determine if the project would result in the direct or indirect destruction of a unique paleontologic resource or site or unique geologic feature, and if such impacts would be significant. The CEQA lead agency is responsible for ensuring that feasible mitigation measures are implemented in order to reduce impacts to a less-than-significant level. CEQA does not include a specific definition of “unique paleontological resource or site,” nor does it establish thresholds for significance.

Further guidance can be found in Scott and Springer (2003). Those authors stated that significant paleontologic resources include “fossil remains of large to very small aquatic and terrestrial vertebrates, remains of plants and animals previously not represented in certain portions of the stratigraphy, and fossils that might aid stratigraphic correlations, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, paleoclimatology, and the relationships of aquatic and terrestrial species” (2003:6). Furthermore, they also advised that impacts might be considered less than significant if dense concentrations of plant and/or invertebrate fossil remains were “so locally abundant that the impacts to the resources do not appreciably diminish their overall abundance or diversity” (2003:6).

More recent guidance has been developed by the Society for Vertebrate Paleontology (SVP 2010), which defines significant paleontologic resources as “fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).”

Therefore, any identifiable vertebrate fossil remains would be considered unique under CEQA, and direct or indirect impacts on such remains would be considered significant. Identifiable invertebrate and plant fossils would be considered unique if they meet the criteria presented above. Determinations shall take into account the abundance and densities of fossil specimens or newly and previously recorded fossil localities in exposures of the rock units present at a project site.

Public Resources Code Section 5097.5

Other state regulations for paleontological resource management are included in PRC Section 5097.5. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

Society for Vertebrate Paleontology

The SVP has established standard guidelines (SVP 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most agencies with paleontological resource-specific Laws, Ordinances, Regulations, and Standards (LORS) accept and use the professional standards set forth by the SVP.

As defined by the SVP (2010:11), significant nonrenewable paleontological resources are:

Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).

Based on the significance definitions of the SVP (2010), all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered to be “sensitive” to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either directly or indirectly disturb or destroy fossil remains. Paleontological sites indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case (SVP 2010).

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its “Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources,” the SVP (2010:1–2) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcanoclastic formations (e. g., ashes or tephra), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.).
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.
- **Undetermined Potential.** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.
- **No Potential.** Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

For geologic units with high potential, full-time monitoring is generally recommended during any Project-related ground disturbance. For geologic units with low potential, protection or salvage efforts would not generally be necessary. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within the study area.

Methods and Results

The project area was the subject of thorough background research and analysis to assess its paleontological sensitivity. The research included geologic setting, literature, geologic map, and geotechnical report review, a paleontological records search conducted by the Natural History Museum of Los Angeles County (LACM), and a paleontological sensitivity analysis conducted by ESA Principal Paleontologist, J.D. Stewart, Ph.D.

Geologic Setting

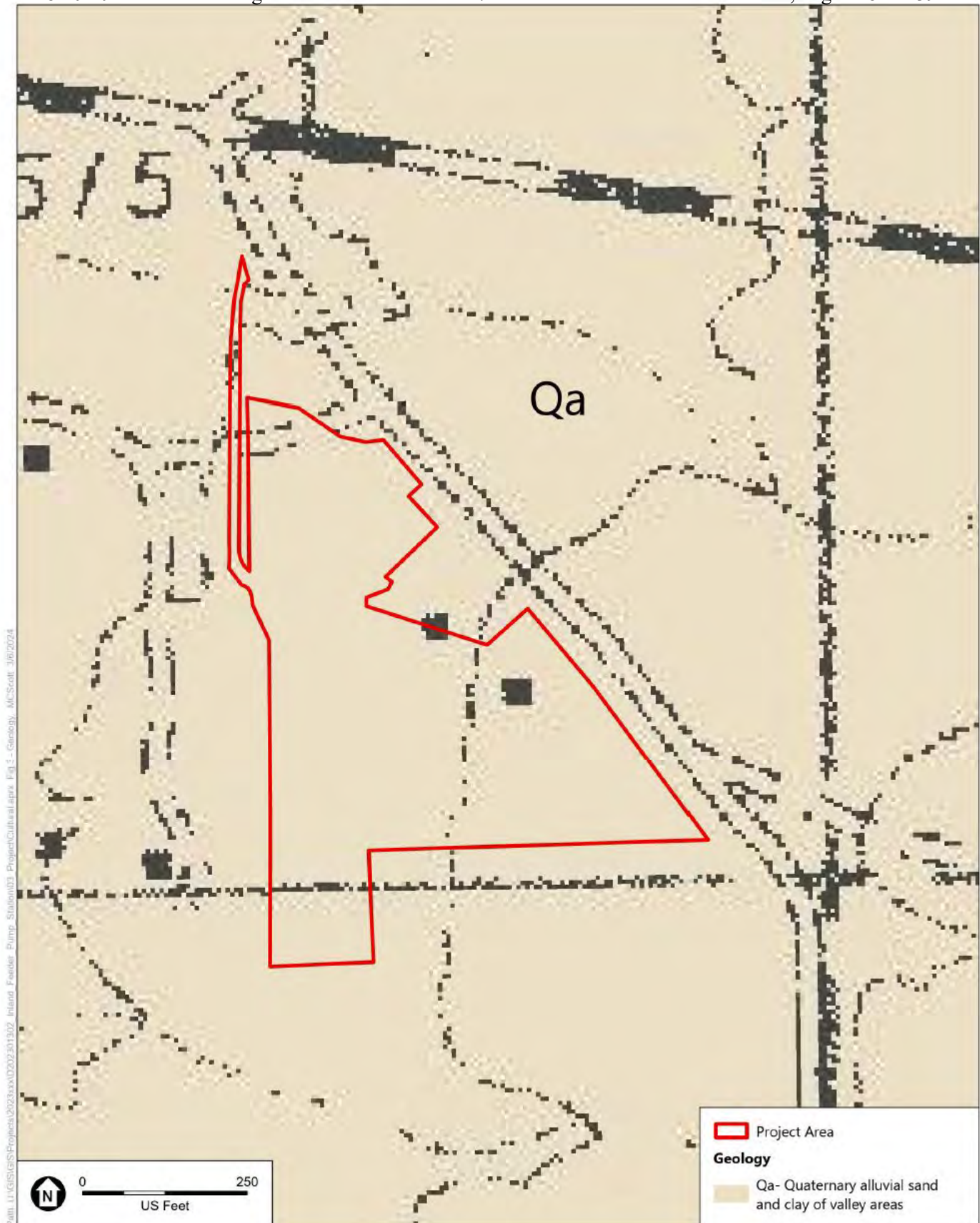
The project area is situated on the limit of the Peninsular and Transverse Range geomorphic provinces. The Peninsular Geomorphic Province follows a northwest to southeast course from Baja California to the Santa Ana Mountains. The Transverse Ranges trend east-west and consist of mountain ranges and valleys from the Mojave and Colorado Desert Provinces to Point Arguello at the Pacific Ocean. The project area is located within the San Bernardino Valley, made up of alluvial deposits created as a result of igneous and metasedimentary rock of the San Bernardino Mountains. The Santa Ana River along with the San Bernardino Mountains are the predominant features in the vicinity. The San Andreas Fault Zone, Crafton Hill Fault, and the San Jacinto Fault are located in the vicinity of the project area (Morton and Miller 2006; HDR Engineering Inc. 2022).

Literature Review

The Pleistocene deposits of the greater Los Angeles area host many significant vertebrate fossils. However, the Project should not disturb Pleistocene alluvium, only Holocene. The late Holocene is considered too young to host significant fossils (SVP 2010). Neither of the compendia of Pleistocene vertebrate fossil localities in California by Jefferson (1991a, b) list any nearby localities not listed in the Report of Bell (2024).

Geologic Map

The project area is entirely mapped as Holocene-aged Quaternary alluvial “sand and clay of valley areas, covered with gray clay soil”, including “alluvial pebbly sand adjacent to mountain terranes” (Dibblee and Minch 2004) (**Figure 3**).



SOURCE: ESA, 2024

Inland Feeder Pump Station

Figure 3
Geologic Map

Geotechnical Report Review

ESA reviewed the geotechnical report prepared by HDR Engineering (2022) for the proposed Project. HDR Engineering (2022) excavated three test pits to a depth of 49.6 feet below ground surface (bgs) to study the conditions of the project area. The first 5 to 11 feet of the test pit units showed artificial fill. Alluvium soils were found beneath the artificial fill and consist of poorly graded sand mixed with gravel, cobbles, and boulders (HDR Engineering 2022).

Paleontological Record

A paleontological resources database search was conducted by the Natural History Museum of Los Angeles County (LACM) on January 7, 2024 (**Appendix B**). The search entailed an examination of current geologic maps and known fossil localities within the project area and vicinity. The purpose of the records search was to (1) determine whether any previously recorded fossil localities occur in the project area or vicinity; (2) assess the potential for disturbance of these localities during construction; and (3) assist in evaluating the paleontological sensitivity of the project area.

Results of the paleontological resources records search conducted by the LACM indicated that no fossil localities lie directly within the project area; however, four fossil localities (LACM VP 1782, 4540, 4619, and 7811) were identified nearby from sedimentary deposits that may be found in the subsurface in the project area (**Table 1**) (Bell 2022).

TABLE 1
LACM FOSSIL LOCALITIES

Locality Number	Formation	Taxa	Depth
LACM VP 1782	Unnamed formation (Pleistocene)	Camel family (Camelidae)	Unknown
LACM VP 4540	Unnamed formation	Horse Family (Equidae)	unknown
LACM VP 4619	Unknown formation (eolian, tan silt;	Mammoth (Mammuthus)	9–11 feet bgs
LACM VP 7811	(Pleistocene, gravel pit)	Whip snake (Masticophis)	100 feet bgs

LACM VP 1782 produced fossil specimens of the camel family (Camelidae) at an unknown depth. LACM VP 4540 yielded specimens of the horse family (Equidae) at an unknown depth. LACM VP 4619 produced a fossil specimen of mammoth (*Mammuthus*) at 9 and 11 feet bgs. LACM VP 7811 produced a fossil specimen of whip snake (*Masticophis*) at 100 feet bgs.

Paleontological Sensitivity Analysis

The literature and geologic mapping review, as well as the LACM records search results, were used to assign paleontological sensitivity to the geologic units at surface and underlying the project area, following the guidelines of the SVP (2010):

Qa: Holocene alluvium is found throughout the broad coastal valley hosting the project area, bounded outside the project area by uplifted regions of older Pleistocene marine and non-marine deposits. While these Pleistocene units likely underly the younger, Holocene alluvium in the project area, the depth is unknown but most likely lies deeper than the planned excavation based on the geotechnical reports. The Qa throughout the project area is likely less than 5,000 years old and is considered to not contain fossils, if the age is correct. Therefore, this unit is assigned a **Low Potential** to contain paleontological resources.

Conclusions and Recommendations

The Quaternary alluvium underlying the proposed project area is of low paleontological sensitivity, increasing to higher sensitivity with depth. While the exact depth is not known, it likely lies deeper than the planned excavation. However, should aspects of the proposed project excavate below the potential shift from Holocene to Pleistocene alluvium and potentially impact unique paleontological resources. Per Metropolitan's general Standard Practices, a project-specific WEAP training will be prepared and given to all construction personnel. The training will include all potential concerns and considerations related to paleontological resources, including types of paleontological resources that may be encountered and the proper procedures to be enacted in the event of an inadvertent discovery of paleontological resources. In addition, per Metropolitan's paleontological resources Standard Practice, the following standard would be met:

- If archaeological or paleontological resources are encountered at the project site, the Contractor shall not disturb the resources and shall immediately cease all work within 50 feet of the discovery, notify the Engineer, and protect the discovery area, as directed by the Engineer. The Engineer, with the qualified architectural historian, archaeologist and/or paleontologist, shall make a decision of validity of the discovery and designate an area surrounding the discovery as a restricted area. The Contractor shall not enter or work in the restricted area until the Engineer provides written authorization.

Impacts to unique paleontological resources would result in less than significant impacts through adherence to Metropolitan's Standard Practices and local and state regulations.

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Appendix A

Personnel



Sara Dietler

Cultural Resources Technical Lead



EDUCATION

BA, Anthropology, San Diego State University

25 YEARS' EXPERIENCE

CERTIFICATIONS/ REGISTRATION

California BLM Permit,
Principal Investigator,
Statewide

Nevada BLM Permit,
Paleontology, Field Agent,
Statewide

PROFESSIONAL AFFILIATIONS

Society for American
Archaeology (SAA)

Society for California
Archaeology (SCA)

Sara Dietler is a senior archaeology and paleontology lead with more than 25 years of experience in cultural resources management in Southern California. As a senior project manager, she manages and prepares technical studies to report the findings of archaeological and paleontological assessments to determine a project's potential impacts. She applies her expertise for project-specific as well as on-call contracts for cities, counties, utilities, transportation, and other agencies throughout the state of California. Sara is well versed in preparing documentation and providing consultation in compliance with the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and the Society of Vertebrate Paleontology guidelines and requirements. She has extensive experience managing multidisciplinary projects throughout the Los Angeles Basin including analysis of archaeological, paleontological, tribal, and built environment resources, and provides streamlined management for these disciplines.

Relevant Experience

County of Los Angeles, Department of Public Works, Los Angeles River Bike Path Project, City of Los Angeles and Universal City, California. *Project Manager, Report Author.* ESA completed a cultural resources assessment for the proposed Los Angeles River Bike Path Project. The proposed project consists of constructing approximately 1.5 miles of paved path varying in width from 12 to 14 feet, along the Los Angeles River Flood Control Channel in the cities of Los Angeles and Universal City. Class I bicycle paths, also called shared-use paths or multi-use paths, are for exclusive use by bicyclists, pedestrians, and other non-motorized modes of travel. This project was initiated through the 2012 County of Los Angeles Bicycle Master Plan and a development agreement with NBC Universal with the purpose of installing a Class I bicycle facility. As part of the assessment direct and indirect impacts to the LAR were found to be not significant. Sara provided senior cultural resource expertise, tribal consultation support, authored the report and MND section of the environmental document.

The City of Los Angeles Bureau of Engineering, North Atwater East Bank Riverway Project, Los Angeles, CA. *Project Manager, Report Author.* The North Atwater East Bank Riverway project will convert an existing maintenance road that runs along the LAR Channel into an aesthetically pleasing pathway for use by pedestrians and equestrians. The existing site pathway is an asphalt maintenance road alongside a series of power lines in the Atwater Village area, specifically along the LAR Channel east bank, south of 134 Freeway and north of Los Feliz Boulevard. ESA, working with BOE and the US Army Corps of Engineers, prepared a report compliant with Section 106 of NEPA.

The City of Los Angeles Bureau of Engineering, North Outfall Sewer Rehabilitation Unit 11 – Humboldt St. to Cardinal St. Project, Los Angeles, CA. *Project Manager, Report Author.* ESA completed an Archaeological Resources Assessment, Paleontological Resources



Sara Dietler (Continued)

Cultural Resources Technical Lead

Assessment, and a Cultural Resources Mitigation Monitoring Plan for the North Outfall Sewer Rehabilitation Unit 11 Project. The Project proposed to rehabilitate 3,942 linear feet of 54-inch Burns-McDonnell Semi Elliptical North Outfall Sewer that was constructed in the 1920s. The line was originally constructed with concrete and a layer of tile above the invert and all the way to the crown. Sara prepared the cultural resources study and found a high sensitivity for buried resources. She then worked with BOE staff to create recommendations and PDFs to support the Project.

The City of Los Angeles Bureau of Engineering, CBD Sewer Rehabilitation Units 13 and 14 – Griffith to Grand Avenue Project, Los Angeles, CA. ESA completed an Archaeological Resources Assessment, Paleontological Resources Assessment, and a Cultural Resources Mitigation Monitoring Plan for the CBD Sewer Rehabilitation Units 13 and 14 Project. The Project proposed to rehabilitate 4,828 linear feet of existing circular brick sewer and rehabilitate 13 existing maintenance holes. The Project limits span from the existing maintenance hole 537-03-204 on East Washington Boulevard from Griffith Avenue to Main Street at MH 516-14-149. The CBD Unit 13 proposes to rehabilitate approximately 3,600 linear feet of existing 40 and 45-inch diameter circular brick sewer. ESA prepared the cultural resources study and found a high sensitivity for buried resources as well as a potential to impact the Zanja Conduit System. ESA worked with BOE staff to create recommendations and PDFs to support the Project and design the project around the location of resources

City of Burbank, Avion Project Environmental Impact Report, Burbank, CA. *Paleontological Lead.* Sara is preparing the cultural resources section and overseeing the paleontological technical report for the Environmental Impact Report in support of a General Plan Amendment to change the General Plan land use designation from Airport to Golden State Commercial/Industrial for the westernmost 18-acre portion of the 60-acre project site.

City of Los Angeles Department of Public Works – Bureau of Engineering, Warner Grand Theatre, Historic Resources Technical Report and Conditions Assessment, San Pedro, Los Angeles, CA. *Project Manager, Co-Author.* Sara managed the Cultural Resources Surveys to inform and guide future rehabilitation or redevelopment efforts of the Warner Grand Theatre. The Warner Grand Theatre designed in the Art Deco-Modern style by master architect B. Marcus Priteca in 1931, and is listed on the National Register of Historic Places, and is designated a Los Angeles Historic-Cultural Monument. ESA prepared a historical resources technical report and conditions assessment report, which provided a comprehensive table of character-defining features along with a conditions assessment of each feature located within the interior and exterior of the Warner Grand Theatre. Sara managed both the archaeological and historic efforts providing one point of contact for the City.

Los Angeles Department of Water and Power, Elysian/USC Water Recycling Project Initial Study/ Environmental Assessment, Los Angeles, CA. *Project Manager.* Sara worked on the IS/MND and an EA/Finding of No Significant Impact to construct recycled water pipelines for irrigation and other industrial uses serving Los Angeles Department of Water and Power customers in downtown Los Angeles, including Elysian Park. Sara prepared two technical reports and a treatment plan for archaeological, historic, and paleontological resources identified during the phase I assessment.



JD Stewart, PhD

Paleontologist



EDUCATION

PhD, Systematics & Ecology, University of Kansas

MA, Systematics and Ecology, University of Kansas

BA Degree, Biology, University of Kansas

40 YEARS' EXPERIENCE

CERTIFICATIONS/REGISTRATION

Meets Society of Vertebrate Paleontology definition of qualified professional paleontologist

Orange County Certified Paleontologist

PROFESSIONAL AFFILIATIONS

Society of Vertebrate Paleontology

Research Associate, Natural History Museum of Los Angeles County

Dr. JD Stewart has more than 40 years' experience in the field of paleontology, with 30 years' experience in California. He has authored or co-authored 40 peer-reviewed articles for scientific journals and books. Within these, he has authored or co-authored descriptions of three new genera and three new species.

He is a recognized authority on fossil fishes of Cretaceous rocks of North America and Cenozoic rocks of the western coast of North America. As a result, Dr. Stewart is often called upon to identify paleontological and archaeological specimens. He has served as expert witness for the U.S. Department of Justice.

Dr. Stewart has extensive experience finding and excavating fossils for county, state, and provincial institutions. His field work includes projects in cooperation with the U.S. Bureau of Land Management, National Parks Service, U.S. Army Corps of Engineers, U.S. Navy, U.S. Department of Energy, Federal Aviation Administration, California Energy Commission, Caltrans, and California State Parks. The Bureau of Land Management's national website features one of his excavations from 2004. He has supervised monitoring of construction activity in numerous California counties and municipalities. In addition to fieldwork, he has experience in the supervision of preparators, surveyors, curatorial assistants, and excavators. He also has extensive experience preparing fossils, and has processed, recovered, and identified thousands of microvertebrate fossils.

Relevant Experience

Salton Sea Mitigation Implementation Plan, Riverside and Imperial Counties, CA.

Paleontologist. ESA prepared an adaptive management and monitoring plan for the Salton Sea basin for the Salton Sea Management Program, which is a partnership between the California Natural Resources Agency, DWR, and CDFW. The monitoring plan will prioritize and guide monitoring for biological resources, including avian species, fish and invertebrates, as well as water quality, hydrology, air quality, and socioeconomics. The monitoring plan will inform status and trends of resources, as well as the implementation of future habitat and dust suppression projects. JD compiled the paleontological resource mitigation and monitoring plan and prepared the team for monitoring.

California Water Service Company, Palos Verdes Peninsula Water Reliability Project, Rolling Hills Estates, CA. Paleontologist. ESA provided a full suite of environmental services for the Palos Verdes Peninsula Water Reliability project. The proposed project involves the construction of approximately seven miles of buried potable water pipelines and a new booster pump station to replace the current water distribution system serving the Palos Verdes Peninsula. The large 7-mile utility/infrastructure project, which crossed multiple jurisdictions, including the cities of Rolling Hills Estates and Rancho Palos Verdes, and the County of Los Angeles. JD oversaw paleontological monitoring for reaches 3 and 4 and the pump station, coordinating finds, identifying fossils, and processing the fossils at the lab.



JD Stewart, PhD (Continued)

Paleontologist

Syphon Reservoir Geotechnical Investigations Project IS/MND, Orange County, CA. *Principal Paleontologist.* IRWD implemented the Geotechnical Investigations Project to characterize the geologic and geotechnical conditions of the Syphon Reservoir site to support the potential development of a future reservoir expansion. The Project included a combination of exploratory test pits, borings, and geophysical surveys to characterize the subsurface conditions of the soil at the Syphon Reservoir site and verified the characteristics of the Center Valley Fault. ESA provided extensive biological surveys and cultural surveys, assisted IRWD with AB 52 process for Tribal consultation. Dr. Stewart supervised paleontological monitoring during geotechnical explorations (including borings, exploratory test pits, and abutment/seismic trenches) at the Syphon Reservoir, as the project is located within geologic formations (Silverado and Sespe/Vaqueros) that have a high paleontological potential for yielding paleontological resources. Sediment sampling was conducted to identify the presence/absence of microvertebrate fossils.

Goetz Road Potable Water Storage Tank and Pipeline Project EIR, Riverside, CA. *Paleontologist.* ESA prepared an EIR and conducted supporting biological, archaeological, and paleontological surveys, as well as prepared visual simulations and a shade and shadow report for the Goetz Road Potable Water Storage Tank and Pipeline project. The project would involve construction and operation of an 8-million-gallon potable water storage tank in the City of Perris. JD led the paleontology survey.

City of Menifee, On-Call Consulting and Peer Review Services, Menifee, CA. *Paleontologist.* For 5 years, ESA has provided on-call peer reviews of more than 30 applicant-prepared cultural resources technical reports. ESA has become a trusted advisor to the City. JD has provided peer review of paleontology sections and reports for the City.

Rosedale-Rio Bravo Water Storage District, Onyx Ranch South Fork Valley Water Project EIR, Kern County, CA. *Paleontologist.* ESA prepared the EIR and associated technical studies to support the Onyx Ranch South Fork Valley Water Project. RRBWSD proposes to change the point of diversion and place of use for the water rights associated with Onyx Ranch and Smith Ranch on the South Fork of the Kern River. The intent of the project is to allow water to be delivered in the RRBWSD service area on the San Joaquin Valley floor and used for irrigation and groundwater recharge. The proposed project would assist the RRBWSD in meeting its sustainability goals under the Sustainable Groundwater Management Act. JD prepared the paleontology report to support the CEQA section.

Guild GC, 8777 Washington Boulevard MND, Culver City, CA. *Paleontologist.* ESA prepared an MND to address the proposed redevelopment of an approximately 1-acre property at 8777 Washington Boulevard north of the intersection at Washington Boulevard and National Boulevard in Culver City. The project is proposing a four-story building up to 56 feet. The project is proposing approximately 128,000 square feet of office space on Levels 2 through 4 and 4,500 square feet of retail/food retail on the ground level. JD provided monitoring oversight, oversaw fossil discovery, and processed fossil samples.

I-805 Managed Lanes South Project, Caltrans District 11, San Diego County, CA. *Paleontologist.* Dr. Stewart supervised the pedestrian survey of the project footprint and wrote the Paleontological Resource Assessment.

I-805 North Corridor Project, Caltrans District 11, San Diego County, CA. *Paleontologist.* Dr. Stewart supervised the pedestrian survey of the project footprint and wrote the Paleontological Resource Assessment.

Crestavilla Retirement and Assisted Living Community Project, Laguna Niguel, CA. *Principal Paleontologist.* Dr. Stewart supervised paleontological monitoring during the construction of a new 224-unit retirement and assisted living facility and an approximately 1,870 square-foot Spiritual Resource Center (Shepherd of the Hills Church) within a four-story structure located over a one-level subterranean parking structure. The monitoring led to the identification of a



JD Stewart, PhD (Continued)

Paleontologist

remarkable collection of vertebrate fossils, including the first record of a gulper shark (*Centrophorus*) from any Neogene sediments of coastal California and the first reported specimens of the cookie-cutter shark (*Isistius*) from the Capistrano Formation. Additionally, the project yielded the most complete fossil tuna ever found in California and it probably represents a species new to science.

Palos Verdes Peninsula Water Reliability Project, Palos Verdes Peninsula, CA. *Principal Paleontologist.* Dr. Stewart supervised paleontological monitoring during construction of new potable water pipelines and a new booster pump station to replace the current water distribution system serving the Palos Verdes Peninsula. The monitoring led to the identification and salvage of numerous fossils from Altamira Shale deposits of the Monterey Formation, including fossils of leaf imprints, sardine scales, fish parts (vertebrae, dentary, mandible) and the fossil appendage (dactyl) of a type of Mantis shrimp (Stomatopod). The Mantis shrimp specimen is believed to be the only second known occurrence in southern California of *Angelosquilla altamierensis*, and the only one with a known precise locality and provenience.

Oaks at Monte Nido, Santa Monica Mountains, Unincorporated Los Angeles County, CA. *Principal Paleontologist.* Dr. Stewart was in charge of the preparation of the Paleontological Resources Assessment Report, which included a pedestrian survey. The pedestrian survey yielded the identification of a sandstone boulder that contains a fossil impression of the skull of a small-toothed cetacean “dolphin” and the identification of fossilized shells of pelecypods (e.g., bivalves such as clams, mussels, oysters, and cockles) and gastropods (e.g., snails and slugs). The project proposes the development of 15 single-family residences on separate individual recorded parcels within the Monte Nido Community, along the scenic route of Piuma Road.

Heritage Fields/Great Park Paleontological Review, Orange County, CA. *Principal Paleontologist.* Dr. Stewart conducted Phase I and II paleontological assessments at the Heritage Fields / Great Park in Orange County, California where he and his team discovered significant portions of a Miocene-aged (15 million years ago) whale fossil, and a Pleistocene microvertebrate fauna dating to before 28,000 years ago.

Calnev Pipeline Project, San Bernardino County, CA, and Clark County, NV. *Principal Paleontologist.* Dr. Stewart directed paleontological survey of a 234-mile-long project area in San Bernardino County, California and Clark County, Nevada and wrote the paleontological assessment.

Appendix B

LACM Records Search –

Confidential – Not for Public Distribution

Appendix F

Noise Calculations and Modeling

Project: Inland Feeder

Construction Noise Impact on Sensitive Receptors
Unmitigated

Parameters

Leq to L10 factor	3
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Leq to L10 factor				3				West 30				East 40				North 250				West 275			
A - Upper South				R1					R2					R3					R4				
Construction Phase Equipment Type	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shieldin g, dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA
Pipeline Trenching and Installation-SC																							
Drum Mixer	1	80	50%	30	84	81	84	0	40	82	79	82	0	250	66	63	66	0	275	65	62	65	0
Excavator	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Generator	1	82	50%	30	86	83	86	0	40	84	81	84	0	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	230	67	60	63	0	240	66	59	62	0	450	61	54	57	0	475	60	53	56	0
Vacuum Street Sweeper	1	80	10%	230	67	57	60	0	240	66	56	59	0	450	61	51	54	0	475	60	50	53	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Welder	1	73	40%	230	60	56	59	0	240	59	55	58	0	450	54	50	53	0	475	53	49	52	0
Vault Structure Excavation-SC																							
Excavator	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	72	62	65	0	140	71	61	64	0	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	84	80	83	0	40	82	78	81	0	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Vault Structure Installation-SC																							
Compressor (air)	1	80	40%	30	84	80	83	0	40	82	78	81	0	250	66	62	65	0	275	65	61	64	0
Crane	1	85	16%	30	89	81	84	0	40	87	79	82	0	250	71	63	66	0	275	70	62	65	0
Forklift	1	75	10%	230	62	52	55	0	240	61	51	54	0	450	56	46	49	0	475	55	45	48	0
Generator	1	82	50%	30	86	83	86	0	40	84	81	84	0	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	67	57	60	0	240	66	56	59	0	450	61	51	54	0	475	60	50	53	0
Surge Tank Excavation-SC																							
Excavator	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	72	62	65	0	140	71	61	64	0	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	84	80	83	0	40	82	78	81	0	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Surge Tank Installation-SC																							
Compressor (air)	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Crane	1	85	16%	30	89	81	84	0	40	87	79	82	0	250	71	63	66	0	275	70	62	65	0
Generator	1	82	50%	30	86	83	86	0	40	84	81	84	0	250	68	65	68	0	275	67	64	67	0
Grader	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	67	57	60	0	240	66	56	59	0	450	61	51	54	0	475	60	50	53	0
Welder	1	73	40%	230	60	56	59	0	240	59	55	58	0	450	54	50	53	0	475	53	49	52	0

A - Upper South				R1					R2					R3					R4				
Construction Phase Equipment Type	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA
Pipeline Trenching and Installation-DC				92	89				90	86				75	71				74	70			
Drum Mixer	1	80	50%	30	84	81	84	0	40	82	79	82	0	250	66	63	66	0	275	65	62	65	0
Excavator	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Generator	1	82	50%	30	86	83	86	0	40	84	81	84	0	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	230	67	60	63	0	240	66	59	62	0	450	61	54	57	0	475	60	53	56	0
Vacuum Street Sweeper	1	80	10%	230	67	57	60	0	240	66	56	59	0	450	61	51	54	0	475	60	50	53	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Welder	1	73	40%	230	60	56	59	0	240	59	55	58	0	450	54	50	53	0	475	53	49	52	0
Vault Structure Excavation-DC				91	87				88	84				73	69				72	68			
Excavator	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	72	62	65	0	140	71	61	64	0	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	84	80	83	0	40	82	78	81	0	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Vault Structure Installation-DC				92	87				90	84				75	69				74	68			
Compressor (air)	1	80	40%	30	84	80	83	0	40	82	78	81	0	250	66	62	65	0	275	65	61	64	0
Crane	1	85	16%	30	89	81	84	0	40	87	79	82	0	250	71	63	66	0	275	70	62	65	0
Forklift	1	75	10%	230	62	52	55	0	240	61	51	54	0	450	56	46	49	0	475	55	45	48	0
Generator	1	82	50%	30	86	83	86	0	40	84	81	84	0	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	67	57	60	0	240	66	56	59	0	450	61	51	54	0	475	60	50	53	0
Surge Tank Excavation-DC				91	87				88	84				73	69				72	68			
Excavator	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	72	62	65	0	140	71	61	64	0	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	84	80	83	0	40	82	78	81	0	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Surge Tank Installation-DC				94	89				91	86				76	71				75	70			
Compressor (air)	1	80	40%	130	72	68	71	0	140	71	67	70	0	350	63	59	62	0	375	62	59	62	0
Crane	1	85	16%	30	89	81	84	0	40	87	79	82	0	250	71	63	66	0	275	70	62	65	0
Generator	1	82	50%	30	86	83	86	0	40	84	81	84	0	250	68	65	68	0	275	67	64	67	0
Grader	1	85	40%	30	89	85	88	0	40	87	83	86	0	250	71	67	70	0	275	70	66	69	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	72	65	68	0	140	71	64	67	0	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	67	57	60	0	240	66	56	59	0	450	61	51	54	0	475	60	50	53	0
Welder	1	73	40%	230	60	56	59	0	240	59	55	58	0	450	54	50	53	0	475	53	49	52	0

Project: Inland Feeder**Construction Noise Impact on Sensitive Receptors****Mitigated****Parameters**

Leq to L10 factor	3
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				West 30					East 40					North 250					West 275				
				R1					R2					R3					R4				
Construction Phase Equipment Type	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shieldin g, dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding , dBA
Pipeline Trenching and Installation-SC				30	87	84			40	85	81			250	75	71			275	74	70		
Drum Mixer	1	80	50%	30	79	76	79	5	40	77	74	77	5	250	66	63	66	0	275	65	62	65	0
Excavator	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Generator	1	82	50%	30	81	78	81	5	40	79	76	79	5	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	230	62	55	58	5	240	61	54	57	5	450	61	54	57	0	475	60	53	56	0
Vacuum Street Sweeper	1	80	10%	230	62	52	55	5	240	61	51	54	5	450	61	51	54	0	475	60	50	53	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Welder	1	73	40%	230	55	51	54	5	240	54	50	53	5	450	54	50	53	0	475	53	49	52	0
Vault Structure Excavation-SC				30	86	82			40	83	79			250	73	69			275	72	68		
Excavator	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	67	57	60	5	140	66	56	59	5	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	79	75	78	5	40	77	73	76	5	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Vault Structure Installation-SC				30	87	82			40	85	79			250	75	69			275	74	68		
Compressor (air)	1	80	40%	30	79	75	78	5	40	77	73	76	5	250	66	62	65	0	275	65	61	64	0
Crane	1	85	16%	30	84	76	79	5	40	82	74	77	5	250	71	63	66	0	275	70	62	65	0
Forklift	1	75	10%	230	57	47	50	5	240	56	46	49	5	450	56	46	49	0	475	55	45	48	0
Generator	1	82	50%	30	81	78	81	5	40	79	76	79	5	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	62	52	55	5	240	61	51	54	5	450	61	51	54	0	475	60	50	53	0
Surge Tank Excavation-SC				30	86	82			40	83	79			250	73	69			275	72	68		
Excavator	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	67	57	60	5	140	66	56	59	5	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	79	75	78	5	40	77	73	76	5	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Surge Tank Installation-SC				130	89	84			140	86	81			350	76	71			375	75	70		
Compressor (air)	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Crane	1	85	16%	30	84	76	79	5	40	82	74	77	5	250	71	63	66	0	275	70	62	65	0
Generator	1	82	50%	30	81	78	81	5	40	79	76	79	5	250	68	65	68	0	275	67	64	67	0
Grader	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	62	52	55	5	240	61	51	54	5	450	61	51	54	0	475	60	50	53	0
Welder	1	73	40%	230	55	51	54	5	240	54	50	53	5	450	54	50	53	0	475	53	49	52	0

				R1					R2					R3					R4				
Construction Phase	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding, dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding, dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding, dBA	Distance (ft)	Lmax	Leq	L10	Estimate d Noise Shielding, dBA
Pipeline Trenching and Installation-DC					87	84				85	81				75	71				74	70		
Drum Mixer	1	80	50%	30	79	76	79	5	40	77	74	77	5	250	66	63	66	0	275	65	62	65	0
Excavator	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Generator	1	82	50%	30	81	78	81	5	40	79	76	79	5	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	230	62	55	58	5	240	61	54	57	5	450	61	54	57	0	475	60	53	56	0
Vacuum Street Sweeper	1	80	10%	230	62	52	55	5	240	61	51	54	5	450	61	51	54	0	475	60	50	53	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Welder	1	73	40%	230	55	51	54	5	240	54	50	53	5	450	54	50	53	0	475	53	49	52	0
Vault Structure Excavation-DC					86	82				83	79				73	69				72	68		
Excavator	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	67	57	60	5	140	66	56	59	5	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	79	75	78	5	40	77	73	76	5	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Vault Structure Installation-DC					87	82				85	79				75	69				74	68		
Compressor (air)	1	80	40%	30	79	75	78	5	40	77	73	76	5	250	66	62	65	0	275	65	61	64	0
Crane	1	85	16%	30	84	76	79	5	40	82	74	77	5	250	71	63	66	0	275	70	62	65	0
Forklift	1	75	10%	230	57	47	50	5	240	56	46	49	5	450	56	46	49	0	475	55	45	48	0
Generator	1	82	50%	30	81	78	81	5	40	79	76	79	5	250	68	65	68	0	275	67	64	67	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	62	52	55	5	240	61	51	54	5	450	61	51	54	0	475	60	50	53	0
Surge Tank Excavation-DC					86	82				83	79				73	69				72	68		
Excavator	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Vacuum Street Sweeper	1	80	10%	130	67	57	60	5	140	66	56	59	5	350	63	53	56	0	375	62	52	55	0
Tractor/Loader/Backhoe	1	80	40%	30	79	75	78	5	40	77	73	76	5	250	66	62	65	0	275	65	61	64	0
Tractor/Loader/Backhoe	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Surge Tank Installation-DC					89	84				86	81				76	71				75	70		
Compressor (air)	1	80	40%	130	67	63	66	5	140	66	62	65	5	350	63	59	62	0	375	62	59	62	0
Crane	1	85	16%	30	84	76	79	5	40	82	74	77	5	250	71	63	66	0	275	70	62	65	0
Generator	1	82	50%	30	81	78	81	5	40	79	76	79	5	250	68	65	68	0	275	67	64	67	0
Grader	1	85	40%	30	84	80	83	5	40	82	78	81	5	250	71	67	70	0	275	70	66	69	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Compactor (ground)	1	80	20%	130	67	60	63	5	140	66	59	62	5	350	63	56	59	0	375	62	56	59	0
Vacuum Street Sweeper	1	80	10%	230	62	52	55	5	240	61	51	54	5	450	61	51	54	0	475	60	50	53	0
Welder	1	73	40%	230	55	51	54	5	240	54	50	53	5	450	54	50	53	0	475	53	49	52	0

Inland Feeder**Table I. Off-Site Structural Vibration Impacts**

Receptor	Type of Building	Equipment	Reference Distance	Reference Level ^a	Distance to Receptor (ft) ^b	Impact Level	Threshold	Exceeds Threshold?
				PPV (in/sec)		PPV (in/sec)	PPV (in/sec) ^a	
Residential Buildings	Residential Buildings	Loaded Trucks	25	0.076	25	0.076	0.20	No
		Loaded Trucks	25	0.076	50	0.027	0.20	No
		Loaded Trucks	25	0.076	60	0.020	0.20	No
		Loaded Trucks	25	0.076	75	0.015	0.20	No
		Loaded Trucks	25	0.076	100	0.010	0.20	No

Notes:

a. Caltrans Transportation and Construction Vibration Guidance Manual (2020), Table 15 and Table 18

b. Distances represent the closest measurement from project building footprint to closest building footprint

INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Response to Comments Received

The Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012



Report Number ER 1694

July 2024

Comment Letters

This document includes comments received during the public review period of the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Inland Feeder – Foothill Pump Station Intertie Project (proposed Project). This document includes a copy of the one comment letter submitted during the 32-day public review period for the IS/MND, which was submitted by the San Bernardino Valley Water Conservation District (SBVWCD; District).

Although not required by the California Environmental Quality Act (CEQA) or the CEQA Guidelines, the Metropolitan Water District of Southern California (Metropolitan) is providing written responses to comments received on the IS/MND for the proposed Project as part of the administrative record and for the Metropolitan Board of Directors (Board) to review when considering adoption of the IS/MND. In accordance with the requirements of CEQA Guidelines Section 15073(e), Metropolitan will provide notification in writing to the commenters 10 days in advance of the Board meeting to adopt the MND for the proposed Project.

The comment letter received during the public review period is listed in **Table 1-1**. The letter has been marked with brackets that delineate comments pertaining to environmental issues and the information and analysis contained in the IS/MND. Responses to comments are provided below.

**TABLE 1-1
COMMENT LETTERS RECEIVED**

Comment Letter No.	Commenter	Date of Comment
1	Betsy Miller - San Bernardino Valley Water Conservation District (SBVWCD; District)	June 17, 2024

June 17, 2024

Ms. Michelle Morrison
Environmental Planning Section
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, California 90054

RE: Notice of Intent to Adopt a Mitigated Negative Declaration for the Inland Feeder-Foothill Pump Station Intertie Project

Dear Ms. Morrison,

The San Bernardino Valley Water Conservation District (District) appreciates the opportunity to comment on the Initial Study/Mitigated Negative Declaration (IS/MND) for the Inland Feeder-Foothill Pump Station Intertie Project (Project) proposed by the Metropolitan Water District of Southern California (Metropolitan) and note our support for projects that increase regional water reliability.

In addition to recharging the Bunker hill groundwater basin for over a century, the District is the lead Permittee for the adopted Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan). The Wash Plan is the culmination of two decades of coordination among the District and our Task Force partners to develop an integrated approach to permit and mitigate construction and maintenance activities within the Wash area, including water conservation, wells and water infrastructure, aggregate mining, transportation, flood control, agriculture, trails, and habitat enhancement. Members in the Task Force include the District, County of San Bernardino, the Cities of Highland and Redlands, Redlands Municipal Utility District, BLM, Cemex Inc., Robertson's Ready-Mix, East Valley Water District, San Bernardino Valley Municipal Water District, and San Bernardino County Flood Control District. The Wash Plan conserves and protects the following listed species: Santa Ana River woolly-star (Woolly-star), San Bernardino kangaroo rat (SBKR), Coastal California gnatcatcher (CAGN), and Slender-horned spinyflower (SHSF). Additionally, the Wash Plan serves as mitigation for several infrastructure projects within the area.

While the District does not appear to be listed as a CEQA Responsible Agency, we request consideration of the following comments on the IS/MND:

1. As noted in the IS/MND (section 3.4), the southwestern portion of the proposed Project area is situated within the Wash Plan boundary and District Conserved Lands. Overlap of the proposed Project area to District owned properties is also noted in Section 1.5.2. We appreciate recognition of the Wash Plan as an adopted Habitat Conservation Plan which lies adjacent to, and shares overlap with, the proposed Project boundary. We kindly request consideration of mention of the Wash Plan in other applicable sections of the IS/MND.

1-1

1-2

2. The Wash Plan Habitat Conservation Plan was adopted in 2020. We kindly request a correction be made to the adoption date noted in section 3.4 of the IS/MND. 1-3
3. Access through or use of District owned properties absent of an easement agreement will require authorization through an Access Permit with the District. When requesting an Access Permit, we recommend early coordination with the District. Please contact the District contact below to initiate coordination. To the extent that the area of which Metropolitan seeks easements or rights of entry have been transferred to the Bureau of Land Management (BLM) under the legislation noted in the footnote to table 1-3, said rights would be secured from BLM. 1-4
4. We understand from section 3.4 that the proposed project would result in permanent and temporary impacts within the Wash Plan boundary and District Conserved Lands. We appreciate the commitment to restore areas of temporary impact to prior conditions as well as the plans to implement mitigation measures complementary to the proposed timeline of the Wash Plan through the implementation of BIO-3 to fully mitigate for the permanent loss of habitat otherwise to serve as compensatory mitigation for activities covered under the HCP. 1-5
5. We understand from section 3.4 that SBKR, CAGN, SHSF, and Woolly-star are subject to direct and indirect impacts resulting from proposed construction activities. We further understand that ground disturbance and vegetation removal activities may result in “take” of SBKR and CAGN. SBKR, CAGN, SHSF, and Woolly-star are Covered Species under the Wash Plan; however, we note that the planned implementation of standard best practices and mitigation measures are tied to project-specific permits given that the proposed Project and associated activities are not covered under the Wash Plan. 1-6
6. If nighttime construction activities are to occur as noted in section 1.5.1, the District kindly suggests implementation of light and noise measures in order to minimize disturbance to wildlife within the Wash Plan Preserve. 1-7

If it may be of use, the Wash Plan is available online at <https://www.sbvwd.org/our-projects/upper-santa-ana-wash-land-management-and-habitat-conservation-plan-wash-plan/>

Please feel free to contact Milan Mitrovich at 909-793-2503 or mmitrovich@sbvwd.org with any questions or comments. We appreciate the opportunity to comment, and request to be included on future project notifications as well.

Sincerely,



Betsy Miller
General Manager

1-8

Response to Comment Letter 1

Letter 1: Betsy Miller, General Manager (San Bernardino Valley Water Conservation District)

Date: June 17, 2024

Response 1-1

The commentor provides an introduction to the comment letter and notes support for projects that increase regional water reliability as the lead Permittee for the Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan). The SBVWCD recognizes that it is not listed as a CEQA Responsible Agency and the request for consideration of the following comments on the IS/MND is noted.

Response 1-2

The commentor states that the SBVWCD is noted in Section 1.5.2 and the Wash Plan is recognized in Section 3.4 and requests mention of the Wash Plan in other applicable Sections. Metropolitan acknowledges that SBVWCD owned properties and the Wash Plan boundary are within proposed Project Area in Figure 1-4 (Parcel Ownership), Table 1-3 (Discretionary Permits and Easements Potentially Required), and Section 2.3 (Initial Study; Other public agencies whose approval is required).

Response 1-3

The commentor states that the Wash Plan was adopted in 2020, not 2022, and requests correction. Metropolitan acknowledges the request for correction and shall change the Wash Plan adoption date to 2020 in the IS/MND. In response to the comment, the following revision to page 55 of the IS/MND has been made:

The Wash Plan HCP was prepared by SBVWCD and officially adopted in 2020 ~~2022~~.

Response 1-4

The commentor states that access through or use of District-owned properties will require an Access Permit and recommends early coordination with the District. Metropolitan acknowledges that access through or use of District owned properties will require authorization through an Access Permit with the District and acknowledges the contact personnel specified by the District. Metropolitan shall coordinate rights of entry or easement with all applicable property owners.

Response 1-5

The commentor states that the District appreciates the commitment to implement mitigation measures complementary to the proposed timeline of the Wash Plan. Metropolitan acknowledges this comment and appreciates the District's review of the proposed Project in relation to the Wash Plan. All Project mitigation measures will be implemented in accordance with the adopted Mitigation Monitoring and Reporting Program.

Response 1-6

The commentor states that the IS/MND describes potential direct and indirect impacts to special-status plant and wildlife species, and planned implementation of standard best practices and mitigation measures are tied to project-specific permits, given that the proposed Project is not covered under the Wash Plan. Metropolitan acknowledges this comment. In regard to proposed Project impacts to special-status plants, in June 2024, Metropolitan conducted a rare plant survey of the proposed Project Area in accordance with the California Department of Fish and Wildlife's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. No rare or special-status plant species were observed during the June survey. Additionally, all Project mitigation measures will be implemented in accordance with the adopted Mitigation Monitoring and Reporting Program.

Response 1-7

The commentor states that the SBVWCD suggests implementation of light and noise measures to minimize disturbance to wildlife within the Wash Plan Preserve if nighttime construction activities are to occur. Metropolitan acknowledges this comment. The implementation of light and noise measures is described in several sections of the IS/MND and Appendix A (Metropolitan Standard Practices). Page 16 of the IS/MND (and Appendix A) describes that floodlights would be directed to shine downward and shielded to avoid a nuisance to the surrounding areas and no lighting would be directed toward a residence or natural areas as part of Metropolitan Standard Practices. Appendix A also describes that the Contractor shall perform all work without undue noise and shall make every effort to alleviate or prevent noise nuisances as part of Metropolitan Standard Practices. Page 90 of the IS/MND, implementation of Mitigation Measure NOI-1, would reduce the Project's on-site construction noise impacts at noise sensitive receptors.

Response 1-8

The commentor states that Wash Plan is available online for reference and provides contact information for any questions or comments. Metropolitan acknowledges this comment. The comment does not state a specific concern about the adequacy of the IS/MND or otherwise comment on the contents of the IS/MND analysis. The comment is noted and will be included in the project record, but a response is not required pursuant to CEQA.

INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Mitigation Monitoring and Reporting Program

The Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012



Report Number ER 1694

July 2024

Mitigation Monitoring and Reporting Program

The Mitigation Monitoring and Reporting Program (MMRP) for the proposed Inland Feeder – Foothill Pump Station Intertie Project (proposed Project) has been prepared in accordance with Public Resources Code Section 21081.6 and State CEQA Guidelines Section 15091(d). Metropolitan will use this MMRP to track compliance with the proposed Project mitigation measures.

Metropolitan's Board of Directors will consider the MMRP during the adoption hearing for the Initial Study/Mitigated Negative Declaration (IS/MND). The MMRP will incorporate all mitigation measures adopted for the proposed Project.

This MMRP summarizes mitigation commitments identified in the IS/MND. Table 1-1 provides the MMRP which includes all mitigation measures, monitoring timing, and responsible persons/agency for implementation. Impacts and mitigation measures are presented in the same order as in the project MND. The columns in the table provide the following information:

- **Mitigation Measures:** This column lists the action(s) that will be taken to reduce the impact to a less-than-significant level.
- **Implementation Party:** This column lists the party responsible for implementation of the mitigation measure.
- **Timing of Implementation:** This column indicates the general schedule for conducting each monitoring task, either prior to construction, during construction, and/or after construction.
- **Responsible Party:** This column lists the agency responsible for ensuring implementation of the mitigation measure.

MITIGATION MONITORING AND REPORTING PROGRAM
INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Mitigation Measure	Implementation Party	Timing of Implementation	Responsible Party
Biological Resources			
BIO-1: Prevention of Inadvertent Entrapment. To prevent inadvertent entrapment of common and special-status wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with tarp, plywood or similar materials at the close of each working day and shall be inspected visually to confirm animals would be excluded, to prevent animals from being trapped. Ramps may be constructed of earth fill or wooden planks within deep walled trenches to allow animals to escape, if necessary. Before such holes or trenches are backfilled, they should be thoroughly inspected for trapped animals. If trapped wildlife is observed, escape ramps or structures will be installed immediately to allow escape.	Metropolitan Qualified Biologist	During Construction	Metropolitan
BIO-2: Special Status Plants. Prior to construction activities that could potentially remove special-status plants, a qualified botanist shall conduct a pre-construction floristic inventory and focused rare plant survey to determine and map the location and extent of special-status plant species populations within disturbance areas within suitable habitat. This survey shall occur during the typical blooming periods of special-status plants with the potential to occur: Parry's spineflower (<i>Chorizanthe parryi</i> var. <i>parryi</i> ; CRPR 1B.1; blooming period April – June), Plummer's mariposa lily (<i>Calochortus plummerae</i> ; CRPR 4.2; blooming period May – July), Robinson's pepper-grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i> ; CRPR 4.3; blooming period January – July), Santa Ana River woollystar (<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> ; FE, SE, CRPR 1B.1; blooming period April – September), and slender-horned spineflower (<i>Dodecahema leptoceras</i> ; FE, SE, CRPR 1B.1; blooming period April–June). The plant survey shall follow the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018). If special-status plants are not identified within the proposed Project Area, then ground-disturbing activities may commence. If special-status plants are detected and Project-related impacts are unavoidable, then the preparation and implementation of a special-status species salvage, seed collection, and replanting plan would be required, and consultation with the regulatory agencies would be required to address potential take of listed plant species. The salvage, seed collection, and replanting plan shall include measures to salvage, collect seed, replant, and monitor the disturbance area until native vegetation is re-established. Pre-construction special-status plant surveys are scheduled to be conducted in 2024. If construction does not begin by 2027, a qualified botanist shall conduct an additional pre-construction floristic inventory and focused rare plant survey in accordance with the guidance above during the appropriate blooming period the year prior to the commencement of proposed Project activities.	Metropolitan Qualified Biologist	Prior to Construction	Metropolitan
BIO-3: Compensation for Impacts to Federally and State-Listed Plant and Wildlife Species Habitat. Direct temporary and permanent impacts to suitable habitat for federally or state-listed species shall be mitigated through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies. Temporary Impacts. Mitigation for direct temporary impacts to suitable habitat for federally or state-listed species shall be provided through on-site restoration. Areas temporarily impacted shall be returned to similar conditions to those that existed prior to grading and/or ground-disturbing activities. Permanent Impacts. Metropolitan shall purchase credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies to compensate for all permanent loss of suitable habitat for federally or state-listed species (including critical habitat), if available, at a 1:1 ratio.	Metropolitan	Prior to Construction	Metropolitan

Mitigation Measure	Implementation Party	Timing of Implementation	Responsible Party
<p>BIO-4: Nesting Birds/Raptors and Special-Status Birds. Proposed Project activities could negatively impact nesting birds that are protected in accordance with the MBTA and FGC, as well as other special-status avian species, such as the Bell's sparrow, burrowing owl, California horned lark, coastal California gnatcatcher, loggerhead shrike, and Southern California rufous-crowned sparrow. No physical disturbance of vegetation, operational structures, buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the MBTA and FGC shall occur in the breeding season, except as necessary to respond to public health and safety concerns, or otherwise authorized by the Engineer. The breeding season extends from February 15 through August 31 for passerines and general nesting and from January 1 through August 31 for raptors.</p> <ul style="list-style-type: none"> If nesting habitat (including annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover types within the Study Area) must be cleared or proposed Project activities must occur within 500 feet of nesting habitat within the breeding season as defined above, a qualified biologist shall perform a nesting bird survey no more than three days prior to clearing or removal of nesting habitat or start of proposed Project activities. Surveys will be performed in all Metropolitan accessible areas (fee property and easements) and inaccessible areas will be visually surveyed to their full extent without trespassing. If active nests for sensitive species, raptors and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures, as appropriate, shall be established, as identified by a qualified biologist and approved by the Engineer. Construction avoidance buffers are generally 300 feet for non-listed passerines and 500 feet for listed avian species (i.e., coastal California gnatcatcher) and raptors; however, avoidance buffers may be modified at the discretion of the biologist, depending on the species, location of the nest and species tolerance to human presence and construction-related noises and vibrations. The buffer shall be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing shall not be conducted within this zone until the young have fledged and are no longer reliant on the nest. Additional measures may include (but are not limited to): construction avoidance until the nest is no longer active, noise attenuation measures to reduce construction noise levels to below 60 dBA Leq (an hourly measurement of A-weighted decibels) or ambient (if existing ambient levels are above 60 dBA), and biological monitoring during construction activities to ensure the species is not harmed during proposed Project implementation. A qualified biologist shall monitor active nests or nesting bird habitat within or immediately adjacent to the proposed Project construction areas, and the Engineer shall provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds. 	Metropolitan Qualified Biologist	Prior to Construction During Construction	Metropolitan
<p>BIO-5: Crotch Bumble Bee. If removal of suitable Crotch bumble bee foraging and/or nesting habitat within the California buckwheat – brittle bush scrub is required, the following measures shall be implemented:</p> <ul style="list-style-type: none"> A qualified entomologist familiar with the species' behavior and life history shall conduct surveys to determine presence/absence of the Crotch bumble bee within the year prior to vegetation removal and/or grading in areas that provide suitable habitat for this species. A minimum of three surveys, ideally 2-4 weeks apart, should also be conducted during peak flying season when the species is most likely to be detected above ground, between March 1 to September 1 and during peak bloom of nectaring resources (Thorp et al. 1983; CDFW 2023c). At minimum, a survey report should provide the following: 	Metropolitan Qualified Biologist	Prior to Construction During Construction	Metropolitan

Mitigation Measure	Implementation Party	Timing of Implementation	Responsible Party
<ul style="list-style-type: none"> ○ A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch bumble bee. ○ Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched. ○ Map(s) showing the location of nests/colonies. ○ A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species). • If Crotch bumble bee is detected, the qualified entomologist should identify the location of all nests within and adjacent to the proposed Project Area. A 15-meter (50-foot) no disturbance buffer zone should be established around any identified nest(s) to reduce the risk of disturbance or accidental take. A qualified entomologist should expand the buffer zone as necessary to prevent disturbance or take. • If Crotch bumble bee impacts cannot be feasibly avoided, Metropolitan would obtain appropriate take authorization from CDFW (pursuant to FGC, § 2080 et seq), and replace habitat at a 1:1 ratio, or as determined in consultation with CDFW. 			
<p>BIO-6: Western Spadefoot. Although limited suitable breeding habitat is present within the constructed basin and associated drainage located in the proposed Project Area, proposed Project activities could negatively impact suitable western spadefoot upland habitat, including all of the natural communities and excluding the disturbed and developed land cover, within the small mammal burrows located in the proposed Project Area. Therefore, the following measures are required to avoid impacts to this species.</p> <ul style="list-style-type: none"> • A qualified biologist shall survey areas of suitable habitat for western spadefoot in the proposed Project Area, including ruts, small pools, and the constructed basin and associated drainage. The survey shall be conducted during the active season of western spadefoot (which corresponds with the rainy season). • If surveys result in the observation of western spadefoot within proposed Project Area, observed individuals and/or eggs shall be removed from proposed Project Area and be relocated to pre-determined suitable habitat in an appropriate area that will not be impacted. • For work during the western spadefoot toad migration and breeding season (November 1 to May 31), a qualified biologist will survey the active work areas (including access roads) in the mornings following measurable precipitation events. Construction may commence upon confirmation from the biologist that no western spadefoot toads are in the work area. • When feasible, a 50-foot avoidance buffer will be maintained around burrows that provide suitable upland habitat for western spadefoot toad, as identified by a qualified biologist. The biologist will delineate and mark the no-disturbance buffer. • If western spadefoot toad is found within the construction footprint, it will be allowed to move out of harm's way on its own accord or a qualified biologist will relocate it to the nearest suitable burrow outside of the construction impact area. • Prior to beginning work, a qualified biologist will inspect underneath equipment and stored pipes greater than 1.2 inches (3 cm) in diameter for western spadefoot toad. If found, they will be allowed to move out of the construction area on their own accord. 	Metropolitan Qualified Biologist	Prior to Construction During Construction	Metropolitan

Mitigation Measure	Implementation Party	Timing of Implementation	Responsible Party
<p>BIO-7: San Bernardino Kangaroo Rat Pre-Construction Presence/Absence Trapping Surveys. Prior to ground disturbing activities within areas with potential habitat for SBKR or other sensitive small mammals, a qualified SBKR biologist with a required Section 10(a) permit will conduct pre-construction presence/absence trapping surveys. These surveys will follow protocols and trapping methods approved by the regulatory agencies to determine the presence/absence of SBKR and other sensitive small mammals on-site.</p> <ul style="list-style-type: none"> If pre-construction presence/absence trapping surveys within the Stage 1 area are negative, then exclusionary fencing (Mitigation Measure BIO-8) will be installed. If results from the trapping surveys demonstrate that SBKR are present within the Stage 1 proposed Project Area, an ITP will need to be obtained. Construction within occupied habitat areas will not proceed until appropriate authorization (i.e., FESA and/or CESA Incidental Take Permit (ITP) is obtained. Stage 2 construction will not commence until appropriate authorization (i.e., FESA and/or CESA ITP) is obtained. Implementation of protection measures and compensatory mitigation for SBKR, in addition to those identified in this document, will be required as conditions of federal and state take permits. 	Metropolitan Qualified Biologist	Prior to Construction	Metropolitan
<p>BIO-8: San Bernardino Kangaroo Rat Exclusionary Fencing. Exclusionary fencing will be erected in construction areas with potential to be occupied by SBKR or containing kangaroo rat sign (e.g., burrows, scat, tail drag, or dust baths) as determined by a preconstruction survey conducted by a qualified biologist.</p> <ul style="list-style-type: none"> A qualified biologist or approved biological monitor will be present on-site when the fence is installed to minimize disturbance of SBKR burrows from fence installation. The integrity of the fencing will be checked by a qualified biologist at the end of each workday. Any gaps will be repaired immediately. Construction access openings will be closed and secured at the end of each workday using the at-grade fencing method. The fence will remain in place for the duration of construction activities and removed at the completion of the relevant proposed Project activity. Stage 1 exclusionary fencing will be installed at grade to minimize the risk of unauthorized take. 	Metropolitan Qualified Biologist	Prior to Construction During Construction	Metropolitan
<p>BIO-9: San Bernardino Kangaroo Rat and General Construction Monitoring.</p> <p>SBKR Biologist. A qualified biologist or approved biological monitor shall visually inspect trenches and steep-walled holes before the onset of daily construction for presence of SBKR. If SBKR are discovered, the biologist shall supervise the movement or relocation of the equipment until the animal has left the area on its own.</p> <ul style="list-style-type: none"> To the extent feasible, soil stockpiles in SBKR habitat will be located within the construction area inside the exclusionary fence or within the existing facility in areas devoid of vegetation. Nighttime work shall be avoided as much as possible. If nighttime work is necessary, all lighting shall be directed exclusively at the work area to avoid areas that support local wildlife movement, such as ephemeral drainages, to the greatest extent practical. Any nighttime lighting shall be shielded downward to avoid light spillage into the surrounding areas. <p>Limits of Disturbance. Prior to construction in or adjacent to habitats for special-status species, and under the direction of a qualified biologist, Metropolitan shall clearly delineate the construction right-of-way (stake, flag, fence, etc.) that restricts the limits of construction to the minimum necessary to implement the proposed Project.</p>	Metropolitan Qualified Biologist	Prior to Construction During Construction	Metropolitan

Mitigation Measure	Implementation Party	Timing of Implementation	Responsible Party
<p>Biological Monitoring. Prior to the start of construction, Metropolitan shall retain a qualified biological monitor(s) to be on-site during the initial ground disturbance and during construction activities to monitor habitat conditions and impacts. The biological monitor will ensure compliance with mitigation measures and will have the authority to halt or suspend all activities until appropriate corrective measures have been taken. The biological monitor shall be a qualified biologist with species expertise appropriate for the proposed Project.</p> <p>On-Site Overnight Storage. All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods should be thoroughly inspected for birds and other wildlife before the pipe is subsequently buried, capped, or otherwise used or moved.</p>			
<p>BIO-10: Special-Status Ground-Dwelling Wildlife. A qualified biologist shall conduct a preconstruction clearance survey throughout the proposed Project Area. If any special-status ground-dwelling wildlife, protected in accordance with CESA and FGC, such as the Belding's orange-throated whiptail, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, Southern California legless lizard, and southern grasshopper mouse are observed during the survey, a qualified biologist should relocate the individual to suitable habitat adjacent to the proposed Project Area.</p>	Metropolitan Qualified Biologist	Prior to Construction	Metropolitan
<p>BIO-11: Burrowing Owl. Prior to the initiation of any ground disturbing activities within 500 feet of suitable burrowing owl habitat, including all of the natural communities and land cover types within the Study Area, focused surveys for burrowing owl shall be conducted by a qualified biologist throughout the Study Area following the most current CDFW required protocol for the species. If the qualified biologist finds evidence of burrowing owls during the burrowing owl breeding season (February 1 through August 31), all Project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance includes establishment of a minimum 300-foot buffer zone around nests. Construction and other proposed Project-related activities may occur outside of the 300-foot buffer zone. Construction and other proposed Project-related activities may be allowed inside of the 300-foot avoidance buffer during the breeding season if the nest is not disturbed, and the proposed Project activities are monitored by a qualified biologist.</p>	Metropolitan Qualified Biologist	Prior to Construction During Construction	Metropolitan
Noise			
<p>NOI-1: Temporary Noise Barriers. Temporary noise barriers shall be used along the western and eastern property boundaries to block the line-of-sight between the construction equipment and the noise sensitive receptors.</p>	Metropolitan	During Construction	Metropolitan