



E&O Committee

T. Smith, Chair
Vacant, Vice Chair
R. Apodaca
S. Blois
M. Camacho
D. De Jesus
L. Dick
S. Faessel
R. Lefevre
J. Morris
G. Peterson
H. Repenning
H. Williams

Engineering and Operations Committee

Meeting with Board of Directors *

February 7, 2022

10:30 a.m.

Teleconference meetings will continue through the end of the year. Live streaming is available for all board and committee meetings on mwdh2o.com ([Click Here](#))

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Monday, February 7, 2022 Meeting Schedule

08:30 a.m. - F&I
10:30 a.m. - E&O
12:00 p.m. - Break
12:30 p.m. - WP&S
02:00 p.m. - C&L

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

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

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

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

2. CONSENT CALENDAR OTHER ITEMS - ACTION

- A. Approval of the Minutes of the Meeting of the Engineering and Operations Committee held January 10, 2022

[21-856](#)

Attachments: [02072022 EO 2A minutes.pdf](#)

3. CONSENT CALENDAR ITEMS - ACTION

- 7-2** Award three professional services agreements to support rehabilitation projects at the Colorado River Aqueduct pumping plants: (1) an agreement with Parsons Transportation Group Inc. in an amount not to exceed \$2,650,000; (2) an agreement with Jacobs Engineering Group Inc. in an amount not to exceed \$650,000; and (3) an agreement with Tetra Tech, Inc. in an amount not to exceed \$650,000; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-800**

Attachments: [02082022 EO 7-2 B-L.pdf](#)
[02082022 EO 7-2 Presentation.pdf](#)

- 7-3** Authorize an agreement with La Cañada Design Group, Inc., in an amount not to exceed \$4,400,000 for preliminary design to upgrade Metropolitan's Water Quality Laboratory, and an agreement with Rincon Consultants, Inc., in an amount not to exceed \$550,000 for environmental support services; the General Manager has determined that this proposed action is exempt or otherwise not subject to CEQA **21-801**

Attachments: [02082022 EO 7-3 B-L.pdf](#)
[02082022 EO 7-3 Presentation.pdf](#)

- 7-4** Amend the Capital Investment Plan for fiscal years 2020/2021 and 2021/2022 to include planning and implementation of infrastructure projects to improve water supply reliability for the west service area and authorize an agreement with Carollo Engineers, Inc. in an amount not to exceed \$300,000 for professional services; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA **21-802**

Attachments: [02082022 EO 7-4 B-L.pdf](#)
[02082022 EO 7-4 Presentation.pdf](#)

- 7-5** Review and consider Addendum No. 4 to the certified 2017 Programmatic Environmental Impact Report; and award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of a valve and equipment storage building at the Lake Mathews Reservoir site to support the Prestressed Concrete Cylinder Pipe Rehabilitation Program **21-803**

Attachments: [02082022 EO 7-5 B-L.pdf](#)
[7-5 Attachment 5 – Addendum No. 4 to Final PEIR.pdf](#)
[7-5 Attachment 6 - PCCP Final PEIR Vol 1.pdf](#)
[7-5 Attachment 7 - PCCP Final PEIR Vol 2.pdf](#)
[02082022 EO 7-5 Presentation.pdf](#)

**** END OF CONSENT CALENDAR ITEMS ******4. OTHER BOARD ITEMS - ACTION**

NONE

5. BOARD INFORMATION ITEMS

NONE

6. COMMITTEE ITEMS

- a. Metropolitan's Health and Safety Program Update

[21-837](#)

Attachments: [02072022 EO 6a Presentation.pdf](#)

- b. Source Water Protection Update

[21-838](#)

Attachments: [02072022 EO 6b Presentation.pdf](#)

7. MANAGEMENT REPORTS

- a. Water System Operations Manager's Report

[21-835](#)

Attachments: [02072022 EO 7a Presentation.pdf](#)

- b. Engineering Services Manager's Report

[21-836](#)

Attachments: [02072022 EO 7b Presentation.pdf](#)

8. FOLLOW-UP ITEMS

NONE

9. FUTURE AGENDA ITEMS**10. ADJOURNMENT**

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

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

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

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MINUTES

ENGINEERING AND OPERATIONS COMMITTEE

January 10, 2022

Chair Smith called the teleconference meeting to order at 10:00 a.m.

Members present: Chair Smith, Directors Apodaca, Blois, De Jesus, Dick, Faessel, Lefevre, Morris, Peterson, Repenning (entered after roll call) and Williams

Members absent: Director Camacho

Other Board members present: Directors Abdo, Ackerman, Atwater, Cordero, Dennstedt, Erdman, Fellow, Fong-Sakai, Goldberg, Gray, Hawkins, Jung, McCoy, Miller, Record and Tamaribuchi

Committee staff present: Bednarski, Hagekhalil, Okano, Parsons, Scully, Upadhyay, and Yamasaki

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

None

CONSENT CALENDAR OTHER ITEMS – ACTION

2. CONSENT CALENDAR OTHER ITEMS – ACTION

- A. Approval of the Minutes of the Meeting of the Engineering and Operations Committee held December 13, 2021.

3. CONSENT CALENDAR ITEMS – ACTION

- 7-1 Subject: Authorize on-call agreements with Aspen Environmental Group and Environmental Science Associates in amounts not to exceed \$750,000 per year each, for a maximum of four years for environmental planning services to support O&M and board-authorized Capital Investment Plan projects; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Presented by: No presentation given.

Motion: Authorize on-call agreements with Aspen Environmental Group and Environmental Science Associates, in an amount not to exceed \$750,000 per year each, for a maximum of four years for environmental planning services to support O&M and board-authorized Capital Investment Plan projects.

7-2 Subject: Award a \$1,936,977 contract to All American Asphalt for pavement rehabilitation at the Robert A. Skinner Water Treatment Plant; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Presented by: No presentation given.

Motion: Award a \$1,936,977 contract to All American Asphalt for the rehabilitation of asphalt pavement at the Skinner plant.

Director Dick made a motion, seconded by Director Morris, to approve the consent calendar consisting of items 2A, 7-1 and 7-2.

The vote was:

Ayes: Directors Apodaca, Blois, De Jesus, Dick, Faessel, Lefevre, Morris, Peterson, Smith and Williams

Noes: None

Abstentions: None

Absent: Director Camacho

Not voting: Director Repenning

The motion for Items 2A, 7-1 and 7-2 passed by a vote of 10 ayes, 0 noes, 0 abstentions, 1 absent and 1 not voting.

END OF CONSENT CALENDAR ITEMS

4. OTHER BOARD ITEMS – ACTION

None

5. BOARD INFORMATION ITEMS

None

6. COMMITTEE ITEMS

a. Subject: 2021 System Operations: A Year in Review

Presented by: Tae Yun, Unit Manager, Water System Operations

Mr. Yun reported on the following:

- 2021 was an extremely dry year and the State Water project allocation was at 5%, which was tied for the lowest in history
- Adjusted system operations in extraordinary ways to minimize State Water Project water use and maximize the use of Colorado River water and storage reserves
- Took additional extraordinary actions to reduce the use of limited SWP supplies by implementing innovative projects rapidly, such as the improvements to feed the Mills Treatment Plant from DVL by gravity
- Implemented new programs and partnered with the member agencies to shift deliveries from SWP to CR water connections, and to defer SWP deliveries where possible
- These strategies collectively conserved over 200,000 acre-feet of SWP supplies in 2021, which was more than double the 5% SWP allocation
- Additional challenges addressed in 2021 included maintaining 8-pump flow on the CRA, addressing water quality challenges, successfully completing 15 major shutdowns, and keeping staff safe through the ongoing pandemic

b. Subject: State Water Project Dependent Area Solutions Update

Presented by: Stacie Takeguchi, Team Manager, Engineering Services

Ms. Takeguchi reported on the following:

- Metropolitan is committed to improving the reliability of the areas of the system that are dependent on SWP supplies
- Numerous actions have been taken in 2021 and in years prior to address this issue, including extraordinary operational actions, new projects, programs, and member agency collaborations
- An extensive effort, with involvement of the affected member agencies, was initiated last year to identify and evaluate additional actions to further improve the reliability of these areas
- Potential additional actions could include expanding existing and/or creating new water storage programs, developing new pump stations, and partnering with agencies on exchanges and interconnections
- Staff will report on progress regularly and continue to take actions for this and future droughts, including collaboratively creating a high-level drought action portfolio

The following Directors provided comments or asked questions:

1. Blois
2. Lefevre
3. Peterson
4. Repenning
5. Hagekhalil
6. Camacho

Staff responded to the Directors' comments or questions.

- c. Subject: Proposed Water Quality Lab Upgrades
- Presented by: Steven Burkhead, Interim Senior Engineer, Engineering Services
 and
 Paul Rochelle, Section Manager, Water System Operations

Mr. Burkhead and Mr. Rochelle reported on the following:

- WQL was built in 1985 and expanded in 1998, and the building is an essential facility for Metropolitan and member agencies
- Current lab has several deficiencies that need to be addressed to ensure it remains an essential facility including: seismic resiliency issues (retrofit required), space reconfiguration for existing workloads, and potential to add additional space to meet future needs
- Space planning study conducted to determine what will keep WQL relevant for the next 30+ years
- Alternatives Considered: retrofit and expansion of existing building or construction of a new building
- Recommended approach: retrofit existing lab
- Next step: February 2022 Board Action

The following Directors provided comments or asked questions:

1. Faessel
2. De Jesus
3. Peterson
4. Lefevre

Staff responded to the Directors' comments or questions.

- d. Subject: Annual Seismic Resilience Update
- Presented by: Winston Chai, Unit Manager, Engineering Services and
 John Shamma, Section Manager, Engineering Services

Mr. Chai and Mr. Shamma reported on the following:

- 5 components of Metropolitan's seismic strategy: planning, engineering, operations agency partnership, and reporting
- Engineering Strategy: assessment, prioritization, mitigation
- Components: dams & reservoirs, above ground facilities, lifelines, and underground structures
- Risk-based prioritization by component
- Effective mitigation: strategies, tools, multi-purpose projects, and latest technologies
- Summary: continue to assess, prioritize, develop, implement, and report

The following Directors provided comments or asked questions:

1. Lefevre

Staff responded to the Director's comments or questions.

e. Subject: Overview of Construction Management
Presented by: Item deferred to a future meeting.

7. MANAGEMENT REPORTS

a. Subject: Water System Operations Manager's report
Presented by: No presentation given.

b. Subject: Engineering Services Manager's report
Presented by: No presentation given.

8. FOLLOW-UP ITEMS

None

9. FUTURE AGENDA ITEMS

None

Next meeting will be held on February 7, 2022.

Meeting adjourned at 11:39 a.m.

Tim Smith
Chair



● **Board of Directors**
Engineering and Operations Committee

2/8/2022 Board Meeting

7-2

Subject

Award three professional services agreements to support rehabilitation projects at the Colorado River Aqueduct pumping plants: (1) an agreement with Parsons Transportation Group Inc. in an amount not to exceed \$2,650,000; (2) an agreement with Jacobs Engineering Group Inc. in an amount not to exceed \$650,000; and (3) an agreement with Tetra Tech, Inc. in an amount not to exceed \$650,000; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Professional services agreements are recommended for the three Colorado River Aqueduct (CRA) pumping plant projects listed below.

- Project No. 1 - Iron Mountain and Gene Pumping Plant Utilities – This project replaces domestic water, non-potable water, and wastewater systems at the Iron Mountain and Gene pumping plants. This project is being closely coordinated and scheduled with the Desert Housing Program. The action authorizes an agreement with Parsons Transportation Group Inc. for preliminary and final design to replace utilities at Iron Mountain and Gene pumping plants.
- Project No. 2 - CRA Region Security Improvements – This project installs security improvements at the five CRA pumping plants and the Camino Substation. This action authorizes an agreement with Jacobs Engineering Group, Inc. for preliminary design to improve physical security at six locations along the CRA.
- Project No. 3 - Iron Mountain Station Power and Lighting Switchrack Replacement – This project replaces the central power distribution center for all pumping plant electrical loads, with the exception of the switchgear for the main pumps which was replaced under an earlier project. This action authorizes an agreement with Tetra Tech, Inc. for preliminary design to replace the station power and lighting switchrack at the Iron Mountain pumping plant.

This action authorizes three professional service agreements to provide engineering support for the projects listed above. These projects will improve water delivery reliability, provide reliable utility service for employees, and improve safety and security at several desert sites.

Details

Background

The CRA is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews. It consists of five pumping plants; 124 miles of tunnels, siphons, and reservoirs; 63 miles of canals; and 55 miles of cut-and-cover conduits. The aqueduct was constructed in the late 1930s and was placed into service in 1941.

Three professional service agreements are recommended at this time to provide engineering support for infrastructure improvements at the CRA pumping plants. One project improves security, while the other two projects replace aging facilities at the pumping plants.

In accordance with the April 2020 action on the biennial budget for Fiscal Years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with the actions described herein, pending board-authorization of

the design services agreement described below. Based on the current Capital Investment Plan (CIP) expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517). Funds required for work to be performed pursuant to the subject contract after fiscal year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24.

Project No. 1 - Iron Mountain and Gene Pumping Plant Utility Replacement – Preliminary and Final Design

The Iron Mountain and Gene pumping plants are located in remote areas of San Bernardino County, where municipal utility supplies are not available. The CRA pumping plants and villages rely on onsite utility systems to supply treated drinking water, to supply non-potable water for industrial and irrigation water needs, and to dispose of wastewater.

Most of these utility systems and ancillary features were installed in the 1940s. Major components of these systems have deteriorated over time through continuous use. This includes the drinking and non-potable water distribution systems, which are prone to pipe breaks and leaks, resulting in costly repairs. In addition, the wastewater systems are experiencing recurring problems such as plumbing and septic tank backups, clogged leach fields, broken and slow-draining collection pipes, and odors.

Replacement of the utilities beneath the roadways will also require cutting and trenching of the existing roadways. This work will further distress the existing asphalt surfaces. After nearly 80 years of service, the subgrade below the roads has deteriorated resulting in potholes and cracks throughout the village roads. A full-width asphalt road replacement is recommended as part of the utility replacement project.

The planned work for the Iron Mountain and Gene pumping plants utility improvements includes the replacement of the existing domestic water distribution piping, non-potable water distribution piping, and the wastewater collection piping with septic tanks and leach fields; replacement of the existing asphalt pavement in the village, including grading and drainage improvements, installation of new roadway striping and signage; and site restoration. Under a separate Capital Investment Plan project, the potable water treatment systems at each of the five CRA pumping plants are being replaced. This project will be coordinated with that on-going project.

The work under this project is also being closely coordinated and scheduled with an existing project to replace the desert village housing and other amenities at each site. Those projects are also in the preliminary design phase, and this is an opportune time to commence preliminary design of the utilities replacement project. Design activities will be conducted with a hybrid effort of consultant and Metropolitan staff as described below. Metropolitan staff will perform overall project management and consultant oversight. Staff will return to the Board at a later date to award a construction contract.

A total of \$4.1 million is required for this work. Allocated funds include a total of \$2,650,000 for design activities (includes \$700,000 for preliminary investigations, technical assessments, and analyses, and \$1,950,000 for final design activities) by Parsons Transportation Group Inc. (Parsons) under a new agreement, as described below; and a total of \$195,000 for constructability workshop, environmental documentation, and geotechnical investigation activities. Each of these activities will be performed by a specialty firm under a contract planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less. Allocated funds for Metropolitan staff activities includes \$608,000 for technical oversight and review of consultant's work; \$372,000 for regulatory agency coordination, project management, and project controls; and \$275,000 for remaining budget.

As described above, final design will be performed by Parsons and Metropolitan staff. Engineering Services' performance metric target range for final design with construction more than \$3 million is 9 to 12 percent. For this project, the performance metric goal for final design is 11.5 percent of the total construction cost. The estimated cost of design is \$2,408,000, which includes \$1,950,000 for Parsons and \$458,000 for Metropolitan staff. The estimated cost of construction for this project is anticipated to range from \$21 million to \$23 million.

Attachment 1 provides the allocation of the required funds. The total estimated cost of this project work, including the funds allocated for the work described in this action and future construction costs, is anticipated to range from \$28 million to \$30 million.

Engineering Services (Parsons Transportation Group Inc) – New Agreement

Parsons is recommended to provide engineering services for preliminary and final design of the utility and pavement replacement at Iron Mountain and Gene pumping plants. Parsons was prequalified via Request for Qualifications 1131 and was selected based on the firm's design expertise in the specific technical aspects of this project. In addition, Parsons performed initial hydraulic modeling of the wastewater system and has in-depth familiarity with project requirements.

The planned activities for Parsons include performing the following activities: (1) site reconnaissance, data collection and utility investigations; (2) hydraulic analyses for potable water, non-potable water, and wastewater piping systems; (3) analyses associated with proper sizing and configuration of the necessary septic system components; (4) design development of the "basis of design" to incorporate desert housing project improvements; (5) preparation of drawings and specifications; (6) permitting support and coordinating with local jurisdictions and/or agencies; (7) development of construction cost estimate; and (8) bid phase support.

This action authorizes an agreement with Parsons for a not-to-exceed amount of \$2.65 million to provide engineering design services for utility systems replacement at Iron Mountain and Gene pumping plants. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 19 percent. Parsons has agreed to meet this level of participation. The planned subconsultants for this work are listed in **Attachment 2**.

Project No. 2 - CRA Region Security Improvements – Preliminary Design

When Metropolitan's CRA pumping plants were constructed over 80 years ago, the desert region was undeveloped. Since then significant development and has taken place in the vicinity of the plants. Despite this development, the CRA pumping plants still lack security features that are typical of other Metropolitan facilities. In 2019, Metropolitan staff and a consultant completed a comprehensive security assessment of the desert pump plants and the Camino Electrical Switching Station. The results of that assessment made numerous recommendations for security upgrades. Those recommended upgrades are the subject of the scope of work for this project.

Examples of the issues at each of the five CRA pumping plants include incomplete perimeter fencing, which leaves these facilities susceptible to potential vandalism, theft, and sabotage by unauthorized public access. Upgraded security entry checkpoints are also necessary at each pump plant to properly control ingress and egress from the sites.

Security upgrades are also recommended for Metropolitan's Camino Electrical Switching Station, which is located in a remote area approximately 25 miles west of Needles, California. This facility is vulnerable to trespassing and is critical for the operation of the CRA system. The Camino Substation transmits power from Hoover Dam via two power lines; one power line transmits power towards the Gene and Intake pumping plants, and the other towards Iron Mountain, Eagle Mountain and Hinds pumping plants.

The planned work for the physical security improvements will include installation or upgrades of perimeter fencing with access gates at patrol routes around all the five pumping plant facilities; permanent guard station at the entrance to each pumping plant; facility signage, access control, and road improvements at main entrances to each pumping facility; cameras, motion detectors, remote speakers, lights, and card readers at the Camino Substation. Preliminary design activities will be conducted by consultant as described below. Metropolitan staff will perform overall project management and consultant oversight.

A total of \$1.43 million is required for this work. Allocated funds include \$650,000 for preliminary design by Jacobs Engineering Group Inc. (Jacobs), under a new agreement, as described below; and a total of \$200,000 for value engineering, environmental documentation, and geotechnical investigation activities. Each of these activities will be performed by a specialty firm under a contract planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less. Allocated funds for Metropolitan staff activities includes \$196,000 for technical oversight and review of consultant's work; \$231,000 for surveying, environmental assessments and documentation, project management, and project controls; and \$153,000 for remaining budget.

The total cost of the project to improve the CRA region physical security will be re-evaluated during preliminary design. Currently, the future construction contract is estimated to range from \$8 million to \$9 million.

Attachment 1 provides the allocation of the required funds.

Engineering Services (Jacobs Engineering Group Inc.) – New Agreement

Jacobs is recommended to provide engineering services for preliminary design of the CRA Region Physical Security Improvements. Jacobs was prequalified via Request for Qualifications 1131 and is recommended based on the firm's expertise in the discipline-specific technical aspects of this project, technical approach, and its experience with similar projects.

The planned design activities for Jacobs include: (1) site reconnaissance, data collection and utility investigations; (2) assessments of existing security measures; (3) evaluations of proposed security improvement options and preferred alternatives; (4) preparation of field of view calculations and drawings; (5) preparation of preliminary design drawings and report; (6) development of a Class 3 construction cost estimate; (7) participation in value engineering review workshops; and (8) development of final design criteria.

This action authorizes an agreement with Jacobs for a not-to-exceed amount of \$650,000 to provide engineering design services for CRA Region Physical Security Improvements. For this agreement, Metropolitan has established a SBE participation level of 10 percent. Jacobs has agreed to meet this level of participation. The planned subconsultants for this work are listed in **Attachment 2**.

Project No. 3 – Iron Mountain Pumping Plant Station and Lighting Switchrack Rehabilitation – Preliminary Design

At each of the CRA's five pumping plants, incoming high-voltage power is stepped down to 6,900 V to power the main pumps and then down to 2,400 V (or 480 V in the case of Intake Pumping Plant) to power each plants' station power and lighting (SPL) switchrack. These switchracks are the central power distribution center for all pumping plant electrical power loads with the exception of the main pumps. Each switchrack consist of vacuum circuit breakers and transformers fed by overhead copper buses, and disconnect switches, all of which are supported by a steel lattice frame, exposed to the environment in an outdoor fenced-in yard.

From the SPL switchrack, power is distributed directly to electrical loads or via additional step-down transformers to various critical systems including the main pumps' cooling water pumps, lubricating oil systems, and discharge valve actuators; general station lighting and computer systems; domestic water filtration systems; microwave communications systems; and village housing. In the event of an unanticipated power outage to the pumping plant, power systems are kept operational by the activation of a standby diesel generator tied to the SPL switchrack.

The CRA's main pump switchracks were upgraded with a project that was completed in 2017. The SPL switchracks are mostly original CRA construction, completed in the late 1930s. Deficiencies affecting the reliability of the switchracks include obsolete equipment such as the use of obsolete vacuum circuit breakers; lack of modern safety features such as a means to lock switches in the open state when required; an outdoor equipment design where switches, breakers and busses are exposed to the elements, making it difficult to repair or maintain equipment under adverse weather conditions; and outmoded protection relays.

A detailed study of the Iron Mountain switchrack was recently completed to define project scope and determine design and construction sequencing options that would be applicable to Iron Mountain and the other four other CRA pumping plants, given the similarities between the plants. In addition to addressing obvious deficiencies, the study recommended a coordinated and holistic upgrade of both the switchrack and other ongoing and associated electrical projects, such as the nearby standby generator replacement and the low voltage auxiliary power system replacement.

Preliminary design effort will initially focus on rehabilitation of the switchrack at Iron Mountain. The work will also take into account the planned necessary upgrades to the other associated electrical equipment described above. The design for Iron Mountain will be used as the framework for the preliminary design development of the remaining pumping plants. Based on the conceptual work that has been completed to date, rehabilitation work includes a cast-in-place building to house critical electrical equipment and replacement of the SPL switchracks, standby diesel engine generators, and low voltage auxiliary power system. Preliminary design activities will be

conducted with a hybrid effort of consultant and Metropolitan staff as described below. Metropolitan staff will integrate related ongoing projects such as the emergency generator replacement and auxiliary system rehabilitation; develop construction phasing for the suite of electrical projects; perform consultant oversight; and overall project management.

A total of \$1.6 million is required for this work. Allocated funds include \$650,000 for preliminary design activities and technical assessment by Tetra Tech, Inc. (Tetra Tech) under a new agreement, as described below; and a total of \$125,000 for value engineering, environmental documentation, and geotechnical investigations activities. Each of these activities will be performed by a specialty firm under a contract planned to be executed under the General Manager's Administrative Code authority to award contracts of \$250,000 or less. Allocated funds for Metropolitan staff activities include: \$354,000 for technical oversight and review of consultant's work; \$317,000 for surveying, environmental assessments and documentation, project management, and project controls; and \$154,000 for remaining budget.

The total cost of the project to replace and upgrade the existing 2.4 kV switchrack at the Iron Mountain pumping plant will be re-evaluated during preliminary design. Currently, future construction contract costs are estimated to range from \$16 million to \$17 million. **Attachment 1** provides the allocation of the required funds.

Engineering Services (Tetra Tech, Inc.) – New Agreement

Tetra Tech, Inc. is recommended to provide engineering services for preliminary design to rehabilitate the SPL switchrack at the Iron Mountain pumping plant. Tetra Tech was selected via Request for Qualifications No. 1215. Tetra Tech was selected based on the firm's design expertise in the discipline-specific technical aspects of this project, technical approach, and its experience with similar projects. In addition, Tetra Tech performed the study phase of the project and has in-depth familiarity with project requirements.

The planned preliminary design activities for Tetra Tech include: (1) development of design criteria; (2) preparation of load calculations; (3) development of interconnection to existing system; (4) preparation of equipment layouts; (5) identification of outage requirements; and (6) planning for construction sequencing. Preliminary design phase activities will be conducted with a hybrid effort of consultant and Metropolitan staff as described below. Metropolitan staff will perform overall project management and consultant oversight.

This action authorizes an agreement with Tetra Tech for a not-to-exceed amount of \$650,000 to provide engineering design services to rehabilitate Iron Mountain pumping plant SPL switchrack. For this agreement, Metropolitan has established an SBE participation level of 15 percent. Tetra Tech has agreed to meet this level of participation. The planned subconsultants for this work are listed in **Attachment 2**.

Alternatives Considered

Alternatives considered for completing design activities for the CRA Rehabilitation Program included assessing the availability of in-house Metropolitan staff to conduct this work. The CRA Rehabilitation Program's staffing strategy for utilizing consultants and in-house Metropolitan staff has been: (1) to assess current work assignments for in-house staff to determine the potential availability of staff to conduct this work; and (2) for long-term rehabilitation projects, when resource needs exceed available in-house staffing or require specialized technical expertise, typically staff uses project-specific professional services agreements in order to provide a concentrated engineering effort over an extended duration.

This strategy relies on the assumption that in-house engineering staff will handle the baseload of work on capital projects, while professional services agreements are selectively utilized to handle projects above this baseload or where specialized needs are required. This strategy allows Metropolitan's staff to be strategically utilized on projects to best maintain key engineering competencies and to address projects with special needs or issues. After assessing the current workload for in-house staff and the relative priority of this project, staff recommends the use of a professional services agreement for the subject projects. This approach will allow for the completion of not only these projects, but also other budgeted capital projects within their current schedules and ensure that the work is conducted in the most efficient manner possible.

Summary

This action authorizes agreements with: (1) Parsons for a not-to-exceed amount of \$2,650,000 for design to replace the utilities and pavement at Iron Mountain and Gene pumping plants; and (2) Jacobs for a not-to-exceed amount of \$650,000 to provide engineering services for preliminary design for CRA region security improvements; and (3) Tetra Tech for a not-to-exceed amount of \$650,000 to provide engineering services for preliminary design to rehabilitate the Iron Mountain pumping plant SPL switchrack.

See **Attachment 1** for the Allocation of Budgeted Funds, **Attachment 2** for the Planned Subconsultants, and **Attachment 3** for the Location Map.

Project Milestones

October 2022 – Completion of preliminary design of CRA region security improvements

December 2022 – Completion of final design to replace the CRA utilities at Iron Mountain and Gene pumping plants

March 2023 – Completion of preliminary design to rehabilitate the Iron Mountain pumping plant station power and lighting switchrack

Policy

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

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 51963, dated April 14, 2020 the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

California Environmental Quality Act (CEQA)

CEQA determination for Options #1 and #2:

The proposed action is not defined as a project under CEQA because it involves only feasibility or planning studies for possible future actions which the Board has not approved, adopted or funded (Section 15262 of the State CEQA Guidelines). In addition, the proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines because the proposed action involves basic data collection and research activities which do not result in a serious or major disturbance to an environmental resource, which may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded (Class 6, Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #3:

None required

Board Options

Option #1

- a. Authorize an agreement with Parsons Transportation Group Inc. for a not-to-exceed amount of \$2,650,000 for design to replace the utilities at Iron Mountain and Gene pumping plants.
- b. Authorize an agreement with Jacobs Engineering Group Inc. for a not-to-exceed amount of \$650,000 for preliminary design to improve physical security at the CRA pumping plants.
- c. Authorize an agreement with Tetra Tech, Inc. in an amount not to exceed \$650,000 for preliminary design to rehabilitate the station power and lighting switchrack at the Iron Mountain pumping plant.

Fiscal Impact: Expenditure of \$7.13 million in capital funds. Approximately \$1.9 million will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following Board approval of those budgets.

Business Analysis: This option will enhance water delivery infrastructure reliability, provide reliable utility services on a schedule that is coordinated with the upgrade of desert housing and associated amenities, and improve safety and security in the CRA region.

Option #2

- a. Authorize an agreement with Parsons Transportation Group Inc. for a not-to-exceed amount of \$2,650,000 for design to replace the utilities at Iron Mountain and Gene pumping plants;
- b. Do not authorize an agreement with Jacobs Engineering Group Inc. for a not-to-exceed amount of \$650,000 for preliminary design to improve physical security at the CRA pumping plants; and
- c. Do not authorize an agreement with Tetra Tech, Inc. in an amount not to exceed \$650,000 for preliminary design to rehabilitate the station power and lighting switchrack at the Iron Mountain pumping plant.

Fiscal Impact: Expenditure of \$4.1 million in capital funds. Approximately \$1 million will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following Board approval of those budgets.

Business Analysis: This option will provide reliable utility services for employees which is being closely coordinated and scheduled with a project to upgrade desert housing and associated amenities. This option may delay improvements to water delivery infrastructure reliability, and safety and security in the CRA region.

Option #3

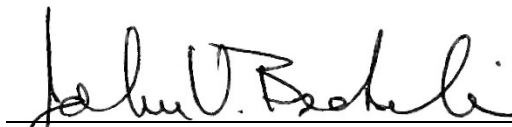
Do not proceed with the projects at this time.

Fiscal Impact: None

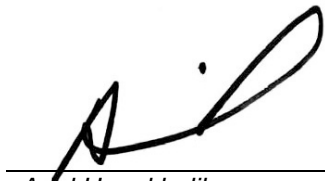
Business Analysis: This option would forego an opportunity to improve reliability, utility service, and safety in the CRA region.

Staff Recommendation

Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services
1/24/2022
Date



Adel Hagekhalil
General Manager
1/26/2022
Date

Attachment 1 – Allocation of Funds

Attachment 2 – Planned Subconsultants

Attachment 3 – Location Map

Ref# es02082022

Allocation of Funds for Iron Mountain and Gene Pumping Plant Utility Replacement

	Current Board Action (Feb. 2022)
Labor	
Studies & Investigations	\$ 150,000
Final Design	458,000
Owner Costs (Program mgmt., envir. monitoring)	362,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	10,000
Professional/Technical Services	-
Parsons Transportation Group Inc.	2,650,000
Specialized Geotechnical Services (Fugro)	100,000
Specialized Environmental Services (Aspen Environmental)	25,000
VE Consultant	70,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	275,000
Total	\$ 4,100,000

The total amount expended to date to upgrade the Iron Mountain and Gene Pumping Plant Utility Replacement is \$2.9 million. The total estimated cost to complete the project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$28 million to \$30 million.

Allocation of Funds for CRA Region Security Improvements

	Current Board Action (Feb. 2022)
Labor	
Studies & Investigations	\$ 196,000
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	224,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	7,000
Professional/Technical Services	-
Jacobs Engineering Group Inc.	650,000
Specialized Geotechnical Services	40,000
Specialized Environmental Services	100,000
VE Consultant	60,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	153,000
Total	\$ 1,430,000

The total amount expended to date to upgrade the CRA Region Security Improvements is \$280,000. The total estimated cost to complete the project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$12 million to \$13 million.

Allocation of Funds for Iron Mountain Pumping Plant Station Power and Lighting Switchrack Rehabilitation

	Current Board Action (Feb. 2022)
Labor	
Studies & Investigations	\$ 354,000
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	307,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	10,000
Professional/Technical Services	-
Tetra Tech Inc.	650,000
Specialized Geotechnical Services	50,000
Specialized Environmental Services	10,000
VE Consultant	65,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	154,000
Total	\$ 1,600,000

The total amount expended to date to upgrade the Iron Mountain Pumping Plant Station and Lighting Switchrack Rehabilitation is \$550,000. The total estimated cost to complete the project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$21 million to \$23 million.

The Metropolitan Water District of Southern California
Subconsultants for Agreement with Parsons Transportation Group Inc.

Subconsultant and Location	
Civiltec Engineering Inc.	Monrovia, California
DRP Engineering Inc.	Alhambra, California
Leighton Consulting, Inc.	Irvine, California

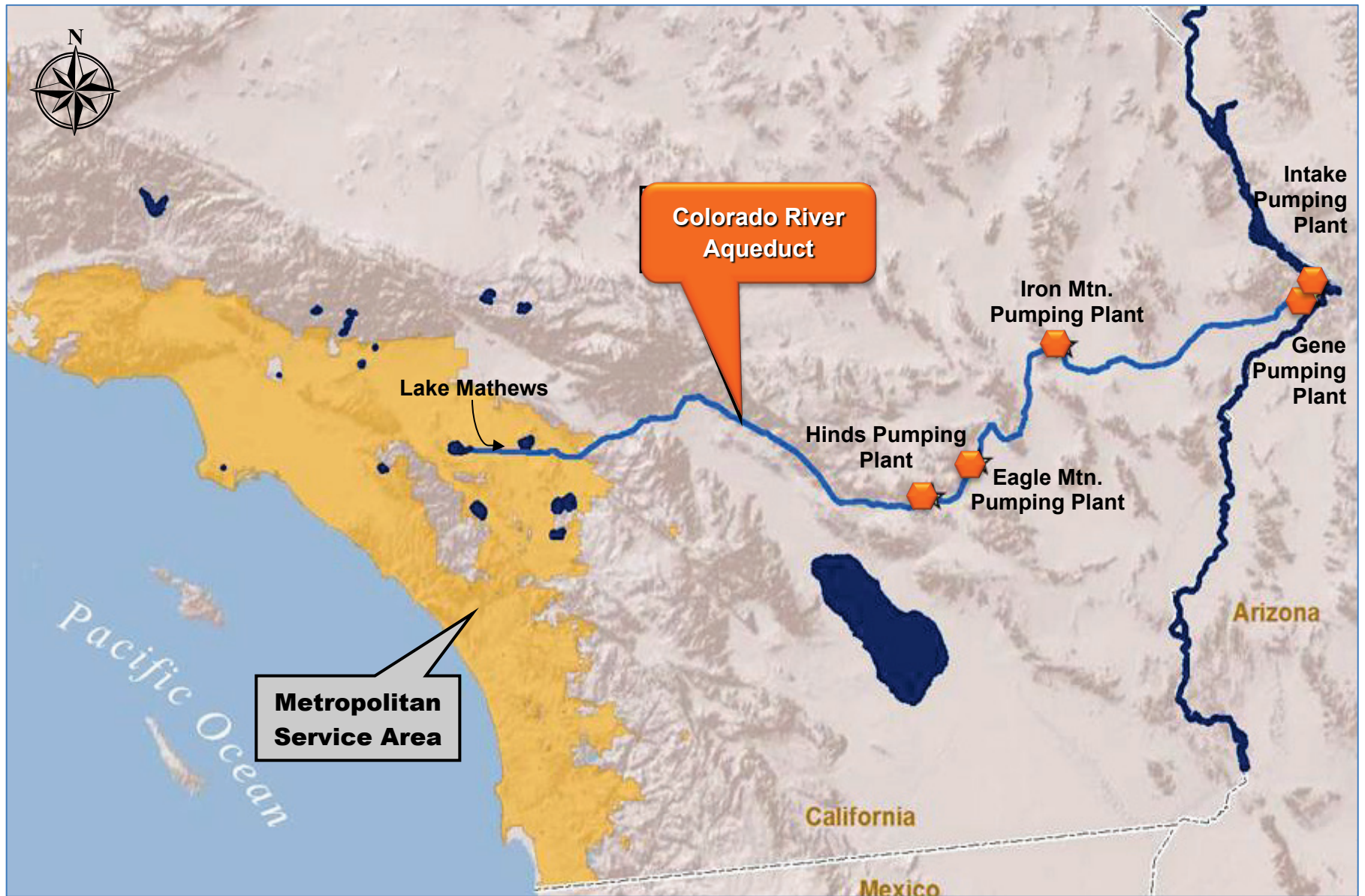
The Metropolitan Water District of Southern California
Subconsultants for Agreement with Jacobs Engineering Group Inc.

Subconsultant and Location
Gillis + Panichapan Architects, Inc. – Costa Mesa, California
Indian Energy LLC – Anaheim, California

The Metropolitan Water District of Southern California
Subconsultants for Agreement with Tetra Tech, Inc.

Subconsultant and Location
DRP Engineering Inc. – Alhambra, California
ProjectLine Technical Services, Inc. – Costa Mesa, California

Location Map





Colorado River Aqueduct Pumping Plant Improvement Projects

Engineering and Operations Committee

Item 7-2

February 7, 2022

Current Action

- Award three professional services agreements for design to support rehabilitation projects at the Colorado River Aqueduct pumping plants
 - Parsons Transportation Group Inc. to replace utilities at Iron Mountain and Gene pumping plants (Project 1)
 - Jacobs Engineering Group, Inc. to improve physical security at six locations along the CRA (Project 2)
 - Tetra Tech, Inc. to replace the station power and lighting switchrack at Iron Mountain Pumping Plant (Project 3)

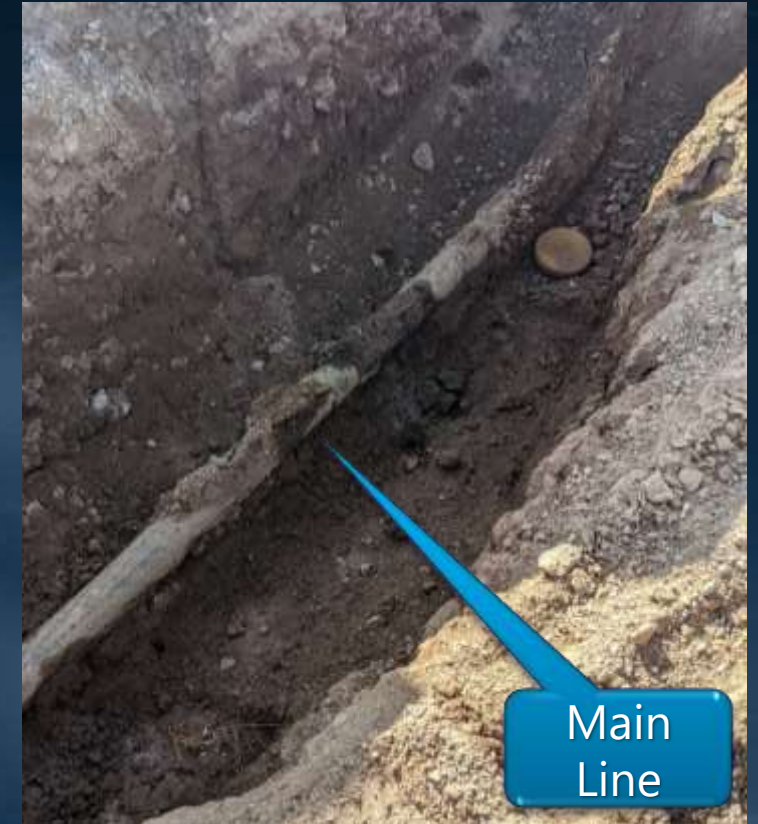
Location Map



1. Utility Replacement – Iron Mountain & Gene Pumping Plants

● Background

- Water distribution and wastewater systems
 - 80+ years old
 - Aged and deteriorated components
 - Recurring leaks & breaks
- Asphalt pavement
 - 30+ years old
 - Cracks, potholes, uneven surfaces
- Closely coordinated with District Housing & Domestic Water Treatment Improvements



Corroded wastewater pipe at
Gene Pumping Plant

1. Utility Replacement – Planned work

- Replace water distribution system lines, & wastewater collection main lines & laterals
- Replace septic tanks & leach fields
- Replace asphalt pavement
- Grading & drainage improvements and site restoration as needed



Deteriorated asphalt pavement
at Gene Pumping Plant

1. New Agreement

Parsons Transportation Group Inc.

- Prequalified under RFQ 1131
- Scope of work
 - Conduct site & utility investigations
 - Perform hydraulic analyses for potable water, non-potable water, and wastewater piping systems & sizing of septic system components
 - Prepare drawings & specs and permitting support
 - Develop constr. cost est. & bid support
- SBE participation level: 19%
- NTE amount: \$2,650,000

1. Metropolitan Scope

- Conduct field & geotechnical investigations
- Prepare environmental documentation
- Conduct constructability workshops
- Coordinate permitting process with local jurisdictions
- Provide technical oversight & review consultant work
- Perform project controls & project management

2. Security Improvements – CRA Pumping Plants

● Background

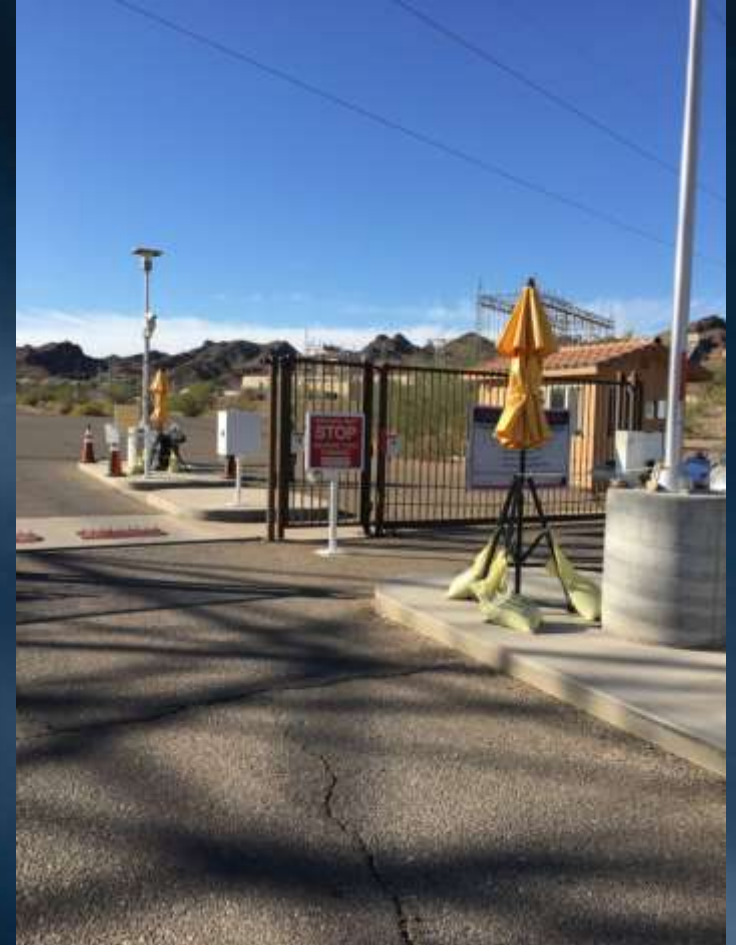
- Desert facilities constructed in remote locations over 80 years ago
- Significant development in the vicinity of pumping plants
- Staff/consultant study recommends enhancement of physical security to protect critical infrastructure



Typical site:
Eagle Mountain Pumping Plant

2. Security Improvements – Planned work

- Construct permanent guard stations at pump plants entrances
- Upgrade facility signage, access control, and entrance roads
- Upgrade perimeter fencing
- Install cameras, motion detectors, remote speakers, lights and card readers



Existing Guard Shack and Entrance at Gene PP:
Typical of planned improvements

2. New Agreement

Jacobs Engineering Group, Inc.

- Prequalified under RFQ 1131
- Scope of work
 - Conduct site & utility investigations
 - Assess existing security measures
 - Evaluate proposed security improvement options
 - Prepare preliminary design drawings & report
 - Develop a Class 3 construction cost estimate
- SBE participation level: 10%
- NTE amount: \$650,000

2. Metropolitan Scope

- Conduct field & geotechnical investigations
- Perform topographic surveying/mapping
- Prepare environmental documentation
- Conduct value engineering workshop
- Provide technical oversight & review consultant work
- Perform project controls & project management

3. Switchrack Rehabilitation – Iron Mountain Pumping Plant

● Background

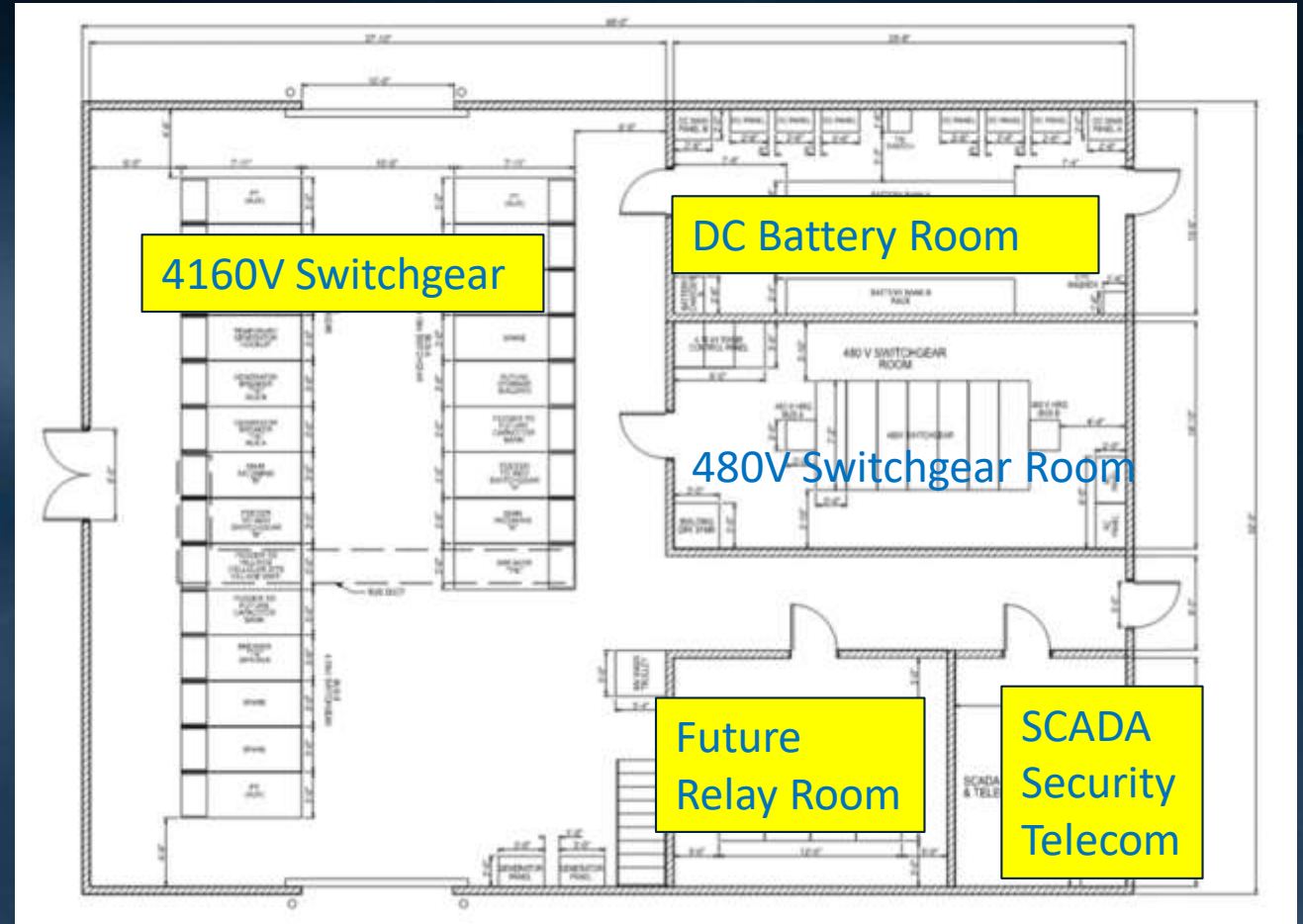
- Station lighting and power switchrack was built in 1939
- Central distribution center for low and medium voltage
- Provides power for critical equipment
- Equipment lacks modern safety features
- Spare parts not available



Existing switchrack at
Iron Mountain Pumping Plant

3. Switchrack Rehabilitation – Planned work

- Site grading & drainage improvements
- Replace station power and lighting switchrack with modern switchgear
- Construct climate-controlled building to house new equipment



Proposed New Iron Mountain
Switchgear Building

3. New Agreement

Tetra Tech, Inc.

- Prequalified under RFQ 1215
- Scope of work
 - Develop design criteria
 - Prepare power load calculations
 - Develop interconnection to existing system
 - Prepare equipment layouts
 - Identify outage requirements
 - Plan construction sequencing
- SBE participation level: 15%
- NTE amount: \$650,000

3. Metropolitan Scope

- Conduct field & geotechnical investigations
- Integrate project with other electrical projects
 - Standby generator replacement
 - Auxiliary power upgrades
- Perform topographical surveying/mapping
- Prepare environmental documentation
- Conduct value engineering workshop
- Provide technical oversight & review consultant work
- Perform project controls & project management

Alternatives Considered

- Assess Metropolitan staff availability
 - Staff workloads exceed immediate available resources
 - Specialized technical expertise required
- Selected option
 - Professional services agreement for the subject projects
 - Consultant and staff work as a hybrid team

Allocated Funds

	1. Utility Replacement	2. Security Improvements	3. Switchrack Rehabilitation
Metropolitan Labor			
Preliminary Investigations	\$ 150,000	\$ 196,000	\$ 354,000
Final Design	458,000		
Owner Costs	362,000	224,000	307,000
Professional/Technical Services			
Parsons Transportation Group Inc.	2,650,000		
Jacobs Engineering Group, Inc.		650,000	
Tetra Tech, Inc.			650,000
Specialized Geotechnical Services	100,000	40,000	50,000
Specialized Environmental Services	25,000	100,000	10,000
VE Consultant	70,000	60,000	65,000
Incidental Expenses	10,000	7,000	10,000
Remaining Budget	275,000	153,000	154,000
	Total	\$4,100,000	\$1,430,000
		\$1,600,000	

Total amount: \$7,130,000

Project Schedules



Board Options

● Option#1

- a. Authorize an agreement with Parsons Transportation Group Inc. for a not-to-exceed amount of \$2,650,000 for design to replace the utilities at Iron Mountain and Gene pumping plants.
- b. Authorize an agreement with Jacobs Engineering Group Inc. for a not-to-exceed amount of \$650,000 for preliminary design to improve physical security at the CRA pumping plants.
- c. Authorize an agreement with Tetra Tech, Inc. in an amount not to exceed \$650,000 for preliminary design to rehabilitate the station power and lighting switchrack at the Iron Mountain pumping plant.

Board Options

● Option#2

- a. Authorize an agreement with Parsons Transportation Group Inc. for a not-to-exceed amount of \$2,650,000 for design to replace the utilities at Iron Mountain and Gene pumping plants;
- b. Do not authorize an agreement with Jacobs Engineering Group Inc. for a not-to-exceed amount of \$650,000 for preliminary design to improve physical security at the CRA pumping plants; and
- c. Do not authorize an agreement with Tetra Tech, Inc. in an amount not to exceed \$650,000 for preliminary design to rehabilitate the station power and lighting switchrack at the Iron Mountain pumping plant.

Board Options

- Option#3
 - Do not proceed with the projects at this time.

Staff Recommendation

- Option #1





● **Board of Directors**
Engineering and Operations Committee

2/8/2022 Board Meeting

7-3

Subject

Authorize an agreement with La Cañada Design Group, Inc., in an amount not to exceed \$4,400,000 for preliminary design to upgrade Metropolitan's Water Quality Laboratory, and an agreement with Rincon Consultants, Inc., in an amount not to exceed \$550,000 for environmental support services; the General Manager has determined that this proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Metropolitan's Water Quality Laboratory at the La Verne site was constructed in two phases, with the original portion of the building being constructed nearly 40 years ago. Upgrades to both portions of the building are needed to increase the seismic performance and to efficiently address new and evolving water quality issues and regulations. These upgrades will increase the level of seismic performance of this essential facility in accordance with current earthquake projections and updated building codes. Concurrent with the seismic upgrades, the building will be reconfigured and expanded to improve the building's overall functionality in light of the current high-volume sample handling, while looking to the future so that contaminants of emerging concern (CECs) can also be processed at the laboratory. This approach of simultaneously addressing the laboratory and seismic upgrades to the building provides an efficient way to reduce overall project costs and operational impacts when compared to other potential implementation alternatives.

This action authorizes an agreement for preliminary design to upgrade Metropolitan's Water Quality Laboratory, and a second agreement to support the preparation of environmental documentation for planned facility upgrades at the La Verne site.

Details

Background

The Water Quality Laboratory is located on the grounds of the F. E. Weymouth Water Treatment Plant in the city of La Verne. The building houses Metropolitan's central laboratory that conducts over 300,000 water quality analyses each year to comply with treated water standards and support studies of emerging contaminants and the assessment of future treatment technologies. The Water Quality Laboratory was constructed in two phases. The south wing of the building was constructed in 1985, and the north wing was added in 1998. Each wing was designed and constructed in accordance with the building code requirements and water quality needs of their time. However, water quality requirements for safe water delivery have evolved significantly in the last 25 years, and the building's internal configuration does not meet current or future laboratory needs. Additionally, industry knowledge of earthquakes and seismic design has greatly improved since the 1994 Northridge earthquake, leading to the development of more stringent seismic design requirements that apply to this building as a Metropolitan essential facility.

The La Verne site is located approximately 1.5 miles from the Sierra Madre-Cucamonga Fault, which can generate a 7.0 magnitude earthquake. Under the current seismic code, the building is vulnerable to damage in the event of a major earthquake. In January 2018, Metropolitan's Board authorized final design of seismic upgrades and related building improvements for the Water Quality Laboratory. Those designs are currently underway.

A recently completed functional assessment of the laboratory was conducted by a specialized consulting firm with national expertise in municipal drinking water laboratories. The assessment concluded that the laboratory was not

adequately configured to meet increased demands from anticipated water quality and laboratory regulations within the next six to ten years. Since the construction of the north wing, water quality requirements, laboratory sample handling practices, and safety and accessibility standards have significantly evolved. Future regulations and newly identified CECs such as per- and polyfluoroalkyl substances and microplastics will require dedicated facilities such as clean-rooms and properly separated work areas to avoid cross-contamination, which are not available within the current open concept building configuration. In addition, the existing fire control system must be replaced to meet updated fire codes; and building upgrades must be implemented to meet the latest Americans with Disabilities Act safety and accessibility standards.

To address these issues, the currently envisioned Water Quality Laboratory building improvements will provide the following benefits:

- Enhanced operation – Planned work includes construction of a building addition with new laboratory spaces to accommodate specialized equipment and supporting infrastructure to meet the latest regulatory requirements and sample handling standards. This will also include reconfiguration of existing laboratory spaces, conference rooms, offices, and common areas to improve functional efficiency of the existing building; and isolation of sensitive work areas to address analysis for emerging contaminants.
- Enhanced sustainability – Planned work includes installation of new drought tolerant landscaping, and rainwater collection systems; and installation of a new roof for the entire building and a new chiller system to improve energy efficiency of the HVAC system. The upgrades to the building will be designed to achieve Leadership in Energy and Environmental Design (LEED) certification for the building once the project is completed. This sustainability approach will be consistent with Metropolitan's sustainability goals for new and upgraded facilities.

Metropolitan staff with support from specialty cost estimating consultants, local contractors, and laboratory experts identified scenarios for constructing the improvements. Three cost/benefit scenarios were assessed based on space requirement needed to maintain laboratory functionality: (1) enhancement and reconfiguration of the existing laboratory within the existing footprint; (2) enhancement and reconfiguration of the existing laboratory with a 30,000-square-foot supplemental building; and (3) a new water quality laboratory at the La Verne site. Scenario 1 retrofits the existing floor plan with no building expansion, and this approach would only serve future laboratory needs through the next five to eight years. Scenario 2 and 3 result in a laboratory with additional space that will provide a modernized layout with enhanced functionality and will serve future laboratory needs for several decades. A new laboratory (Scenario 3) is estimated to cost approximately \$1,200 per square foot, as compared to \$900 per square foot for the recommended building expansion option (Scenario 2). For the purposes of the scenario assessment described above, 30,000-square-feet of additional space was added to the existing building for a total of 90,000-square-foot building under Scenario 2. In Scenario 3, a new 90,000-square-foot laboratory was assessed.

Staff concluded that Scenario 3, a new laboratory is the least cost-effective alternative and would utilize space that may be needed for future treatment processes on the Weymouth plant site. Additionally, a new facility would require extension of utilities through critical plant operating areas.

Staff recommends proceeding with preliminary design of Scenario 2, which includes laboratory functional upgrades in conjunction with the ongoing design effort for building's seismic upgrades, as well as an expansion of the existing building footprint. Staff plans to evaluate phasing construction and impact on existing staff and building operations during preliminary design. Preliminary design of the laboratory functional upgrades will be jointly performed by Metropolitan staff and a specialized firm. A consulting agreement for specialized engineering and technical services to support the laboratory functional upgrades and seismic upgrades is recommended at this time. Staff will return to the Board with a final recommendation on the additional square footage to be added to the retrofitted building once the detailed space planned efforts are concluded. Staff will return to the Board to authorize consultant agreements for final design, if needed, and award of a construction contract.

The planned improvements for the Water Quality Laboratory necessitate additional environmental investigation and documentation to meet CEQA requirements. Metropolitan's Board certified an EIR in April 2015 to address a number of on-going projects at the La Verne site, including the Water Quality Laboratory upgrades. Design changes and other improvements were made to some of these projects since then. These needed improvements

will be assessed with a new CEQA document. Staff recommends proceeding with the preparation of environmental documentation by a specialty consulting firm, as detailed below, to address the planned facility upgrades at the La Verne site.

In accordance with the April 2020 action on the biennial budget for Fiscal Years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with the actions described herein, pending board authorization of the agreements described below. Based on the current Capital Investment Plan (CIP) expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517). Funds required for work to be performed pursuant to the subject agreement after Fiscal Year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP Evaluation Team to be included in the System Reliability Program.

La Verne Water Quality Laboratory Upgrades – Preliminary Design

Planned preliminary design activities will be conducted with a hybrid effort of consultants and Metropolitan staff; consultant activities are described below. Metropolitan staff will plan and coordinate preliminary design with the facility's users; perform site surveys and geotechnical investigations; structural and civil design, project management, and consultant oversight.

A total of \$7.28 million is required for this work. Allocated funds include \$4,400,000 for design by La Cañada Design Group, Inc., and \$550,000 for environmental support services by Rincon Consultants, Inc., as described below. Allocated funds for Metropolitan staff activities include \$1,171,600 for structural and civil design, and technical oversight and review of consultant's work; \$861,840 for surveying, environmental support, project management, and project controls; and \$296,560 for remaining budget.

The total cost of the project to comprehensively upgrade the functional capabilities and seismic resiliency of the Water Quality Laboratory will be re-evaluated during design. Currently, the future construction contract is estimated to range from \$80 million to \$100 million. **Attachment 1** provides the allocation of the required funds.

Engineering Services (La Cañada Design Group, Inc.) – New Agreement

La Cañada Design Group, Inc. is recommended to provide preliminary design to upgrade the functional capabilities of the Water Quality Laboratory. La Cañada Design Group was prequalified through Request for Qualification No. 1182 and was selected based on the firm's expertise in the discipline-specific technical aspects of this project, and its extensive experience with new laboratories, retrofit of laboratories, and other essential facilities. In addition, La Canada Design Group is performing architectural design for the seismic upgrades to the Water Quality Laboratory, and their work in this area will be coordinated and consolidated with design efforts that Metropolitan staff are currently performing.

The planned preliminary design activities will include: (1) preparation of a 3D model of all laboratory facilities and components; (2) functional evaluation and space modification including laboratory equipment improvements, and other items required for the laboratory modernization; (3) staff relocation planning and laboratory staff coordination; (4) development of final design criteria and conceptual layout drawings for the building improvements; (5) integration of building improvements design with seismic upgrade elements; (6) LEED design coordination; (7) development of a Class 3 construction cost estimate; and (8) preparation of technical reports required for the implementation of the improvements.

This action authorizes an agreement with La Cañada Design Group, Inc. for a not-to-exceed amount of \$4,400,000 to provide preliminary design to upgrade the functional capabilities of Metropolitan's Water Quality Laboratory. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 25 percent. La Cañada Design Group, Inc. is a certified SBE firm, and thus achieves 100 percent SBE participation. The planned subconsultants for this work are listed in **Attachment 2**.

Environmental Support Services (Rincon Consultants, Inc.) – New Agreement

Rincon Consultants, Inc. (Rincon) is recommended to provide environmental support services for planned facility upgrades at the La Verne site, which includes improvements to the Water Quality Laboratory. Rincon was

prequalified through Request for Qualification No. 1265, based on the firm's extensive experience with CEQA compliance and environmental clearances, and its specific experience with facility environmental investigations and documentation.

The planned scope of work includes performing technical studies which address issues such as air quality, traffic, noise and cultural resources; and preparing environmental documentation and related CEQA correspondence.

This action authorizes an agreement with Rincon Consultants, Inc. for a not-to-exceed amount of \$550,000 to provide environmental support services for the planned facility upgrades at the La Verne site. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 25 percent. The planned subconsultants for this work are listed in **Attachment 2**.

Alternatives Considered

Alternatives considered for completing preliminary design activities for upgrades to the Water Quality Laboratory included assessing the availability and capability of in-house Metropolitan staff to conduct this work.

Metropolitan's staffing strategy for utilizing consultants and in-house Metropolitan staff has been: (1) to assess current work assignments for in-house staff to determine the potential availability of staff to conduct this work; and (2) for long-term rehabilitation projects, when resource needs exceed available in-house staffing or require specialized technical expertise.

In the case of this project, Metropolitan staff maintains the core competencies and technical capabilities to perform the design work related to the structural retrofit of the laboratory as well as performing the project's geotechnical and civil design work. The consultant will be relied upon to conduct the detailed architectural space planning effort, architectural design of the interior components of the laboratory space, as well as design of specialized mechanical, electrical and plumbing upgrades to the building. In this manner, in-house staff will continue to address a baseload of work on capital projects, while the professional services agreement will be relied upon to perform work that falls outside of the core competencies of in-house staff. This approach will allow for the efficient, competent and timely completion of this project.

Summary

This action authorizes new agreements with: (1) La Cañada Design Group, Inc. for a not-to-exceed amount of \$4,400,000 to provide preliminary design to upgrade the functional capabilities and seismic resiliency of Metropolitan's Water Quality Laboratory in La Verne; and (2) Rincon Consultants, Inc. for a not-to-exceed amount of \$550,000 to provide environmental support services for the planned facility upgrades at the La Verne site.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2020/21 capital expenditure plan. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Lists of Subconsultants, and **Attachment 3** for the Location Map.

Project Milestone

January 2024 – Complete design of seismic and functional upgrades to Metropolitan's Water Quality Laboratory

Policy

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

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 51073, dated January 9, 2018, the Board authorized final design of seismic upgrades and building improvements to the Water Quality Laboratory and the Field Engineering Building.

By Minute Item 50092, dated April 14, 2015, the Board certified that the EIR for the Weymouth Plant Improvements has been completed in compliance with CEQA and the State CEQA deadlines.

By Minute Item 51963, dated April 14, 2020 the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

California Environmental Quality Act (CEQA)

CEQA determination for Options #1 and #2:

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions consist of basic data collection and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed actions qualify for a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #3:

None required

Board Options

Option #1

- a. Authorize an agreement with La Cañada Design Group, Inc. for a not-to-exceed amount of \$4,400,000 to provide preliminary design to upgrade the functional capabilities of Metropolitan's Water Quality Laboratory at the La Verne site.
- b. Authorize an agreement with Rincon Consultants, Inc. for a not-to-exceed amount of \$550,000 to provide environmental support services for the planned facility upgrades at the La Verne site.

Fiscal Impact: \$7.28 million in capital funds. Approximately \$1.5 million in capital funds will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following board approval of those budgets.

Business Analysis: This option will allow for the simultaneous seismic and functional upgrades of the Water Quality Laboratory in a cost effective and efficient manner. These activities will fully extend the functional service of laboratory for the next 30 years and meet the CEQA requirements for projects located at the La Verne site.

Option #2

- a. Do not authorize an agreement with La Cañada Design Group, Inc. for a not-to-exceed amount of \$4,400,000 to provide preliminary design to upgrade the functional capabilities of Metropolitan's Water Quality Laboratory at the La Verne site.
- b. Authorize an agreement with Rincon Consultants, Inc. for a not-to-exceed amount of \$550,000 to provide environmental support services for the planned facility upgrades at the La Verne site.

Fiscal Impact: \$1.05 million in capital funds. Approximately \$150,000 in capital funds will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following Board approval of those budgets.

Business Analysis: Under this option, the environmental work for the La Verne site planning efforts and the seismic upgrades of the laboratory will continue. Design work for the laboratory's functional upgrades and expansion would be deferred to a future date as in-house staff does not have the specialized engineering and technical capabilities for this type of work.

Option #3

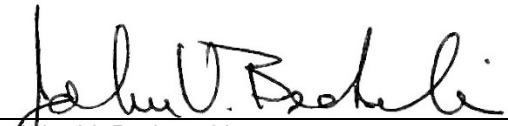
Do not proceed with either agreement at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to provide functional upgrades for the Water Quality Laboratory. Multiple future improvements would be required to the laboratory in the next decades to keep the facility's functionality up to modern industry standards which would increase costs and may diminish Metropolitan's ability to comply with water quality and laboratory requirements. Under this option, seismic upgrades to the laboratory will continue to proceed as originally planned. This option will also forego an opportunity to address the CEQA requirements for other planned projects at the La Verne site.

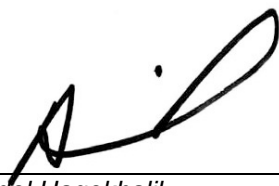
Staff Recommendation

Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services

1/20/2022
Date



Adel Hagekhalil
General Manager

1/26/2022
Date

Attachment 1 – Allocation of Funds**Attachment 2 – Lists of Subconsultants****Attachment 3 – Location of Map**

Ref# es12143021

Allocation of Funds for Water Quality Laboratory Upgrades

	Current Board Action (Feb. 2022)
Labor	
Studies & Investigations	\$ -
Preliminary Design	1,171,600
Owner Costs (Program mgmt., envir. monitoring)	861,840
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	-
La Cañada Design Group, Inc.	4,400,000
Rincon Consultants Inc.	550,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	296,560
Total	\$ 7,280,000

The total amount expended to date to upgrade the Water Quality Laboratory is approximately \$3.1 million. The total cost of the project to comprehensively upgrade the functional capabilities and seismic resiliency of the Water Quality Laboratory will be re-evaluated during design. Currently, the future construction contract is estimated to range from \$80 million to \$100 million.

The Metropolitan Water District of Southern California
Subconsultants for Agreement with La Cañada Design Group, Inc.

Subconsultant and Location	
Hazen and Sawyer	Los Angeles, California
P2S, Inc.	Long Beach, California
Lenax Construction Services, Inc.	Pasadena, California
MIG, Inc.	Los Angeles, California
AWC West	Stevenson Ranch, California
ZC Sustainability	Santa Monica, California
Krai Charuwat Design Visualization	Long Beach, California
Blackman and Forsyth	Santa Monica, California
Coffman Engineers, Inc.	Los Angeles, California
Newson Brown Acoustics LLC	Culver City, California

The Metropolitan Water District of Southern California
Subconsultants for Agreement with Rincon Consultants Inc.

Subconsultant and Location
Translutions, Inc. Tustin, California
Penhall Company Gardena, California
Sunstar Laboratories, Inc. Lake Forest, California





La Verne Water Quality Laboratory Building Improvements

Engineering and Operations Committee

Item 7-3

February 7, 2022

Current Action

- Authorize an agreement with La Cañada Design Group, Inc., in an amount not to exceed \$4,400,000 for preliminary design to upgrade Metropolitan's Water Quality Laboratory
- Authorize an agreement with Rincon Consultants, Inc., in an amount not to exceed \$550,000 for environmental support services

Distribution System

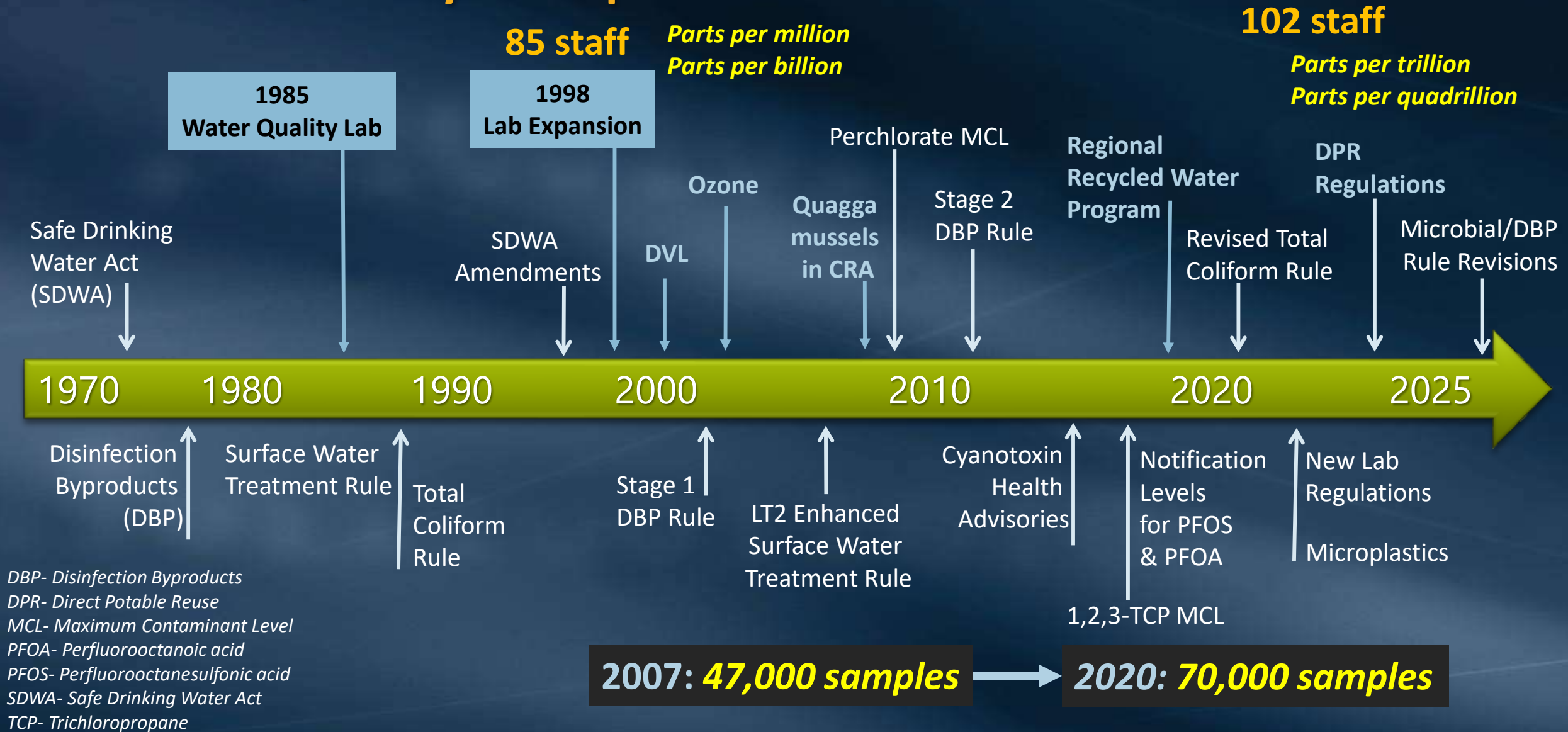


Water Quality Lab – An Essential Facility

- Compliance monitoring and testing
 - Bacteria, disinfection byproducts
 - Metals and minerals, organic chemicals
- General water quality monitoring
 - pH, temperature, TDS, alkalinity, taste & odor, color
- Distribution system integrity
 - Shutdowns and repairs/maintenance
 - Nitrification monitoring (nitrite, ammonia)
- Applied research
 - Treatment processes, emerging contaminants, analytical methods, alternative source waters



Water Quality's Expanded Functions



Current Building Limitations



- Latest improvements to the lab completed in 1998
- Spaces fully utilized or beyond capacity
- Under-utilized and inefficient spaces
- Lab areas open to common areas
- Vulnerable to seismic events



Scenarios Evaluated



- #1 - Retrofit the Existing Lab
 - Maximizes existing footprint
 - Does not address additional space requirements for the near future
- #2 - Retrofit and Expansion of Existing Lab
 - Maximizes existing footprint
 - Addresses anticipated space requirements into the future
- #3 - Construct New Building
 - Most costly option
 - Utilizes critical site space for future projects

Project Approach

- Build a seismically resilient, state-of-the-art laboratory to meet requirements and challenges for the next 30 years
 - **Retrofit Existing Building**
 - Seismic retrofit to essential facility criteria
 - Functional space improvements and necessary utility upgrades
 - **Add Additional Space to Existing Building**
 - Up to 30,000 sq ft of new lab space
- **New Lab Equipment**
 - Coordinate existing CIP for new lab equipment with overall building construction schedule



Alternatives Considered

- Metropolitan staff to complete all preliminary design activities
 - Requires specialized engineering design for laboratories
 - Specialized expertise required for laboratory layout and space planning
 - Laboratory specific requirements for mechanical, electrical, and plumbing designs
 - Support needed for large-project LEED Gold Certification
- Selected option
 - Consultant and staff work as a hybrid team
 - Consultant provides laboratory specific expertise
 - Metropolitan staff to lead the structural and civil designs

New Agreement

La Cañada Design Group, Inc.

- Prequalified under RFQ No. 1182
 - **Scope of Work:**
 - Work with stakeholders to establish design criteria for lab layout and expansion footprint
 - Preliminary design for architectural, mechanical, electrical, and instrumentation and control
 - Integrate requirements for LEED Gold certification
 - Develop Class 3 construction cost estimate
 - Develop a move management plan addressing relocation logistics and temporary lab space planning
- SBE participation level: 100%
- NTE amount: \$4.4M

New Agreement

Rincon Consultants, Inc.

- Prequalified under RFQ No. 1265
 - **Scope of Work:**
 - Prepare the Program Environmental Impact Report (EIR) for the project and include other projects at Weymouth Plant
 - Prepare technical analysis and other studies to support the EIR including noise, traffic, hazards, cultural resources, biological resources, and tribal consultation
 - Prepare and support Metropolitan on related outreach activities
- SBE participation level: 25%
- NTE amount: \$550,000

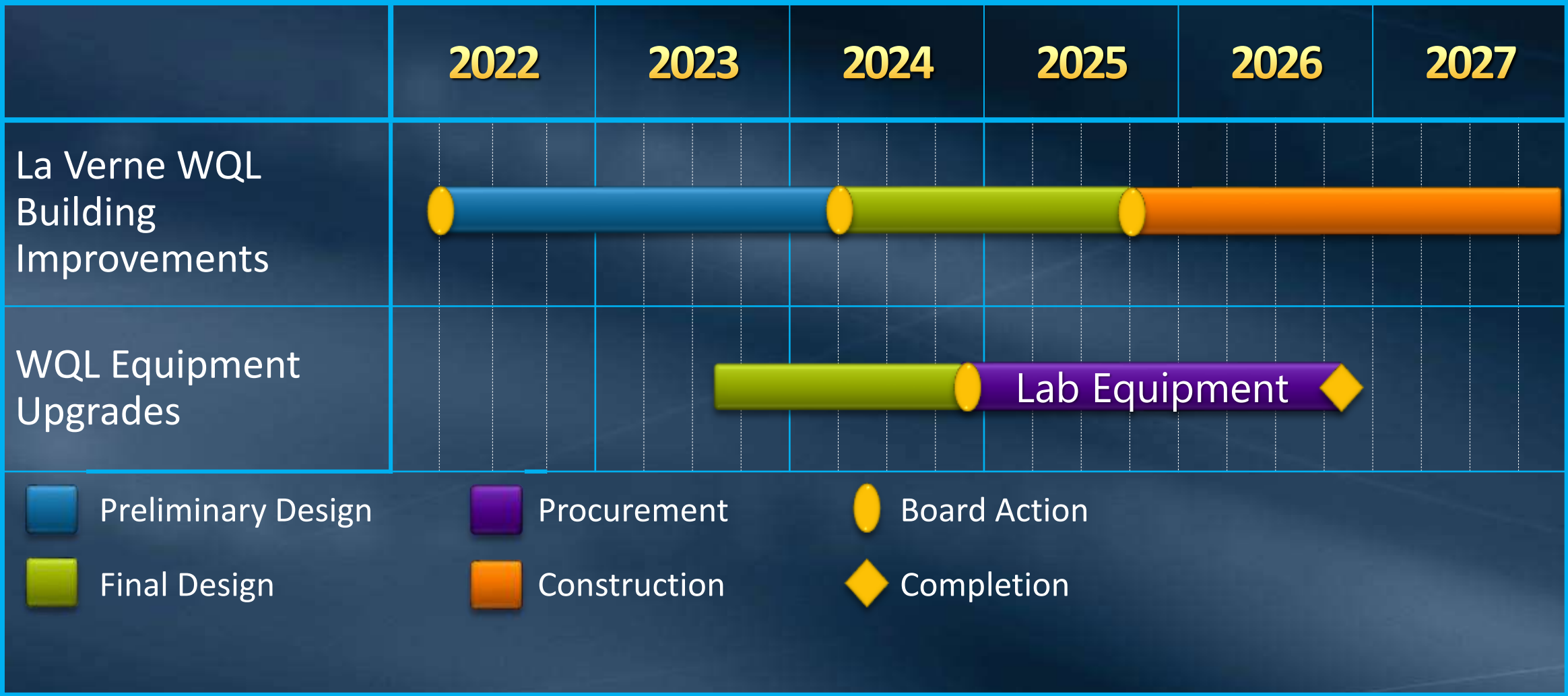
Metropolitan Scope

- Preliminary design for structural and civil project elements
 - North and south wing seismic reinforcement
 - Structural design for building expansion
 - Site civil for all project elements
- Project management and design oversight
- Environmental support for CEQA
 - Address CEQA requirements for new projects at Weymouth

Allocation of Funds

Metropolitan Labor	
Preliminary Design	\$1,171,600
Program mgmt. & envir. support	861,840
Professional Services	
La Cañada Design Group, Inc.	4,400,000
Rincon Consultants, Inc.	550,000
Remaining Budget	296,560
<hr/>	
Total	\$7,280,000

Project Schedule



Board Options

- Option #1

- Authorize an agreement with La Cañada Design Group, Inc. for a not-to-exceed amount of \$4,400,000 to provide preliminary design to upgrade the functional capabilities of Metropolitan's Water Quality Laboratory at the La Verne site.
- Authorize an agreement with Rincon Consultants, Inc. for a not-to-exceed amount of \$550,000 to provide environmental support services for the planned facility upgrades at the La Verne site.

Board Options

- Option #2

- a. Do not authorize an agreement with La Cañada Design Group, Inc. for a not-to-exceed amount of \$4,400,000 to provide preliminary design to upgrade the functional capabilities of Metropolitan's Water Quality Laboratory at the La Verne site.
- b. Authorize an agreement with Rincon Consultants, Inc. for a not-to-exceed amount of \$550,000 to provide environmental support services for the planned facility upgrades at the La Verne site.

- Option #3

- Do not proceed with either agreement at this time.

Staff Recommendation

- Option #1





● **Board of Directors**
Engineering and Operations Committee

2/8/2022 Board Meeting

7-4

Subject

Amend the Capital Investment Plan for fiscal years 2020/2021 and 2021/2022 to include planning and implementation of infrastructure projects to improve water supply reliability for the west service area and authorize an agreement with Carollo Engineers, Inc. in an amount not to exceed \$300,000 for professional services; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

The current statewide drought and historically low allocation of State Water Project (SWP) supplies by the California Department of Water Resources directly impact Metropolitan's ability to deliver water to certain SWP dependent areas within its system. This action amends the Capital Investment Plan (CIP) to include planning and potential infrastructure improvements or agreements that would enhance operational flexibility and water delivery capabilities to member agencies within the west service area (West Area Water Reliability Improvements). Alternatives will be developed to convey up to 150 cubic feet per second (cfs) of flow from sources not currently available to the SWP dependent areas. Staff will provide regular progress updates to the Board on this work. As this project was not included in the CIP budget for fiscal years 2020/21 and 2021/22, this action amends the current CIP to include this effort. This action also authorizes a professional services agreement to provide hydraulic modeling and other technical support related to these infrastructure improvements.

Details

Background

Metropolitan's distribution system was originally constructed in the 1940s to deliver treated Colorado River Aqueduct (CRA) supplies throughout the service area. The system was expanded in the 1970s to connect to the SWP. The distribution system was designed to take advantage of the region's topography and primarily utilizes gravity to move water through the system. Much of the service area benefits from access to both CRA and SWP sources of supply; however, certain portions of the system can only receive limited CRA water due to inherent hydraulic limitations. These SWP dependent areas rely on stored SWP supplies, transfers, and exchange deliveries during multi-year droughts as California is currently experiencing.

In December 2021, the Board approved amending the current CIP to include three projects to improve supply reliability and flexibility on the eastern side of Metropolitan's system. These projects will enhance the ability to move alternative water supplies into SWP dependent areas fed from the Rialto Pipeline. As alternative supplies (e.g., stored water from Diamond Valley Lake or groundwater from San Bernardino Valley MWD) become available to the eastern side, preserved SWP supplies then become available to the western side.

The westernmost portions of the system, such as Ventura County and portions of the San Fernando Valley, are also service areas with limited access to CRA supplies. This western service area currently depends on raw water deliveries from the West Branch of the SWP and limited (up to 60 cfs) CRA deliveries from the Greg Avenue Pump Station. During the last drought in 2014, Metropolitan began refurbishing this pump station to ensure its reliability for the next drought. The rehabilitated pump station was placed into service in June 2021 and enables approximately 43,000 acre-feet per year of CRA supplies to be delivered to the west area to supplement the

extremely limited SWP supply. While the Greg Avenue Pump Station supplements deliveries to the western area, it only partially meets the need for SWP supplies in this area during extreme drought or outages.

In December 2021, the Board approved amending the current CIP to include three projects to improve supply reliability and flexibility on the eastern side of Metropolitan's system. These projects will enhance the ability to move alternative water supplies into SWP dependent areas fed from the Rialto Pipeline. One benefit of these projects to the western area is that as alternative supplies (e.g., stored water from Diamond Valley Lake or groundwater from San Bernardino Valley MWD) become available to the eastern side, preserved SWP supplies then become available to the western area.

Staff recommends evaluating additional alternatives to increase delivery reliability in the west area. Proposed work includes both a comprehensive assessment of wide-ranging alternatives and the advancement of two projects already identified by staff as potential options. Components of the planned work include:

- ***Alternative Supply and Delivery to West Area*** – A broad and comprehensive consideration of alternative approaches to ensuring supply reliability to west area SWP dependent areas is warranted. For example, a combination of local supply development, groundwater or surface storage, and interconnecting infrastructure between agencies could provide long-term reliability equal to or greater than simply accessing and moving CRA supplies.
- ***Greg Avenue Pumping*** – This potential project involves increasing the capacity of the existing Greg Avenue facility by expanding the current facility or adding a second pump station at a new site that can be connected to the discharge side of the existing Greg Avenue Pump Station.
- ***Sepulveda Feeder Pumping*** – This potential project involves new pumping facilities along the Sepulveda Feeder to push Colorado River water north from the central pool into the western area. Likely locations for the new west area pump station would be at the existing Venice and Sepulveda Canyon Pressure Control Structures.

In April 2020, the Board appropriated funds and authorized the General Manager to initiate or proceed with work on all capital projects identified in the CIP, subject to any limits on the General Manager's authority and CEQA requirements. This action amends the CIP to include the West Area Water Reliability Improvements. It is not anticipated that the addition of this project to the CIP will increase CIP expenditures in the current biennium beyond those which have been previously approved by the Board. Funds required for work to be performed pursuant to the subject project after fiscal year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP Evaluation Team to be included in the System Reliability Program.

West Area Water Supply Reliability Improvements – Preliminary Investigations

The preliminary investigation work to be performed in the current biennium includes conducting a feasibility study and developing a concept-level suite of options, which will include additional pumping facilities, local supply sources, and other options to improve supply reliability to the SWP dependent zones in the west service area. Near-term activities will be conducted with a hybrid effort of consultant and Metropolitan staff as described below. Metropolitan staff will perform planning and analysis of project options, overall project management, and consultant oversight. Staff will regularly return to the Board to provide updates on the progress of the work, present recommended courses of action, and award construction contracts.

A total of \$700,000 is required for these activities. Allocated funds include \$300,000 for planning, analysis, concept development, and technical assessments by Carollo Engineers, Inc. under a new agreement, as described below. Allocated funds for Metropolitan staff activities include \$161,000 for technical oversight and review of consultant's work; \$140,000 for coordination with member agencies to establish project parameters, project management, and project controls; and \$99,000 for remaining budget.

Technical Investigations (Carollo Engineers, Inc.) – New Agreement

Carollo Engineers, Inc. is recommended to perform preliminary investigations for the West Area Water Supply Reliability Improvements. Carollo Engineers, Inc. was prequalified under Request for Qualifications No. 1215. Carollo Engineers, Inc. was selected to perform this work because of their expertise in the designs of pumping plants, hydraulic analysis, and familiarity with Metropolitan's system. The planned activities include conceptual

level alternative evaluations; development of project needs criteria; hydraulic analyses including pressure and flow impacts to existing Metropolitan pipelines and mitigation strategies; facility siting investigations including right-of-way requirements; coordination with local power providers; and development of conceptual cost estimates. The estimated cost for these services is \$300,000.

This action authorizes a new agreement with Carollo Engineers, Inc. for a not-to-exceed amount of \$300,000 to provide conceptual alternative analysis for the West Area Water Supply Reliability Improvements. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 25 percent. Carollo Engineers, Inc. has agreed to meet this level of participation.

Alternatives Considered

Metropolitan staff is also progressing with study-level evaluations of several other potential infrastructure improvement options to enhance water reliability for SWP dependent service areas in Metropolitan's Western and Eastern areas. This includes investigating the need and feasibility of additional storage reservoirs. Staff will return to the Board for authorization to include additional selected infrastructure improvements in the CIP.

Summary

This action amends the current CIP to include investigation of enhanced deliveries to the western area of Metropolitan's distribution system that is dependent on raw water deliveries from the SWP. This action also authorizes a new agreement for technical analysis of several alternatives. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

Project Milestone

July 2022 – Report to Board on preliminary investigations of Westside Water Supply Reliability Improvements

Policy

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 51963, dated April 14, 2020 the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Amending the Capital Investment Plan (CIP) and authorizing work to proceed under the CIP, subject to the limits described above, is not defined as a project and is not subject to CEQA because it involves the creation of a general funding mechanism and general policy and procedure making with no commitment to proceed with any specific project at this time (Sections 15378(b)(4) of the State CEQA Guidelines). Furthermore, the proposed action involves feasibility or planning studies for possible future actions which the agency, commission or board has not yet approved, adopted or funded. Accordingly, the proposed action qualifies as a Statutory Exemption (Section 15262 of the State CEQA Guidelines). In addition, the proposed actions also involve basic data collection and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action, which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

- a. Amend the current CIP to include planning and implementation of infrastructure projects to improve water supply reliability for the western service area; and
- b. Authorize a new agreement with Carollo Engineers, Inc. in an amount not to exceed \$300,000 for technical investigations.

Fiscal Impact: Expenditure of \$700,000 in capital funds. Approximately \$700,000 will be incurred in the current biennium and has been previously authorized. It is not anticipated that the addition of the project listed above to the CIP will increase CIP expenditures in the current biennium beyond those which have been previously approved by the Board. The remaining funds for this project, including future construction costs, will be accounted for and appropriated under the next biennial budget.

Business Analysis: This project will enhance the reliability of water deliveries to member agencies within the westernmost portion of Metropolitan's service area.

Option #2

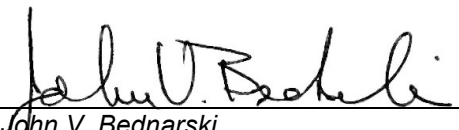

Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: This option would forgo improving the reliability of service to those member agencies in the westernmost portions of Metropolitan's service area.

Staff Recommendation

Option #1

 _____ John V. Bednarski Manager/Chief Engineer Engineering Services	1/19/2022 _____ Date
 _____ Adel Hagekhalil General Manager	1/20/2022 _____ Date

Attachment 1 – Allocation of Budgeted Funds

Attachment 2 – Location Map

Ref# es12684762

Allocation of Funds for Western Region Water Supply Reliability Improvements

	Current Board Action (Feb. 2022)
Labor	
Studies & Investigations	161,000
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	140,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	
Carollo Engineers, Inc	300,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	99,000
Total	\$ 700,000

This is the first action for Western Region Water Supply Reliability Improvements.





West Area Water Supply Reliability Improvements

Engineering and Operations Committee

Item 7-4

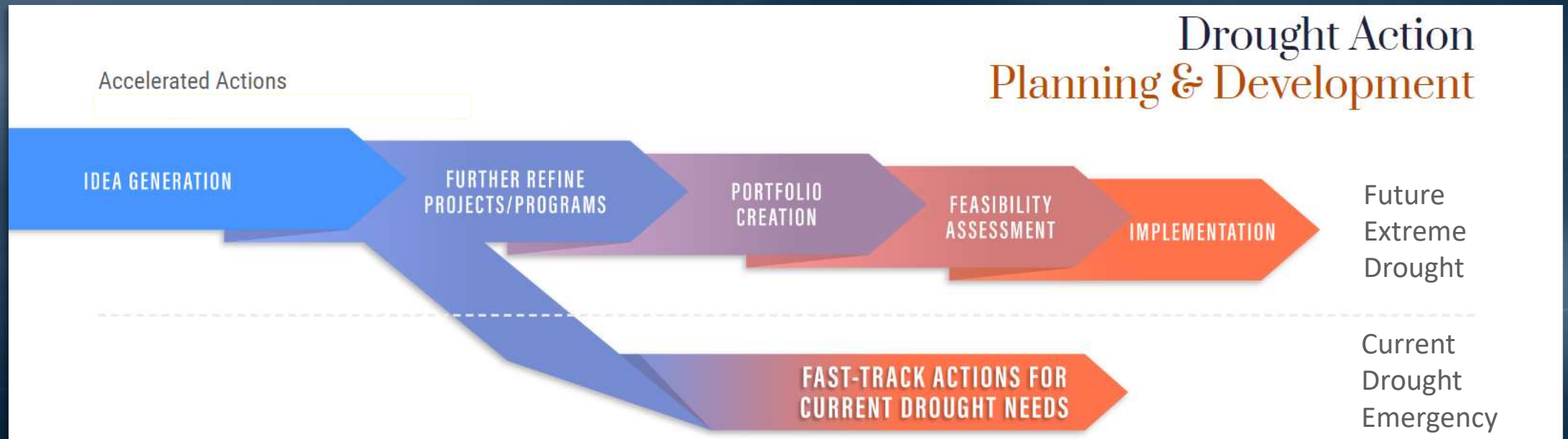
February 7, 2022

Current Action

- Amend the Capital Investment Plan for fiscal years 2020/2021 and 2021/2022 to include planning and implementation to improve water supply reliability for the west service area
- Authorize an agreement with Carollo Engineers, Inc. in an amount not to exceed \$300,000 for technical investigations

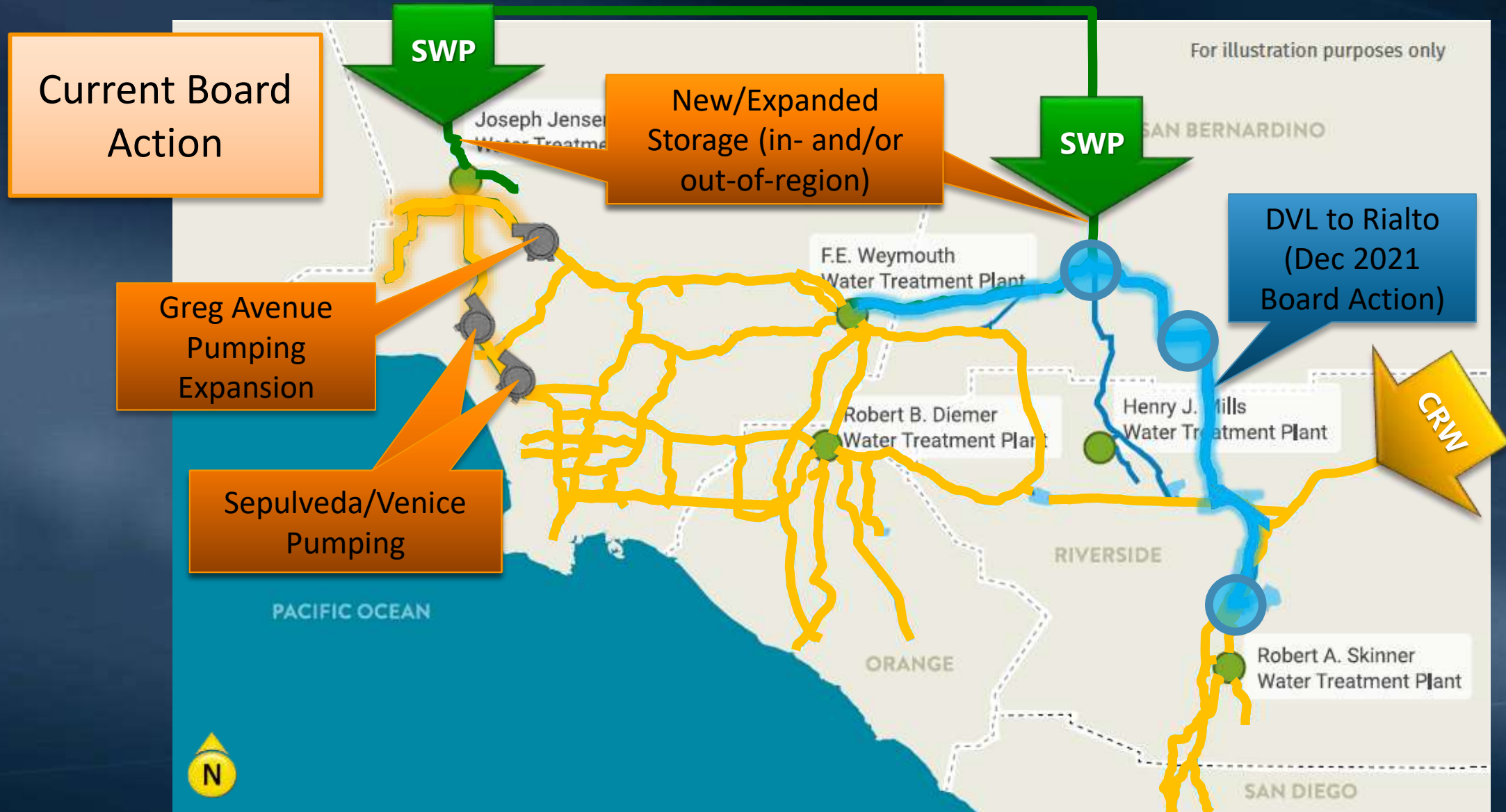
Background

- Some areas highly dependent on SWP supplies and impacted by extended severe drought on SWP system
 - Including areas served by West Branch
- Metropolitan is committed to resolve this issue
 - Accelerating both near-term actions and planning for mid- and long-term actions



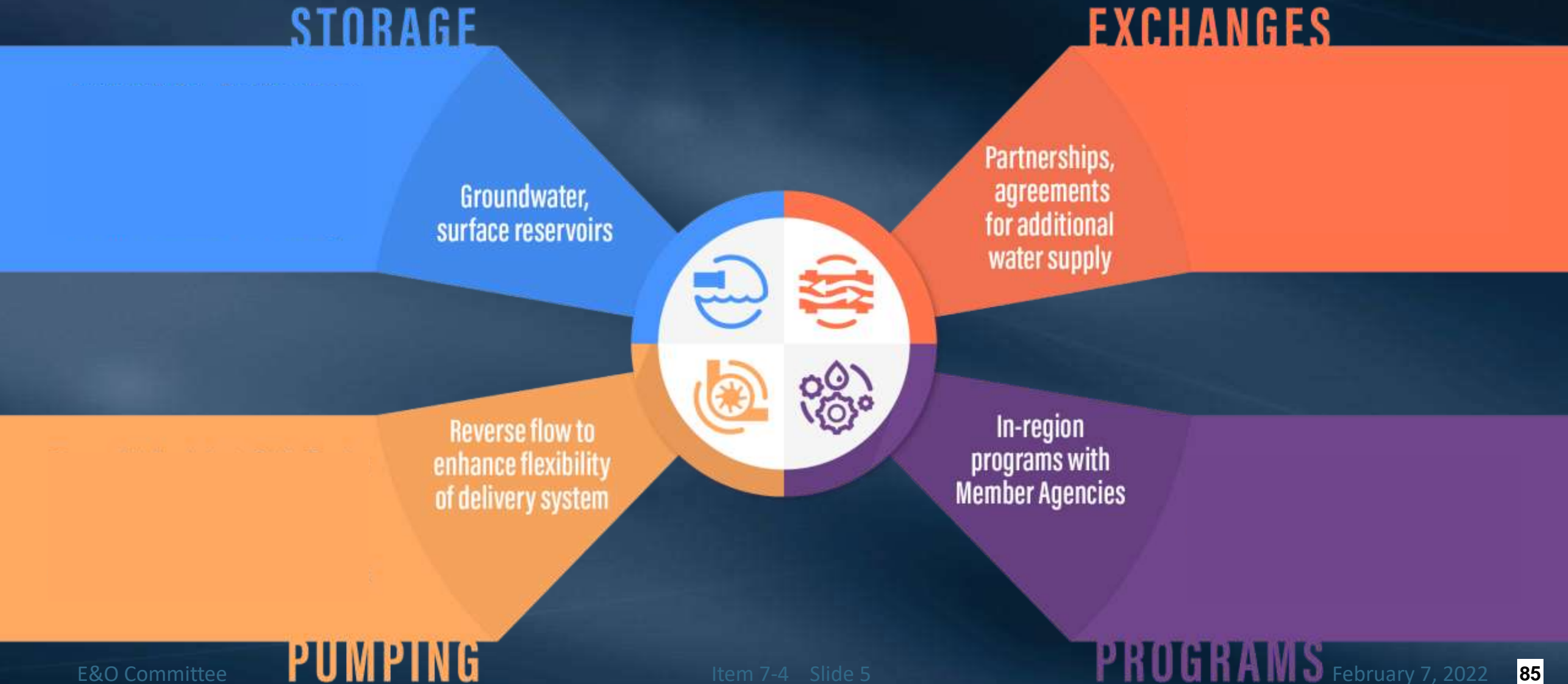
Drought Action Planning and Development

Evaluating a Variety of Options



Alternative Supply and Delivery

Broad Consideration of Alternative Approaches





Greg Avenue Pump Station Expansion

- Currently provides up to 55 cfs of CRA water to the west valley area
- Reconnaissance-level studies completed for expansion
- More detailed investigations of potential significant infrastructure modifications
 - Parallel piping
 - Increased surge protection
 - Additional booster pump



New Pump Stations at Venice PCS and Sepulveda PCS

- Deliver Colorado River water to the west valley area
- Supplement Greg Ave Pump Station deliveries
- Reconnaissance-level studies completed for new pump stations
- Pumping 50-100 cfs requires more detailed investigations
 - Potential significant infrastructure modifications
 - Sepulveda Feeder relining north of Venice PCS
 - Surge protection, onsite power availability, connection piping & valves

Carollo Engineers, Inc.

New Agreement

- Prequalified under RFP 1215
- Scope of work
 - Conceptual level alternative evaluations
 - Development of project needs criteria
 - Hydraulic analyses including pressure impacts to existing Metropolitan pipelines and mitigation strategies
 - Siting investigations including right-of-way requirements
 - Development of conceptual cost estimates
- SBE participation level: 25%
- NTE amount: \$300,000

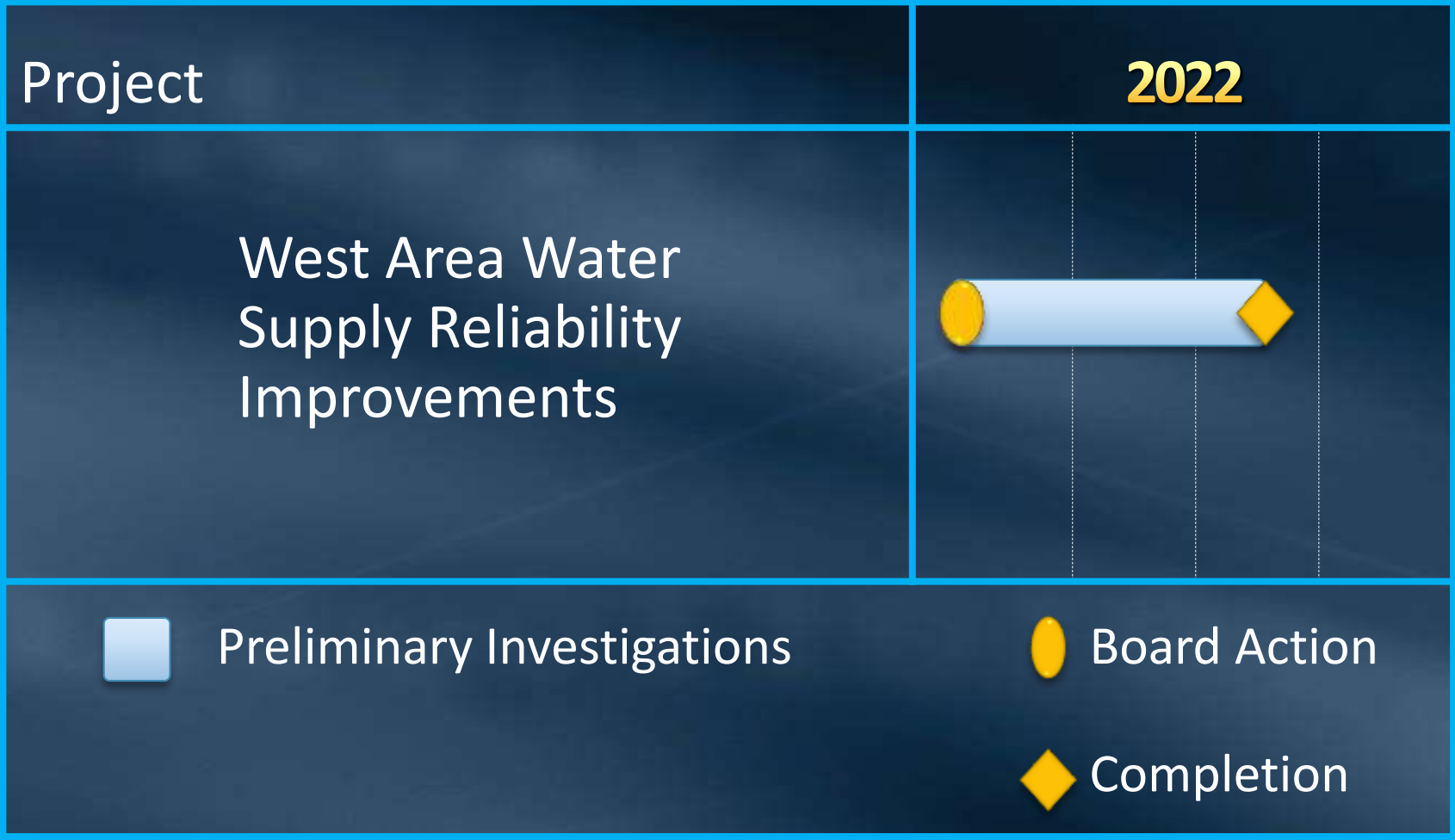
Metropolitan Scope

- Conduct comprehensive study of supply options for West Area agencies
 - Coordinate with member agencies to establish study parameters
 - Facilitate workshops to collaborate on option development
 - Create portfolios to improve water supply reliability
- Manage feasibility studies of two long-term pumping options
 - Oversee consultant work
 - Provide technical support
 - Communicate progress with member agencies

Allocation of Funds

Metropolitan Labor	
Preliminary Investigation	\$161,000
Agreement admin, coordination w/ agencies, and project management	140,000
Professional Services	
Carollo Engineers, Inc.	300,000
Remaining Budget	99,000
<hr/>	
Total:	\$700,000

Project Schedule



Board Options

- Option #1
 - a. Amend the current CIP to include planning and implementation of infrastructure projects to improve water supply reliability for the western service area; and
 - b. Authorize a new agreement with Carollo Engineers, Inc. in an amount not to exceed \$300,000 for technical investigations.
- Option #2
 - Do not proceed with the project at this time.

Staff Recommendation

- Option #1





Board of Directors
Engineering and Operations Committee

2/8/2022 Board Meeting

7-5

Subject

Review and consider Addendum No. 4 to the certified 2017 Programmatic Environmental Impact Report; and award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of a valve and equipment storage building at the Lake Mathews Reservoir site to support the Prestressed Concrete Cylinder Pipe Rehabilitation Program

Executive Summary

Due to the long-lead time to receive delivery of specialized pieces of equipment, such as large-diameter valves, staff typically procures the critical items in advance of construction to prevent potential manufacturing or logistical delays from impacting subsequent construction contracts that will install the Metropolitan-furnished equipment. This procurement approach is being utilized for the ongoing prestressed concrete cylinder pipe (PCCP) rehabilitation projects. For the first group of PCCP projects, 13 large valves and associated equipment are currently in production. Three valves have already been delivered to Metropolitan and are in temporary storage locations. Suitable facilities are needed to store and maintain the large equipment as they will be delivered to the region over the next two to three years. This action awards a contract for construction of a valve and equipment storage building at the Lake Mathews site to support the PCCP Rehabilitation Program.

Details

Background

In September 2011, Metropolitan's Board authorized the PCCP Rehabilitation Program in order to develop a comprehensive, long-term plan for replacement or relining of Metropolitan's five at-risk PCCP lines. The strategy for maintaining PCCP reliability consists of four coordinated elements: (1) continued assessment and monitoring of PCCP lines; (2) monitoring of stray currents and installation of cathodic protection; (3) near-term repair of PCCP segments; and (4) long-term rehabilitation.

The Second Lower Feeder is the initial PCCP feeder to be addressed under the program due to that pipeline's condition, its history of repairs, its high internal operating pressure, and the presence of corrosive soils and third-party stray currents. To date, four construction contracts have been completed, and 12 of the original 28 miles of PCCP on the Second Lower Feeder have been relined with steel pipe liner.

For the PCCP Program, staff procures large-diameter isolation valves and other long-lead, critical equipment and material in advance of the start of construction. Advanced procurement helps to prevent potential manufacturing or logistical delays from impacting future construction contracts. These contracts are typically scheduled with pipeline shutdowns that are coordinated with member agencies and local cities years in advance. Procuring valves in advance also ensures that the valves are available in the event of material shortages or to address an unanticipated repair.

In December 2018, the Board authorized a \$23,750,060 procurement contract to furnish three 48-inch and ten 54-inch conical plug isolation valves for the Second Lower Feeder and associated future PCCP projects. Delivery of these valves is scheduled to take place from 2021 to 2025. The valves will be stored and maintained until their installation under future PCCP rehabilitation contracts. As of November 2021, three of the 48-inch conical valves have been delivered and are currently stored in temporary facilities under conditions consistent with the manufacturer's instructions.

With the remaining ten valves scheduled to be delivered sequentially through 2025, there is a need to create a longer-term suitable storage approach for the valves. Staff recommends that a new storage building be constructed at the Lake Mathews site for this purpose. The new building will be suitable for storing the initial complement of 13 valves for the Second Lower Feeder project and will also be available to store valves and equipment required for the remaining PCCP rehabilitation projects that are currently scheduled to extend through 2036. The building will allow Metropolitan to comply with the manufacturer's storage instructions for the conical plug valves and avoid potential warranty disputes with manufacturers. After carefully evaluating available space at Metropolitan's existing facilities, assessing site conditions, and accessibility, staff has determined that the Lake Mathews site is the optimal location for the storage building. Once the building is completed, the valves that are currently being stored in temporary locations will be moved to the new building.

Final design for the PCCP Rehabilitation Valve Storage Building project is now complete, and staff recommends moving forward with construction of the project.

In accordance with the April 2020 action on the biennial budget for Fiscal Years 2020/21 and 2021/22, the General Manager will authorize staff to proceed with the actions described below, pending board award of the construction contract. Based on the current Capital Investment Plan expenditure forecast, funds for the work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15497). Funds required for work to be performed pursuant to the subject contract after fiscal year 2021/22 will be budgeted within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24. This project has been reviewed in accordance with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and was approved by Metropolitan's CIP Evaluation Team to be included in the PCCP Reliability Program.

PCCP Rehabilitation Valve and Equipment Storage Building – Construction

The project consists of constructing an approximately 18,200 square-foot pre-engineered metal building with a heavy-duty reinforced concrete slab foundation and motorized roll-up doors; performing site grading and paving; constructing a stormwater retention basin; installing a fire suppression system; modifying an existing power supply; and installing electrical duct banks and wiring. The building's interior concrete foundation and surrounding surface improvements will be designed and constructed in a manner that will accommodate the very heavy loading that will be applied to these surfaces when the valves are moved in and out of the building. Metropolitan forces will perform site clearing in advance of the contract. Metropolitan staff will perform submittal review, including the proposed building specifications.

A total of \$7,100,000 is required for this work. In addition to the amount of the contract described below, other funds to be allocated include \$90,000 for Metropolitan force construction, as described above; \$582,000 for construction management and inspection; \$372,000 for submittal review and preparation of record drawings; \$269,000 for technical support during construction by Lee & Ro, Inc. and \$165,000 for environmental monitoring and reporting by Helix Group Inc., both under existing board authorized agreements; \$534,000 for contract administration, environmental support, and project management; and \$329,000 for remaining budget.

Attachment 1 provides the allocation of the required funds. The total estimated cost to complete the PCCP Rehabilitation Valve and Equipment Storage Building, including the amount allocated to date and funds allocated for the work described in this action, is about \$8 million. Approximately \$850,000 has been expended on this project to date.

Award of Construction Contract (Facility Builders & Erectors, Inc.)

Specification No. 2013 for the construction of the PCCP Rehabilitation Valve and Equipment Storage Building was advertised on November 1, 2021. As shown in **Attachment 2**, seven bids were received and opened on December 14, 2021. The low bid from Facility Builders & Erectors, Inc. in the amount of \$4,759,000 complies with the requirements of the specifications. The other bids ranged from \$4,883,000 to \$5,640,000, while the engineer's estimate for this project was \$7,000,000. Staff investigated the difference between the engineer's estimate and the low bid and attributes the difference to a conservative engineer's estimate that factored inflation for labor and recent supply chain disruption issues for the pre-engineered metal building structure. For this contract, Metropolitan established a Small Business Enterprise participation level of at least 20 percent of the bid

amount. Facility Builders & Erectors, Inc has committed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**.

As described above, Metropolitan staff will perform construction management and inspection. Engineering Services' performance metric target range for inspection of projects with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for inspection is 12 percent of the total construction cost. The total cost of construction for this project is \$4,849,000, which includes the cost of the contract (\$4,759,000) and Metropolitan force construction (\$90,000).

Alternatives Considered

Staff evaluated several alternatives for storage of PCCP rehabilitation equipment. The first alternative considered use of currently available storage spaces within Metropolitan's existing facilities. The Sunset Garage, located adjacent to Metropolitan's former Sunset Headquarters, has space to store one valve. Existing warehouse space at the La Verne site is suitable to store two valves. The remaining Metropolitan facilities that were surveyed do not have available space to store the large valves. This approach, even if feasible, would have distributed valves throughout Metropolitan's service area and would have led to difficulties and inefficiencies in providing regular maintenance to the valves while they were in storage.

Staff also considered renting a warehouse with enough space to store all the valves in a single location. The estimated cost to rent the required storage space for ten years is approximately \$4 million with no guarantee of lease renewal from the property. Moreover, suitable storage space rentals were limited since each valve crate for the larger valves weighs up to 35 tons, which can damage a conventionally designed warehouse foundation. Consequently, staff determined that the available potential inventory of suitable available lease sites would be very limited or nonexistent.

Staff also considered enlarging the planned La Verne Warehouse Storage Replacement project to include sufficient space for storage of PCCP equipment. The La Verne Warehouse acts as Metropolitan's central equipment storage for capital and O&M project equipment and general facility supplies. The current La Verne Warehouse is planned to be replaced due to seismic deficiencies, but this project is not scheduled to be completed until 2027 or 2028. This alternative does not meet the equipment delivery dates for the PCCP equipment, and other temporary storage would need to be identified.

Staff recommends the construction of a new equipment storage building at the Lake Mathews site. This alternative is a cost-effective approach and will minimize risks associated with temporary storage space and potential contractual issues with the rental options. This alternative is consistent with the objectives of Metropolitan's PCCP Rehabilitation Program, long-term cost saving, and will provide maximum flexibility for all future storage needs for PCCP and relevant projects.

Summary

This action awards a \$4,759,000 construction contract to Facility Builders & Erectors, Inc. to furnish and construct the PCCP Rehabilitation Valve and Equipment Storage Building.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2020/21 capital expenditure plan. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors for Low Bidder, and **Attachment 4** for the Location Map.

Project Milestone

September 2023– Completion of construction of the PCCP Rehabilitation Equipment and Valve Storage Building

Policy

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

By Minute Item 50699, dated January 10, 2017, the Board certified the Final PEIR for the PCCP Rehabilitation Program, and approved the program for the Second Lower Feeder, Sepulveda Feeder, Calabasas Feeder, Rialto Pipeline, and AMP for the purposes of CEQA

By Minute Item 51421, dated December 11, 2018 Board awarding a \$23,750,060 procurement contract to Ebara Corporation to furnish conical plug isolation valves for the Second Lower Feeder.

By Minute Item 51963, dated April 13, 2020, the Board appropriated a total of \$500 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Metropolitan's Board certified the PCCP Rehabilitation Program's Final PEIR on January 10, 2017. At that time, the Board also adopted the Findings, the SOC, the MMRP, and the program itself. On April 3, 2019, Addendum No. 4 to the Final PEIR was prepared to document the proposed minor modifications to the approved project as described in this letter. CEQA and the State CEQA Guidelines require the preparation of an addendum to a previously certified PEIR if changes or additions are necessary, but none of the conditions calling for the preparation of a subsequent EIR have occurred (Section 15164 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Review and consider Addendum No. 4 to the 2017 Programmatic Environmental Impact Report; and Award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of the PCCP Rehabilitation Valve and Equipment Storage Building.

Fiscal Impact: Expenditure of \$7,100,000 in capital funds. Approximately \$2,100,000 will be incurred in the current biennium and has been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following Board approval of those budgets

Business Analysis: This option will protect Metropolitan's assets; enhance operational flexibility; and reduce risk of project delays for the PCCP Program.

Option #2


Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: This option will require that staff pursue another, less cost-effective option for storage of the large-diameter valves for PCCP rehabilitation.

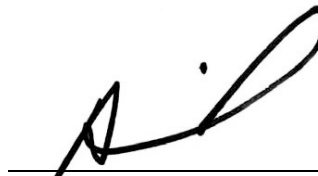
Staff Recommendation

Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services

1/24/2022
Date



Adel Hagekhalil
General Manager

1/26/2022
Date

Attachment 1 – Allocation of Funds**Attachment 2 – Abstract of Bids****Attachment 3 – Listing of Subcontractors****Attachment 4 – Location Map****Attachment 5 – Addendum No. 4 to Final PEIR****Attachment 6 – Final PEIR****Attachment 7 – Findings, MMRP and SOC**

Ref# ES12685344

Allocation of Funds for PCCP Rehabilitation Valve and Equipment Storage Building

	Current Board Action (Feb. 2022)
Labor	\
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	534,000
Submittals Review & Record Drwgs.	372,000
Construction Inspection & Support	582,000
Metropolitan Force Construction	90,000
Materials & Supplies	-
Incidental Expenses	
Professional/Technical Services	
Helix Inc. (Environmental Consultant)	165,000
Lee & Ro, Inc.	269,000
Right-of-Way	-
Equipment Use	-
Contracts	
Facility Builders & Erectors, Inc.	4,759,000
Remaining Budget	329,000
Total	\$ 7,100,000

The total amount expended to date for the PCCP Rehabilitation Valve and Equipment Storage Building is approximately \$850,000. The total estimated cost to complete the facility, including the amount appropriated to date and funds allocated for the work described in this action, is about \$8 million.

The Metropolitan Water District of Southern California

Abstract of Bids Received on December 14, 2021, at 2:00 P.M.

Specifications No. 2013

Lake Mathews Reservoir

PCCP Rehabilitation Valve and Equipment Storage Building

The work includes furnishing and erecting an approximately 18,200 sq. ft. pre-engineered metal building with a reinforced concrete slab foundation and motorized roll-up doors; site grading, installation of a stormwater basin, asphalt paving, a fire protection system; modification of existing power supply; and installation of electrical duct banks and wiring.

Engineer's estimate: \$7,000,000

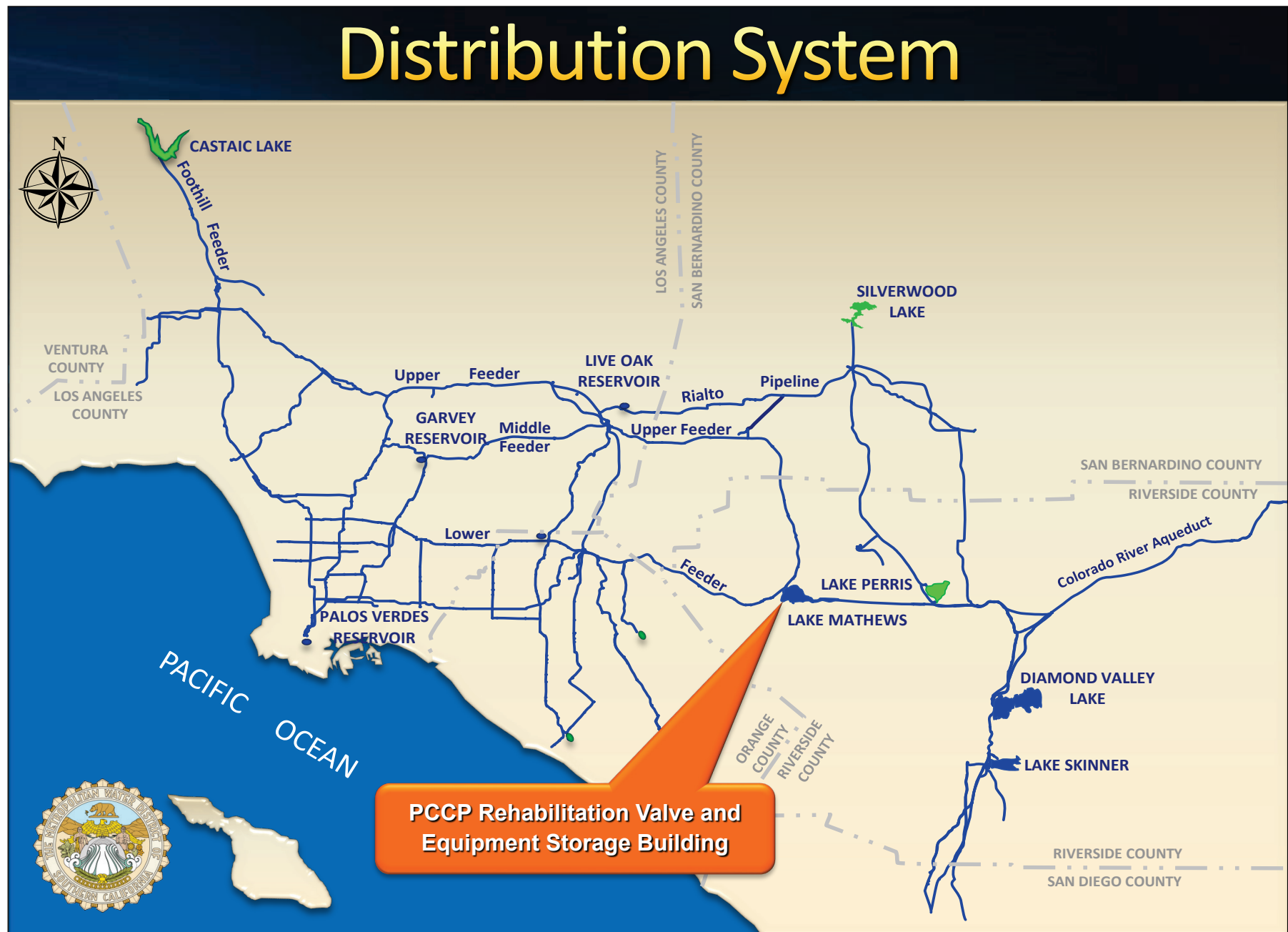
Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Facility Builders & Erectors, Inc. Anaheim, CA	\$4,759,000	\$2,207,000	46%	Yes
Woodcliff Corporation Los Angeles, CA	\$4,883,000	-	-	-
ACT I Construction, Inc. Norco, CA	\$5,183,586	-	-	-
PCN3, Inc. Los Alamitos, CA	\$5,288,000	-	-	-
Trinity Construction Blue Jay, CA	\$5,307,040	-	-	-
R.J. Daum Construction CO. Garden Grove, CA	\$5,537,751	-	-	-
Insight Pacific Brea, CA	\$5,640,000	-	-	-

¹ Small Business Enterprise (SBE) participation level established at 20% for this contract.

The Metropolitan Water District of Southern California
Subcontractors for Low Bidder
Specifications No. 2013
PCCP Rehabilitation Valve and Equipment Storage Building

Low bidder: Facility Builders & Erectors, Inc.

Subcontractor and Location
Haitbrink Asphalt Paving, Inc. Corona, CA
Purnico, Inc. Yorba Linda, CA
Total Quality Construction Corp. Beaumont, CA
Earth Tek Engineering Chino Hills, CA
GMAT Inc., DBA Overhead Door Company of Inland Empire Colton, CA
Harris & Ruth Painting Contracting West Covina, CA
Millennium Fire Protection Corporation Oceanside, CA
Cicle City Electric Riverside, CA





*THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA*
700 N. Alameda Street, Los Angeles, California 90012

2/8/2022 Board Meeting

Board Letter # 7-5

Review and consider Addendum No. 4 to the certified 2017 Programmatic Environmental Impact Report; and award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of a valve and equipment storage building at the Lake Mathews Reservoir site to support the Prestressed Concrete Cylinder Pipe Rehabilitation Program

[Attachment 5 – Addendum No. 4 to Final PEIR](#)

The CEQA documentation attachments are not included.



*THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA*
700 N. Alameda Street, Los Angeles, California 90012

2/8/2022 Board Meeting

Board Letter # 7-5

Review and consider Addendum No. 4 to the certified 2017 Programmatic Environmental Impact Report; and award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of a valve and equipment storage building at the Lake Mathews Reservoir site to support the Prestressed Concrete Cylinder Pipe Rehabilitation Program

[Attachment 6— Final PEIR](#)

The CEQA documentation attachments are not included.



*THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA*
700 N. Alameda Street, Los Angeles, California 90012

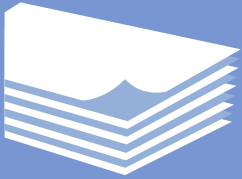
2/8/2022 Board Meeting

Board Letter # 7-5

Review and consider Addendum No. 4 to the certified 2017 Programmatic Environmental Impact Report; and award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of a valve and equipment storage building at the Lake Mathews Reservoir site to support the Prestressed Concrete Cylinder Pipe Rehabilitation Program

[Attachment 7– Final PEIR Findings, MMRP and SOC](#)

The CEQA documentation attachments are not included.

**ADDENDUM #4**

to the

**Programmatic Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program
Valve Storage Building**

October 2021



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

Metropolitan Report No. 1527-4

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ADDENDUM #4

to the

PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

for the

PRESTRESSED CONCRETE CYLINDER PIPE
REHABILITATION PROGRAM

VALVE STORAGE BUILDING

SCH: 2014121055

Background

Lead Agency: The Metropolitan Water District of Southern California

Addendum to Certified Programmatic Environmental Impact Report Pursuant to: California Code of Regulations, Title 14, Division 6, Chapter 3, Article 11, Section 15164.

Background and Description of the Prestressed Concrete Cylinder Pipe Rehabilitation Program:

Between 1962 and 1985, 163 miles of Prestressed Concrete Cylinder Pipeline (PCCP) were installed throughout The Metropolitan Water District of Southern California's (Metropolitan) service area. Under certain subsurface conditions, PCCP lines have an elevated risk of failure compared with other types of pipe. In response to this risk of failure, in the late 1990s, Metropolitan inspected and assessed all 163 miles of PCCP within its distribution system. In 2011, Metropolitan initiated a comprehensive program of inspections to evaluate and rank PCCP lines with the highest risk of failure. The data indicate that the following five pipelines represent the highest risk: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder. The PCCP Rehabilitation Program (PCCP Program) was developed to rehabilitate the PCCP portions of the five subsurface water distribution pipelines (also known as feeders) that were identified as having the highest risk as described above.

The PCCP Program is designed to maintain the reliability of Metropolitan's distribution system to minimize risks associated with failures by proactively rehabilitating each portion of PCCP, starting with the pipes that show the greatest risk of failure. The PCCP Program will help Metropolitan avoid possible unplanned system outages, thereby increasing service reliability for customers within Metropolitan's service area.

The following are the objectives of the PCCP Program:

- Reduce the risk of unplanned outages.
- Extend the service life of the pipelines.
- Perform the rehabilitation work in a cost-effective manner.
- Minimize the effects of rehabilitation efforts on Member Agency deliveries.
- Minimize the loss of hydraulic capacity due to rehabilitation.
- Improve system operational and emergency flexibility.

A Programmatic Environmental Impact Report (PEIR) was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code [PRC] Section 21000 et seq.) and the Guidelines for Implementation of CEQA (State CEQA Guidelines) published by the Public Resources Agency of the State of California (California Code of Regulations, Title 14, Section 15000 et seq.). The PCCP PEIR was certified by the Metropolitan Board of Directors on January 10, 2017.

Proposed Project

The proposed project, PCCP Rehabilitation Valve Storage Building, consists of a new valve storage building within the existing Metropolitan facility at Lake Mathews in Riverside County (County). The new building would be located within an existing complex of buildings at the northern portion of Metropolitan's Lake Mathews facility. The proposed project involves the construction of an approximately 18,200-square-foot pre-engineered metal building for valve storage during the PCCP rehabilitation activities. The building site is proposed to be graded and paved with concrete slab-on-grade foundation prior to installation of the building. The areas surrounding the building would be paved with asphalt concrete and include swales for stormwater runoff. A water retention basin to capture excess runoff from new pavement for the building would be installed. To comply with Fire Department code, a new fire hydrant, 6-inch riser, and water line to support a fire suppression system would be installed. The proposed project would also include upgrade to the existing electrical panel adjacent to Building 1 and Building 3 at the Lake Mathews facility.

Environmental Consequences

Consistent with the procedures identified in Section 15168(c) of the State CEQA Guidelines, the proposed project is a subsequent activity that is part of the PCCP Program, which "must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared." Metropolitan has prepared an Initial Study to determine if the proposed project would have new effects that were not examined in the PEIR.

The environmental consequences of the proposed project are described in the attached Initial Study. The impacts of the proposed project are compared to the impacts described in the PEIR to determine whether the proposed project would result in new impacts not previously described and whether those new impacts would be significant, or whether the proposed project would result in significant impacts that are substantially more severe than the impacts identified in the PEIR. Several environmental resource areas are not discussed in this Initial Study, as these items were determined not to require further analysis

beyond what was included for the program-level analysis portion of the PCCP Program in the December 2014 Initial Study. The State CEQA Guidelines Appendix G items that are not included in this Initial Study are detailed in the introductory section.

The categories of impacts evaluated in the attached Initial Study include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

As described in the Initial Study that follows, the impacts of the proposed project are either consistent with the impacts described in the PEIR or less severe than those identified in the PEIR; therefore, the proposed project would not result in new significant impacts or substantially more severe significant impacts than those described in the PEIR. All applicable mitigation measures identified in the PEIR will be implemented for the proposed project.

Finding

This Addendum to the PCCP PEIR reflects the independent judgement of Metropolitan. Pursuant to Section 15168 of the State CEQA Guidelines, the proposed project is within the scope of the program covered by the PCCP PEIR. The proposed project would result in no new significant environmental impacts or substantially more severe significant impacts than those described in the PEIR. The Initial Study identifies mitigation measures from the PEIR that will be implemented for the proposed project. No new project-specific mitigation measures were identified. Consequently, the proposed project would not affect the original January 2017 program approval determination, and no supplemental EIR, subsequent EIR, or Mitigated Negative Declaration to the PEIR is required.

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INITIAL STUDY FOR THE PRESTRESSED CONCRETE CYLINDER PIPE REHABILITATION PROGRAM VALVE STORAGE BUILDING

The Metropolitan Water District of Southern California
Environmental Planning Section
700 N. Alameda Street
Los Angeles, California 90012

MAILING ADDRESS:
P.O. Box 54153
Los Angeles, California 90054-0153

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Metropolitan Report No. 1527-4
October 2021



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A Air Quality Modeling Outputs

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LIST OF ACRONYMS

AB	Assembly Bill
ALUCP	airport land use compatability plan
AQMP	Air Quality Management Plan
BMP	best management practice
CAL FIRE	California Department of Forestry and Fire Protection
CEQA	California Environmental Quality Act
CMP	Congestion Management Plan
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalent
CY	cubic yard(s)
dba	A-wighted decibel
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
EO	Executive Order
GHG	greenhouse gas
HCP	Habitat Conservation Plan
LST	Localized Significance Threshold

LUST	leaking underground storage tank
MSHCP	Multiple Species Habitat Conservation Plan
NCCP	Natural Community Conservation Plan
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
PCCP	Prestressed Concrete Cylinder Pipeline
PEIR	Programmatic Environmental Impact Report
SB	Senate Bill
SCAQMD	South Coast Air Quality Managemetn District
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

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INTRODUCTION

Purpose of the Initial Study

The purpose of this Initial Study is to assess the potential for new or more severe significant environmental impacts for the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program Valve Storage Building (proposed project) beyond those identified in the Programmatic Environmental Impact Report (PEIR) prepared for the PCCP Program. The PEIR was certified by The Metropolitan Water District of Southern California's (Metropolitan) Board of Directors on January 10, 2017 (SCH #2014121055) and addressed the potential for environmental impacts for each of the five pipelines that would be rehabilitated under the PCCP Program. The proposed project is a new storage building to store valves for the PCCP Program within the existing Metropolitan facility at Lake Mathews in Riverside County (County) (see Figures 1 and 2).

The PCCP Program PEIR was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code [PRC] Section 21000 et seq.) and the Guidelines for Implementation of CEQA (State CEQA Guidelines) published by the Public Resources Agency of the State of California (California Code of Regulations, Title 14, Section 15000 et seq.). Consistent with the procedures identified in Section 15168(c) of the State CEQA Guidelines, the proposed project is a subsequent activity that is part of the PCCP Program, which "must be examined in the light of the PEIR to determine whether an additional environmental document must be prepared." Metropolitan is conducting an Initial Study to determine if the proposed project would have new effects that were not examined in the PEIR. In accordance with the State CEQA Guidelines Section 15168(c)(1) and (2), in the event that no new effects from the subsequent activity are identified and no new mitigation measures are required, Metropolitan can approve the activity as being within the scope of the program covered by the PEIR, and no new environmental document is required. However, if new or more severe impacts or additional mitigation measures are identified, a Negative Declaration or Environmental Impact Report (EIR) is required.

Scope of the Initial Study

As discussed above, this Initial Study evaluates the proposed project to determine whether new or more severe environmental effects beyond those identified in the PEIR would occur. Previous analysis as part of the December 2014 Initial Study/Notice of Preparation prepared for the PCCP Program determined that further analysis would not be required for some resource areas. Only a programmatic analysis was conducted for the certified PEIR; therefore, this Initial Study serves as the project-level analysis for one portion of the PCCP Program—the new valve storage building proposed within the existing Metropolitan facility at Lake Mathews. The following items were determined not to require further analysis beyond what was included in the December 2014 Initial Study because no significant environmental impacts were identified:

- II. Agriculture and Forestry Resources ((b) conflict with agricultural use or Williamson Act; (c) conflict with forestland or timberland zoning; (d) conversion of forestland)
- VI. Geology and Soils ((e) soils incapable of supporting septic tanks)
- IX. Hydrology and Water Quality ((b) groundwater supplies; (f) otherwise substantially degrade water quality; (g) housing in a 100-year flood hazard area; (h) structures in a 100-year flood hazard zone; (i) risk due to flooding or levee/dam failure)

- XI. Mineral Resources ((a) loss of availability of a mineral resource of value to the region and state; (b) loss of availability of a locally important mineral resource)
- XIII. Population and Housing ((a) induce substantial population growth; (b) displace substantial number of housing units; (c) displace substantial numbers of people)
- XIV. Public Services ((a) provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities)

The PCCP PEIR included an analysis of energy conservation consistent with Appendix F to the State CEQA Guidelines, which concluded that energy consumption related to program implementation would not be wasteful, inefficient, or unnecessary. Because Appendix F specifies that energy conservation is to be considered as part of an EIR, and the PEIR considered energy conservation in the analysis of program energy consumption, no additional analysis related to energy conservation is included in this Initial Study.

Additional analyses for issues and resources not included in the list above are provided in the Initial Study checklist that follows.

Format of the Initial Study

The Initial Study uses a modified version of the checklist set forth in Appendix G of the State CEQA Guidelines. It indicates whether an environmental impact category would have new or more severe significant impacts than those identified in the PCCP PEIR, or whether impacts would be less than or equal to those identified in the PCCP PEIR. In addition, the Initial Study identifies applicable mitigation measures included in the PCCP PEIR for implementation, as part of the proposed project. Mitigation measures are summarized within the Initial Study; the PCCP PEIR should be referenced for the full mitigation measures. In certain circumstances, the mitigation measures included in the PCCP PEIR are not applicable to the proposed project because the project location or specific characteristics of the proposed project do not trigger the need for mitigation.

APPENDIX G, ENVIRONMENTAL CHECKLIST FORM

1. Title

Initial Study for the Prestressed Concrete Cylinder Pipe Rehabilitation Program Valve Storage Building

2. Lead Agency Name and Address

The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, California 90012

Mailing Address

P.O. Box 54153
Los Angeles, California 90054-0153

3. Contact Person and E-mail

Lilia I. Martínez, Senior Environmental Specialist
EP@mwadh2o.com

4. Location

Riverside County, California

5. Sponsor's Name and Address

The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, California 90012

6. Land Use

Public Facilities

7. Zoning

Watercourse, Watershed and Conservation Areas (W-1)

8. Project Description

The Prestressed Concrete Cylinder Pipe Rehabilitation Program (PCCP Program) Valve Storage Building Project (proposed project) would construct a new valve storage building for the PCCP Program within the existing Metropolitan facility at Lake Mathews water storage reservoir in western Riverside County; see Figure 1, *Regional Location*, and Figure 2, *Project Location (Aerial Photograph)*. A discussion of PCCP PEIR components and a detailed description of the proposed project are provided below.

PCCP PEIR Components

The PCCP Program consists primarily of pipeline rehabilitation and rehabilitation of other facilities along the pipelines, such as equipment vaults, valves, and other appurtenances. Rehabilitation would occur at various locations along approximately 100 miles of the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder water distribution lines within the Metropolitan service area. For pipelines, the term “rehabilitation” is used to describe either relining of the pipe or installation of supplemental or relocated lines. For vaults, valves, and other appurtenant structures, the term “rehabilitation” is used to describe either refurbishment or replacement. As discussed in the PEIR, rehabilitation of PCCP can be categorized as primary, secondary, and associated temporary construction components. These components and the various methods needed to construct, install, and operate the components are described in Section 3.6, *Program Components*, of the PEIR and summarized below.

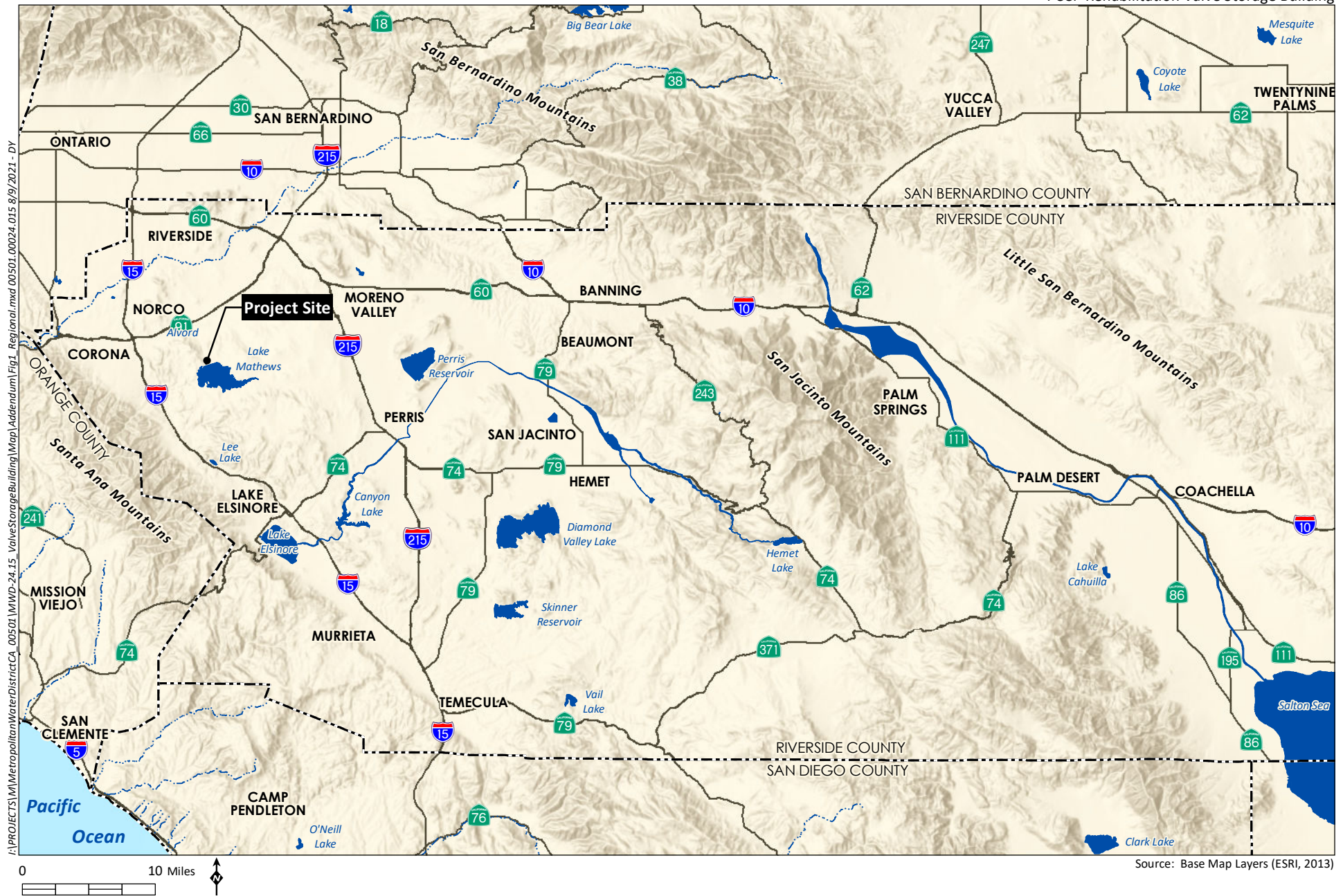
- Primary components include the different methods of rehabilitation considered for segments of the pipelines under the PCCP Program. These rehabilitation methods include steel cylinder relining with collapsed pipe, steel pipe slip-lining with non-collapsed pipe, and replacement or new pipe construction.
- Secondary components include permanent appurtenant structures. These appurtenant structures include buried (underground) structures and above ground enclosures. Buried structures include vaults that house piping such as those at interconnections and equipment such as valves, meters, service connections, and blow-offs. Above ground enclosures, typically located on sidewalks or median strips, house air release/vacuum valves and air vents. New vaults with new equipment would be constructed and existing appurtenant structures, including their equipment, would be rehabilitated as necessary.
- Temporary construction components include pipe access sites, structure excavation sites, contractor work areas, and equipment staging areas.

While the proposed building would be used for valve storage throughout the duration of the PCCP Program as a temporary construction component, Metropolitan intends to retain the building following the completion of the PCCP rehabilitation activities for other uses. As such, the proposed site improvements would be retained, and the site would not be returned to pre-construction conditions.

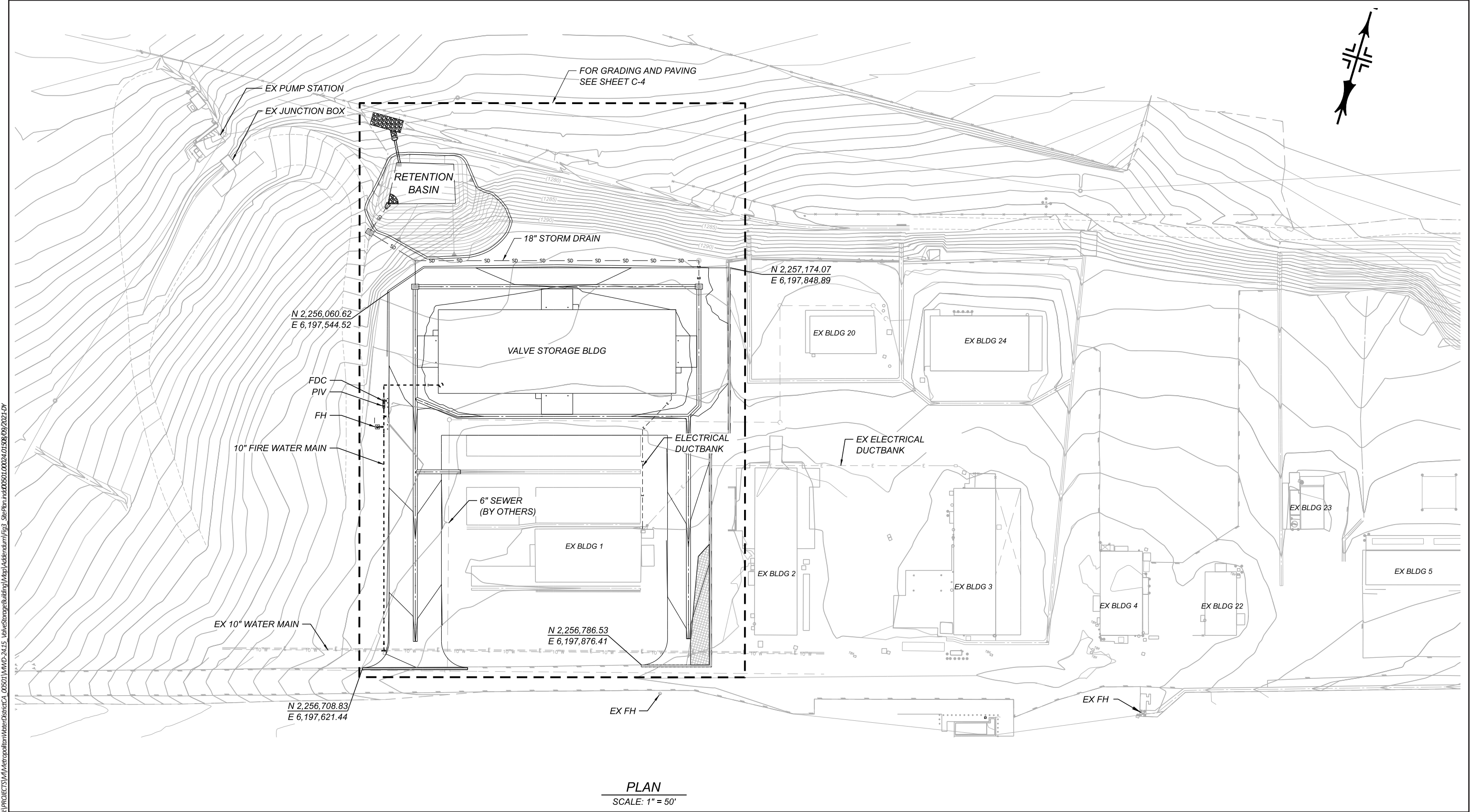
Project Description

Building and Site Design

The proposed project would construct a new valve storage building, and associated improvements, within an existing complex of buildings in the northern portion of Metropolitan’s Lake Mathews facility; see Figure 3, *Site Plan*. The building site is proposed to be graded and paved with concrete slab-on-grade foundation and asphalt concrete; see Figure 4, *Grading and Paving Plan*. The proposed project involves construction of a pre-engineered metal building approximately 18,200-square-feet in size, with insulated metal walls, structural steel frames and standing seam metal roof. Each side of the building would feature a motorized overhead coiling door and personnel door with concrete ramps for access. Building ventilation would be provided through a series of ventilators at the roof and ground level. The roof would include 8.5-inch-wide gutters with a series of downspouts directed into four-foot-wide concrete swales lined with welded wire fabric that are proposed on each side of the building for stormwater/runoff control. The swales would extend south of the building alongside the existing Building 1 to the existing paved access road. The remaining areas surrounding the building would be paved with asphalt concrete.







Source: Metropolitan Water District, 2021



HELIX
Environmental Planning

Figure 4
126

Stormwater runoff would be diverted away from the building and access road to a proposed water retention basin in the northwestern corner of the site via the proposed swales and inlet drains. The approximately 2,400-square-foot water retention basin would be unlined and feature six-inch perforated subdrains to facilitate infiltration.

Utility Improvements

Utility connections would be installed to provide electrical power and water for fire services to the project site. Adequate capacity exists within the current utility systems within the Lake Mathews facility to serve the proposed project. The building would not require additional domestic water or sewer services.

Electrical

Electrical connections for the building would be sourced by the existing Building 1, located immediately south of the proposed storage building site. An underground electrical duct bank with 2-inch conduit would be routed from the existing building to a new electrical panel at the southeast corner of the building. Modifications are proposed to the existing underground conduit duct bank that runs from the existing Building 3 to Building 1. Existing electrical panels within the two existing buildings may be modified or replaced.

Water

To comply with Fire Department code, the proposed project would construct a new fire hydrant, 6-inch riser, and 10-inch diameter water line to support a fire suppression system. The 10-inch diameter water line for fire services is proposed from an existing line south of the project site to a fire sprinkler riser at the southwest corner of the building. No other water uses or waterline connections are proposed.

Site Access

Access to the site is provided at the existing entrance to the Lake Mathews Reservoir facility off El Sobrante Avenue and La Sierra Avenue; see Figure 5a, *Site Access and Contractor Staging*, and Figure 5b, *Site Access and Contractor Staging (Detail)*. An existing paved access road that connects from El Sobrante Avenue to the north and La Sierra Avenue to the west of the project site is located south of the project site adjacent to the existing Building 1. In order to provide access to the proposed building from this internal access road, an approximately 50-foot-wide area on the west side and 40-foot-wide area on the east side of Building 1 would be paved with asphalt concrete connecting the project site to the existing access road; see Figure 4.

Site Preparation and Grading

The building site currently comprises vacant, disturbed land that has been used for temporary materials storage. Prior to installation of the concrete foundation, the building site would be cleared and over-excavated approximately five to nine feet to the underlying granitic bedrock. Existing artificial fill, underlying soil, and imported fill material would be recompact to 95 percent relative compaction to support the building foundation. Earthwork for the proposed project would result in an estimated net fill of approximately 2,550 cubic yards (CY). Within the proposed water retention basin area, there is one ornamental pepper tree that would be removed prior to construction. The remaining vegetation outside the limits of grading would be protected in place. Grading to construct the approximately 2,400-square-foot water retention basin would occur within an approximately 9,800-square-foot limit of work. Up to nine feet of excavation below the existing ground level would be necessary to obtain the appropriate drainage.

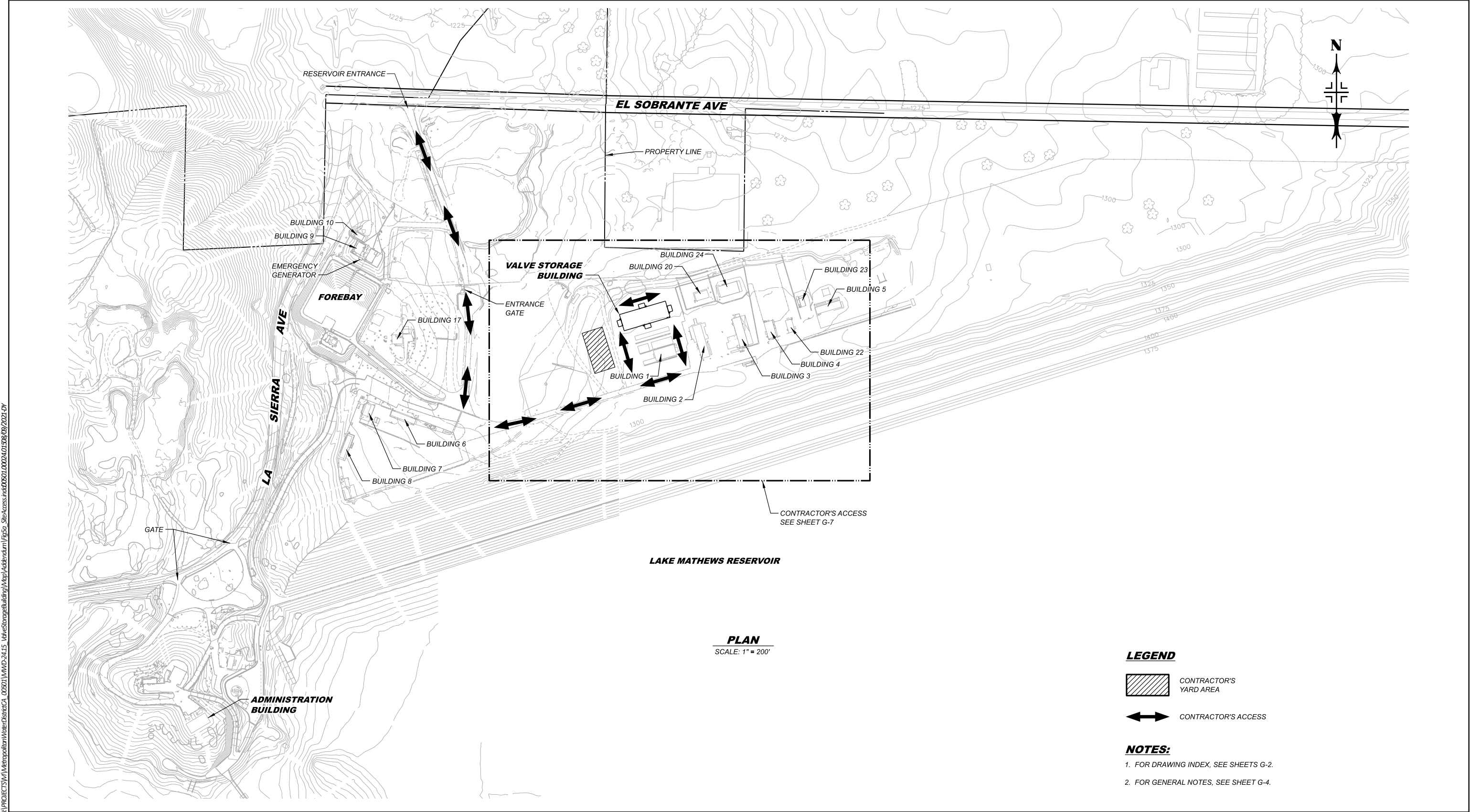
Construction Schedule, Staging, and Best Management Practices

Construction of the proposed project is anticipated to commence after April 2022 and be completed by January 2023 for an approximate duration of ten months. Construction activities would generally occur Monday through Friday from 7:00 a.m. to 7:00 p.m. When deemed necessary, construction would be occasionally allowed on Saturdays from 8:00 a.m. to 5:00 p.m. per the Riverside County Ordinances. Construction staging would be provided within an approximately 2,000-square-foot area west of the project site; see Figure 5. Staging areas used during project construction would be returned to their original condition upon completion of the proposed project.

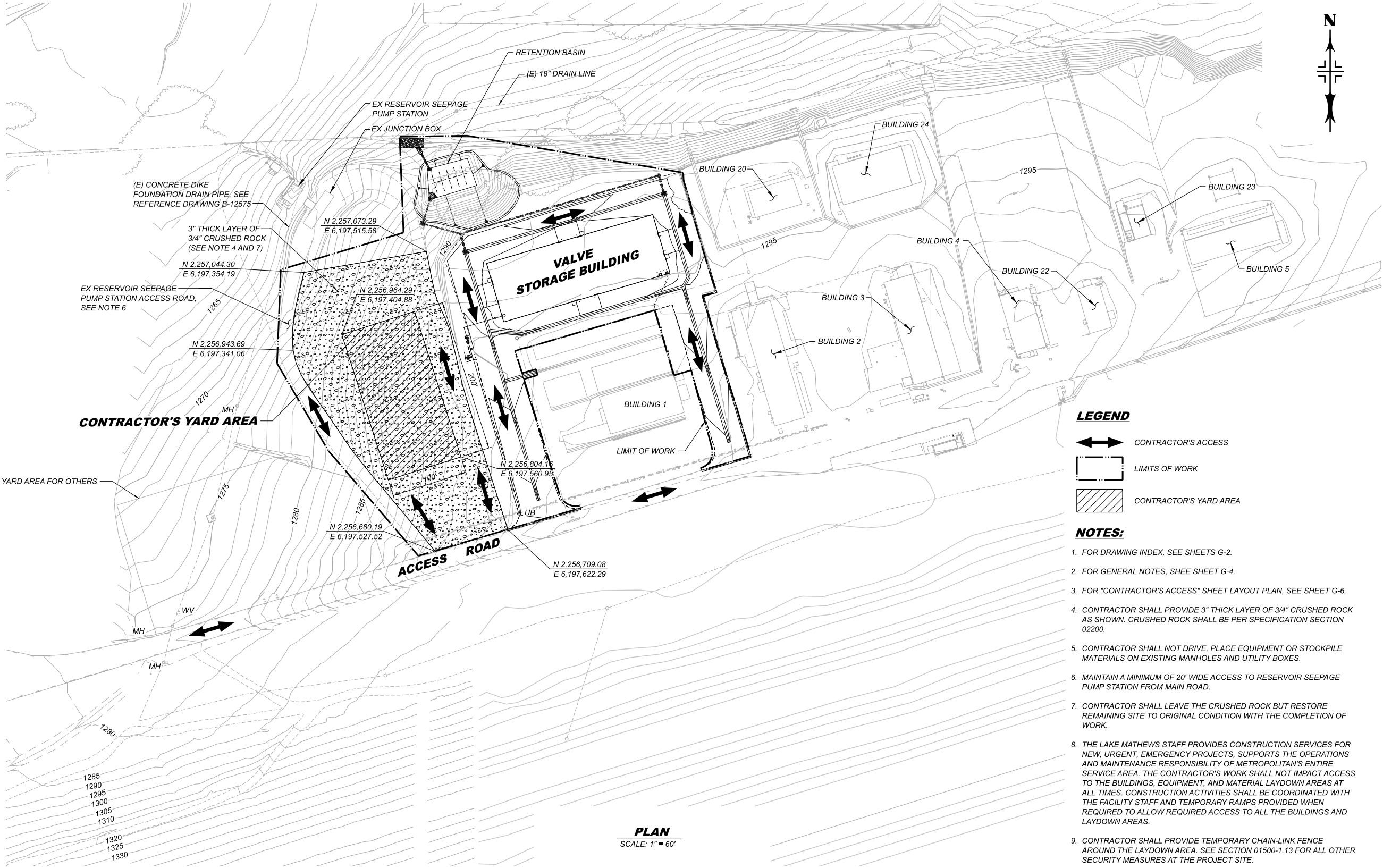
The proposed project would incorporate Best Management Practices (BMPs) during construction, including implementation of a Stormwater Pollution Prevention Plan (SWPPP) addressing sediment and erosion control, pollutant treatment, outlet protection, construction waste handling and disposal, and general site management. Sediment and erosion control BMPs may include, but not be limited to, check dams, fiber rolls, sandbags, and siltation fences. A Spill Emergency Response Plan would be prepared prior to the start of construction and be responsible for ensuring that hazardous materials and waste are handled, stored, and disposed of in accordance with applicable federal and state laws and regulations.

Organization of the Initial Study

This Initial Study uses a modified version of the checklist set forth in Appendix G of the State CEQA Guidelines, consistent with the checklist used to evaluate potential impacts in the PCCP PEIR. Based on the analysis that follows, it was determined that no new or more severe significant impacts than those identified in the PEIR would occur as a result of implementation of the proposed project.



Source: Metropolitan Water District, 2021



Source: Metropolitan Water District, 2021

Determination

On the basis of this initial evaluation and application of the State CEQA Guidelines (Section 15162, 15163, and 15164):

	<u>YES</u>	<u>NO</u>
1. Substantial changes are proposed in the project that will require major revisions of the PEIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or	_____	<u>X</u>
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous PEIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or	_____	<u>X</u>
3. New information of substantial importance to the project becomes available, and	_____	_____
a. The information was not known and could not have been known at the time the PEIR was certified as complete or was adopted, and	_____	<u>X</u>
b. The new information shows any of the following:	_____	_____
i. The project will have one or more significant effects not discussed previously in the PEIR;	_____	<u>X</u>
ii. Significant effects previously examined will be substantially more severe than shown in the PEIR;	_____	<u>X</u>
iii. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project; or	_____	<u>X</u>
iv. Mitigation measures or alternatives that were not previously considered in the PEIR would substantially lessen one or more significant effects on the environment.	_____	<u>X</u>

Findings:

1. The project has effects that were not examined in the EIR; therefore, an Initial Study needs to be prepared leading to either an EIR or a Negative Declaration.	_____	<u>X</u>
2. The agency finds that pursuant to Section 15162, no new effects will occur and no new mitigation measures will be required. The agency can approve the project as being within the scope of the project covered by the PEIR, and no new environmental document is required.	<u>X</u>	_____

Signature Jennifer Harriger

Jennifer Harriger
Printed Name

10-26-2021
Date

Unit Manager, Environmental Planning Section
Title

CHECKLIST

I. AESTHETICS

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR noted that while there are some scenic resources present in the program area, impacts to these resources would be less than significant for the following reasons: (1) aesthetic impacts during construction would be temporary; (2) work areas would be restored to pre-construction conditions once construction is completed; and (3) visible, aboveground components of proposed PCCP Program facilities would be minimal (e.g., air release/vacuum valves). No mitigation was proposed.

Public views in the proximity of the project site are available from surrounding roadways, including El Sobrante Road and La Sierra Avenue. Scenic vistas of distant ridgelines are afforded from portions of these roadways. The proposed building would not obstruct such vistas due to the presence of intervening topography, vegetation, and existing structures, and because the project site is generally set at a lower elevation than the surrounding roadways. Further, the proposed building would be located among existing building of similar heights and would not represent a new impediment to scenic vistas where none currently exist. Therefore, impacts related to substantial adverse effects on a scenic vista would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
b. Substantially damage scenic resources, including but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR determined that impacts related to damaging scenic resources within a state scenic highway would be less than significant because construction-related aesthetic effects would be temporary, disturbed areas would be restored, and permanent visible changes would be minimal. No mitigation was proposed.

There are no highways near the project site that have been designated or could be eligible as state scenic highways. Further, the proposed project would occur at a vacant and disturbed site within the existing Metropolitan facility at Lake Mathews and would not damage scenic resources such as trees, rock outcroppings, or historic buildings. As such, no impacts would occur.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As described in the PCCP PEIR, multiple excavation areas would be used for program rehabilitation activities, which would have the potential to contribute to the degradation of the existing visual character and quality of the project site and the immediate surroundings through the introduction of vehicles, equipment, stockpiled material, and other elements. Due to the short-term nature of construction activities and use of staging areas, however, the impact of the program was determined to be less than significant. Also, as described in the PEIR, permanent visible changes after construction are expected to result in minimal impacts because only aboveground components such as the relocation of air release/vacuum valves would be visible. The PCCP PEIR concluded that impacts to visual character or quality related to aboveground structures would be less than significant due to the small footprints of the aboveground structures and because the aboveground structures would likely be placed intermittently and not grouped together. In addition, the aboveground structures would be located in developed areas, where such structures already commonly exist; these areas would generally not be sensitive to the introduction of such structures. No mitigation was proposed.

Consistent with the PCCP Program, construction of the proposed project would involve the temporary presence of vehicles, equipment, stockpiled material, and other construction-related elements. However, unlike what was analyzed in the PCCP EIR, which considered the presence of such components in areas where none were present in the existing condition, including in residential neighborhoods, the proposed project's construction components would be located within the existing Metropolitan facility at Lake Mathews, where vehicles, equipment, and other pipeline infrastructure-related items are currently present. Similarly, the permanent building would be located among existing buildings of similar bulk and style within Metropolitan's facility and would not represent a substantial change from existing conditions as related to visual character. Therefore, impacts would be less than significant.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified the possible use of lighting in contractor's work areas and staging areas for safety and security purposes. The PCCP PEIR evaluated the potential for that lighting to spill over into adjacent light-sensitive areas, especially residential land uses, which could result in significant construction-related impacts. Permanent lighting was not included as part of the program; therefore, the PCCP PEIR identified no operational impacts related to light and glare. Mitigation was identified in the PEIR to reduce potential impacts during construction, as summarized below:

- **MM AES-1** requires that all safety and security lighting at contractor's work areas and staging areas be directed downward and shielded to avoid light spilling over into residential areas, thereby reducing impacts to a less than significant level.

Project construction would generally occur Monday through Friday from 7:00 a.m. to 7:00 p.m. Depending on the time of year, lighting may be required in the evenings. Implementation of **MM AES-1** would reduce potential construction period lighting spillover to off-site properties. The proposed building would include permanent exterior lighting that would be similar to the lighting at the existing on-site buildings and would not represent a new source of light at the site. In addition, although lighting at the proposed building may be visible from residences located approximately 1,000 feet to the north of the site, intervening topography, vegetation, and existing structures would block views of the new building from the majority of the residences and the lighting would not result in a substantial change from the existing visual environment within the Metropolitan facility at Lake Mathews. The proposed project would not involve components that would result in a new source of glare. Lighting and glare impacts would therefore be less than significant.

The severity of the impact would be the same as that identified in the PCCP PEIR.

II. AGRICULTURE AND FORESTRY RESOURCES

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Convert prime farmland, unique farmland, or farmland of statewide importance (important farmland) to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR noted that although there are designated agricultural lands within the study area for the PCCP program, the program would not permanently convert farmland to non-agricultural use as the program would rehabilitate existing pipelines, usually located in existing roadway rights-of-way. During construction, agricultural lands may be temporarily used to access pipelines or for construction staging; however, disturbed lands would be restored to pre-existing conditions. Impacts associated with conversion of important farmland would be less than significant and no mitigation was proposed.

The proposed project would occur within vacant and disturbed land at an existing Metropolitan facility that is not used or designated for agricultural use. Therefore, the proposed project would not convert important farmland to a non-agricultural use, and no impacts would occur.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
e. Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of farmland to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, the program would rehabilitate existing pipelines, usually located in existing roadway rights-of-way. Even where the pipelines cross agricultural lands, they are existing underground facilities that would not result in a permanent land use change. If agricultural lands are affected during construction from access or staging, the land would be restored to pre-existing conditions. Therefore, there would be no changes to the existing environment that could lead to permanent conversion of farmland to non-agricultural use and impacts would be less than significant. No mitigation was proposed.

The proposed project would occur within vacant and disturbed land at an existing Metropolitan facility that is not used or designated for agricultural use. Therefore, the proposed project would not convert farmland to a non-agricultural use, and no impacts would occur.

The severity of the impact would be less than that identified in the PEIR.

III. AIR QUALITY

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, the criteria used to identify consistency with the South Coast Air Quality Management District (SCAQMD) 2012 Air Quality Management Plan (AQMP) included whether there would be air quality violations or delays in attainment or whether there would be exceedances of the assumptions included in the AQMP. Regarding the consistency of the PCCP Program with the assumptions included in the AQMP, programmatic impacts were determined to be less than significant because no permanent land use changes would occur as a result of program implementation. With respect to the potential for air quality violation or delays in attainment, the PCCP Program was determined to result in significant impacts as a result of construction-period emissions exceeding SCAQMD regional mass emissions thresholds. Mitigation was identified in the PEIR to reduce potential impacts, as summarized below:

- **MM AIR-1** requires controls on emissions from construction equipment through the use of best available control technology devices.

While construction-period emissions would be reduced with implementation of **MM AIR-1**, impacts were determined to remain significant and unavoidable.

The PEIR assumed concurrent construction activities for 10 excavation sites, 3 aboveground relocations of air release/vacuum valves, 2 new valve/vault/blow-off structures, and a 1,000-foot-long segment of pipe in a new alignment. Unlike what was analyzed in the PEIR, the proposed project would involve sequential, rather than concurrent, construction activities for a singular site and would involve an overall less intensive construction scenario. Sequential construction activities for the proposed project are anticipated to include contractor mobilization, grading, slab construction and paving, and vertical structure construction. Since the proposed project's construction scenario is different from what was analyzed in the PEIR, project-specific assumptions have been compiled per coordination with Metropolitan to estimate the proposed project's air pollutant emissions. Details regarding assumptions are provided in Appendix A to this Addendum.

Table 1 shows the estimated daily regional mass emissions for project construction without implementation of **MM AIR-1**. As shown therein, no regional SCAQMD threshold would be exceeded during construction of the proposed project. Nevertheless, **MM AIR-1** would be implemented to reduce project emissions, since they contribute to the overall program air quality emissions that were found to be significant.

Table 1. Unmitigated Daily Regional Mass Construction Emissions (pounds per day)

Construction Activity	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Contractor Mobilization	<0.5	3	4	0.0	<0.5	<0.5
Grading	2	19	13	0.0	4	2
Slab Construction and Paving	1	6	7	0.0	1	<0.5
Vertical Structure Construction	1	6	5	0.0	1	<0.5
Maximum Daily Emissions	2	19	13	0.0	4	2
<i>Regional Mass Emissions Threshold</i>	<i>75</i>	<i>100</i>	<i>550</i>	<i>150</i>	<i>150</i>	<i>55</i>
<i>Project Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: Calculations by HELIX (see Appendix A).

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

Following construction, the proposed project would generate emissions from the following sources: (1) initial delivery of 11 valves to the project site from the Port of Long Beach; (2) operation of a forklift at the project site for the unloading of the valves during the initial valve deliveries; (3) vehicle trips for an inspector to come to the site following the initial valve deliveries; (4) occasional delivery of valves to program construction sites along the Second Lower Feeder and Sepulveda Feeder; and (5) operation of a forklift at the project site for the loading of the valves before they are delivered to the individual construction sites. Refer to Appendix A for additional details regarding the operation assumptions.

Table 2 shows the estimated daily regional mass emissions for project operations without implementation of **MM AIR-1**. As shown therein, no regional SCAQMD threshold would be exceeded for the proposed project's operations.

Table 2. Unmitigated Daily Regional Mass Operational Emissions (pounds per day)

Operational Activity	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Initial Valve Deliveries	<0.5	4	2	0.0	1	<0.5
Valve Deliveries to Construction Sites	<0.5	1	1	0.0	<0.5	<0.5
Total Operational Emissions	<0.5	5	3	0.0	1	<0.5
<i>Regional Mass Emissions Threshold</i>	<i>75</i>	<i>100</i>	<i>550</i>	<i>150</i>	<i>150</i>	<i>55</i>
<i>Project Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: Calculations by HELIX (see Appendix A).

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

Subsequent to the certification of the PEIR, the Board of the SCAQMD approved the 2016 AQMP, which identifies stationary and mobile source strategies to ensure that federal Clean Air Act deadlines for attainment of the National Ambient Air Quality Standards are met. The proposed project, similar to what was discussed for the program, would not involve substantial changes to land uses such that the assumptions used in the development of the 2016 AQMP would be exceeded. The proposed project would occur within an existing Metropolitan facility adjacent to similar uses. Further, the proposed project would function to store valves and would result in minimal operational emissions. Thus, no conflict with the AQMP would occur.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, concurrent regional mass emissions for the full construction scenario (as described above) would result in emissions that exceed the SCAQMD thresholds for volatile organic compounds (VOCs), nitrogen oxides (NO_x), and carbon monoxide (CO). After the implementation of **MM AIR-1**, thresholds would still be exceeded for NO_x and CO. Thus, regional emissions impacts from the PCCP Program were determined to be significant and unavoidable. The PEIR determined that localized emissions during program rehabilitation efforts would exceed the SCAQMD localized significance thresholds for NO_x, but implementation of **MM AIR-1** would reduce the impact to a less-than-significant level.

As discussed in Item III.a, the proposed project would not result in regional mass emissions that would exceed SCAQMD thresholds. Thus, impacts would be less than significant. Localized emissions would be no greater than identified in the PEIR, as discussed in Item III.d, below, and would be less than significant. Furthermore, because the proposed project's construction would not occur within roadways and would result in a relatively low number of construction vehicles on low-volume roadways, no CO or particulate matter hotspots would result from increased congestion.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. Refer to the discussion in Items III.a and III.b. The South Coast Air Basin is in non-attainment for ozone, PM₁₀, and PM_{2.5} standards. However, because emissions from the proposed project would not exceed the SCAQMD regional mass emissions thresholds, impacts would be less than significant.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As identified in the PEIR, program rehabilitation activities were determined to have a significant impact on sensitive receptors located in proximity to excavation sites. Such impacts were determined to be reduced with the implementation of **MM AIR-1**, but were found to be significant and unavoidable.

The proposed project site is approximately 1,000 feet (305 meters) from the closest sensitive receptors, which are single-family residences located north of El Sobrante Road. Because this distance is much greater than the distance to sensitive receptors analyzed in the PEIR (25 meters) and because the proposed project's construction scenario would be less intensive than that analyzed in the PEIR, the proposed project's emissions at sensitive receptors would be less than what was analyzed in the PEIR. Localized on-site emissions that would be generated as a result of the proposed project's construction and operations are included in Tables 3 and 4, respectively. As shown therein, no exceedance of SCAQMD Localized Significance Thresholds (LSTs) would occur.

The severity of the impact would be less than that identified in the PEIR.

Table 3. Unmitigated Daily Localized Construction Emissions (pounds per day)

Construction Activity	NO _x	CO	PM ₁₀	PM _{2.5}
Contractor Mobilization	3	3	<0.5	<0.5
Grading	19	13	4	2
Slab Construction and Paving	6	7	<0.5	<0.5
Vertical Structure Construction	6	5	<0.5	<0.5
Maximum Daily Localized Emissions	19	13	4	2
<i>Localized Significance Threshold¹</i>	<i>334</i>	<i>4,352</i>	<i>73</i>	<i>22</i>
<i>Project Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: Calculations by HELIX (see Appendix A).

VOC = volatile organic compounds; CO = carbon monoxide; NO_x = nitrogen oxides;

SO_x = sulfur oxides; PM₁₀ = particulate matter 10 microns or less in diameter;

PM_{2.5} = particulate matter 2.5 microns or less in diameter

¹ Based on Source Receptor Area No. 22 (Norco/Corona), a site area of 1 acre, and a distance of 200 meters.

Table 4. Unmitigated Daily Localized Operational Emissions (pounds per day)

Construction Activity	NO _x	CO	PM ₁₀	PM _{2.5}
Initial Valve Deliveries	1	2	<0.5	<0.5
Valve Deliveries to Construction Sites	<0.5	<0.5	<0.5	<0.5
Total Localized Operational Emissions	1	2	<0.5	<0.5
<i>Localized Significance Threshold¹</i>	<i>334</i>	<i>4,352</i>	<i>18</i>	<i>6</i>
<i>Project Exceeds Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: Calculations by HELIX (see Appendix A).

VOC = volatile organic compounds; CO = carbon monoxide; NO_x = nitrogen oxides;

SO_x = sulfur oxides; PM₁₀ = particulate matter 10 microns or less in diameter;

PM_{2.5} = particulate matter 2.5 microns or less in diameter

¹ Based on Source Receptor Area No. 22 (Norco/Corona), a site area of 1 acre, and a distance of 200 meters.

IV. BIOLOGICAL RESOURCES

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified impacts to special-status species as potentially significant at the programmatic level. Special-status species have the potential to occur in certain locations within the study areas for most of the program pipelines. Mitigation measures were identified in the PEIR to reduce potential impacts to special-status species resulting from PCCP Program activities, as summarized below:

- **MM BIO-1** requires a pre-construction survey by a qualified biologist for project sites where vegetation removal or ground disturbance would occur in areas that contain special-status species; and
- **MM BIO-2** requires a qualified biologist to determine the presence of nesting bird species in areas where vegetation removal would occur during the nesting season. If a nest is found, the biologist shall determine site-specific measures necessary to avoid disturbing the nest until nesting activity has ceased.

While these measures would reduce the potential for significant impacts to candidate, sensitive, or special-status species resulting from PCCP Program activities, the PEIR determined that impacts may remain significant. The PCCP PEIR concluded that further project-specific analysis and documentation would be necessary to determine if impacts could be reduced to a less-than-significant level.

The proposed project site is located within the existing Metropolitan facility at Lake Mathews and is characterized by vacant and disturbed land. A portion of the Lake Mathews – Estelle Mountain Reserve is located approximately 0.5-mile northwest of the project site; no Reserve areas would be directly or indirectly affected by the proposed project. The majority of the project site does not support vegetation and is not suitable for special-status plant or animal species. The northwest corner of the site where a water retention basin is proposed has a large pepper tree that would be removed during construction. Although unlikely given the adjacent disturbed areas of the Lake Mathews facility, this area has the potential to support special-status species within existing vegetated areas. As such, **MM BIO-1** would be implemented to ensure that potential impacts to special-status species would be less than significant.

The proposed project would require removal of one tree in the northwestern corner of the project site. This vegetation has the potential to provide foraging or nesting habitat for special-status bird species or birds protected under the federal Migratory Bird Treaty Act. Therefore, if tree removal would occur during the nesting season for sensitive species protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3513, **MM BIO-2** would be implemented to reduce potential impacts to foraging/nesting birds to a less-than-significant level.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified impacts to riparian habitat and other sensitive natural communities as potentially significant at the programmatic level. While riparian habitats and other sensitive natural communities are limited in the study area for the program, certain areas do contain such habitats, and there is potential for isolated areas of riparian habitat to occur along the pipelines. Mitigation measures were identified in the PCCP PEIR to reduce potential impacts to riparian habitat and other sensitive natural communities resulting from PCCP Program activities, as summarized below:

- **MM BIO-3** requires a pre-construction survey by a qualified biologist for project sites where vegetation removal and/or ground disturbance would occur in areas that contain riparian habitat; and
- **MM BIO-4** requires adherence to adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs), or a pre-construction survey by a qualified biologist for areas or activities not covered by an adopted HCP/NCCP, where vegetation removal and/or ground disturbance would occur in areas that contain sensitive natural communities.

The PCCP PEIR concluded that further project-specific analysis and documentation would be necessary to determine if impacts could be reduced to a less-than-significant level.

As discussed above, the project site is located within the existing Metropolitan facility at Lake Mathews and is characterized by disturbed land. It does not contain riparian habitat or other sensitive natural communities. The closest area designated as Core Reserve is located within the Lake Mathews – Estelle Mountain Reserve approximately 0.5-mile northwest of the project site. The proposed project would therefore have no impact on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, and **MM BIO-3** and **MM BIO-4** would not be applicable to the proposed project.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal areas, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified impacts to wetlands as potentially significant at the programmatic level. Although wetlands are limited in the program study area, they are present in certain areas and have the potential to be

affected by program rehabilitation activities. Mitigation was identified in the PEIR to reduce potential impacts to wetlands resulting from PCCP Program activities, as summarized below:

- **MM BIO-5** requires a pre-construction survey by a qualified biologist for project sites where vegetation removal or ground disturbance would occur in areas that contain wetland.

The PCCP PEIR concluded that further project-specific analysis and documentation would be necessary to determine if impacts could be reduced to a less-than-significant level.

As discussed above, the project site is located within the existing Metropolitan facility at Lake Mathews and is characterized by disturbed land. It does contain wetlands or other potentially jurisdictional features. The proposed project would therefore have no impact on wetlands. **MM BIO-5** is not applicable to the proposed project.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified impacts to wildlife movement as potentially significant at the programmatic level. Wildlife movement corridors and wildlife dispersal routes have the potential to occur in certain locations within the study areas for most of the program pipelines. The movement corridors and dispersal routes could be affected during rehabilitation activities. Mitigation was identified in the PEIR to reduce potential impacts to wetlands resulting from PCCP Program activities, as summarized below:

- **MM BIO-6** requires a pre-construction survey by a qualified biologist to determine if wildlife corridors are present for project sites where vegetation removal or ground disturbance of unpaved areas would occur.

The PCCP PEIR concluded that further project-specific analysis and documentation would be necessary to determine if impacts could be reduced to a less-than-significant level.

As discussed above, the project site is located within an existing Metropolitan facility and is surrounded by existing development and structures. While the building site is unpaved, it is highly disturbed and compacted and does not contain vegetation nor is it suitable for vegetation. The site does not have potential to serve as a wildlife movement corridor or dispersal route. The proposed project would therefore have no impact on a wildlife movement corridor or dispersal route. **MM BIO-6** is not required for the proposed project.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PEIR notes that PCCP Program pipelines cross counties and cities that have tree preservation policies or ordinances in place. The PCCP Program would involve the removal of some trees and vegetation during construction activities, and restoration of project sites to pre-construction conditions may not be consistent with existing tree preservation policies or ordinances; therefore, the PCCP PEIR determined that related impacts would be potentially significant. Mitigation was identified to reduce potential impacts related to conflicts with tree preservation policies, as summarized below:

- **MM BIO-7** requires Metropolitan to coordinate with affected jurisdictions to determine appropriate requirements for PCCP Program projects that would require vegetation removal.

The proposed project would require removal of one ornamental pepper tree for the construction of the proposed water retention basin; however, the proposed project would not conflict with tree preservation policies of the applicable jurisdiction, which is the County of Riverside. **MM BIO-7** would not be required for the proposed project.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PEIR, portions of the existing Allen-McColloch Pipeline and Second Lower Feeder are within the covered area for the Shell E&P and Metropolitan HCP. Metropolitan is a participant in this HCP. Portions of the Allen-McColloch Pipeline are in the Central and Coastal NCCP/HCP. Metropolitan is a participant in this NCCP/HCP. Portions of the Rialto Pipeline are within the proposed North Fontana Multiple Species Habitat Conservation Plan (MSHCP), and within the lands addressed by the North Fontana Interim MSHCP Policy. Metropolitan is not a participant in that proposed MSHCP. PCCP Program rehabilitation activities have the potential to conflict with policies included in these plans or other plan areas within which rehabilitation activities may occur. Because the exact activities that would occur in covered lands were unknown, the PEIR determined that the level of impact and associated mitigation could not be determined; impacts would be potentially significant and unavoidable. No feasible mitigation was identified at the program level.

The project site is within the boundaries of the Western Riverside MSHCP and is mapped as "Public Quasi-Public Conserved Lands" and is not located within a mapped Criteria Cell. The proposed project would occur within an existing Metropolitan facility on a disturbed site that is adjacent to existing development. The Lake Mathews Facility where the project is proposed is not subject to the Western Riverside County MSHCP or other conservation plans. Therefore, the proposed project would not result in conflicts with the provisions of an adopted habitat

conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The severity of the impact would be less than that identified in the PEIR.

V. CULTURAL RESOURCES

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR noted that ground-borne vibration from excavation and concrete cutting could potentially affect the nearby built environment and impacts to historical resources in the vicinity of program-related work could be potentially significant. Mitigation was identified to reduce potential impacts to historical resources, as summarized below:

- **MM CUL-1** requires a qualified cultural resource specialist to determine the presence of identified or eligible historical resources and to provide measures to prevent impacts to those resources as appropriate.

The project site consists of a vacant and disturbed site within the Metropolitan facility at Lake Mathews. There are no built resources present at the site that could be considered historical and/or impacted by the proposed project. Proposed activities would not result in a substantial adverse change in the significance of this resource. No mitigation would be required.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR discussed how sediments in proximity to pipelines have been previously disturbed and determined that the possibility of encountering intact archaeological resources during PCCP Program activities would be low. The possibility that unknown archaeological resources may be encountered still exists, however, and the PEIR stated that impacts would be potentially significant. Mitigation measures from the PEIR would reduce programmatic impacts to a less-than-significant level, as summarized below:

- **MM CUL-2** requires a pre-construction, site-specific records search to identify if additional sites or resources have been recorded on or adjacent to the proposed project site. If the proposed project site is found to be within the recorded area of a significant or potentially significant site, then archaeological and/or Native American monitoring during ground-disturbing activities is required.
- **MM CUL-3** requires a pre-construction meeting to inform construction personnel how to identify cultural resources during ground-disturbing activities and what to do if such potential resources are found.
- **MM CUL-4** establishes a protocol in the event that potentially significant cultural resources are unexpectedly encountered during construction.
- **MM CUL-5** requires a professional archaeologist to perform a pedestrian survey of areas where ground-disturbing activities are proposed. If archaeological resources are recorded

or are discovered during the survey and avoidance is not feasible, then site testing and evaluation by a professional archaeologist is required.

The proposed project would involve grading and over-excavation to depths of up to eight feet. The site is disturbed and located within an existing Metropolitan facility adjacent to existing structures; based on previous disturbance at the project site, no resources are expected to be present and **MM CUL-5** is not required. The site is underlain by five feet of artificial fill, which has no potential to contain archaeological resources (GeoPentech 2018). There is a possibility that excavation to depths up to eight feet could encounter previously unidentified cultural resources; therefore, **MM CUL-3** and **MM CUL-4** would be implemented. With implementation of these mitigation measures, the proposed project is not anticipated to result in a substantial adverse change in the significance of an archaeological resource.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR notes that the program has the potential to affect paleontological resources within the pipeline alignments or in staging areas during rehabilitation activities. Paleontological resources could be inadvertently unearthed during ground-disturbing activities. The PEIR analysis concluded that it would be unlikely that paleontological resources would be discovered in areas with sediments previously disturbed by original pipeline construction; however, the possibility of encountering such resources still remains and the following mitigation measure was identified:

- **MM CUL-6** requires the development and implementation of a site-specific mitigation program to address potential impacts to paleontological resources.

Implementation of **MM CUL-6** would reduce potential impacts resulting from the PCCP Program to a less-than-significant level.

As discussed above, the proposed project would involve grading and over-excavation to depths of up to eight feet. The site is underlain by five feet of artificial fill and early Pleistocene-age very old alluvial fan deposits at depths of five to nine feet (GeoPentech 2018). Artificial fill has no paleontological sensitivity. Early Pleistocene very old alluvial fan deposits have high paleontological sensitivity and have the potential to contain intact paleontological resources, because similar deposits have yielded significant vertebrate fossils in Riverside County. Although the site is mapped as having low potential for paleontological resources (Riverside County Information Technology 2021), based on the proposed over-excavation to eight feet, there is a potential to encounter paleontological resources within the underlying very old alluvial deposits. As such, **MM CUL-6** would be implemented to reduce potential impacts to paleontological resources to a less-than-significant level.

The severity of the impact would be the same as that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

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

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Impact Less than or Equal to Impact Identified in the PEIR. The PEIR identified the potential for PCCP Program activities to disturb human remains within the pipeline alignments or in staging areas during excavation or grading and determined that this could result in a significant impact if damage to or destruction of human remains occurred. Compliance with California State Law in Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the PRC would, however, reduce potential programmatic impacts related to disturbance of human remains to a less-than-significant level. No mitigation was proposed.

Although not anticipated, activities associated with the proposed project could also disturb human remains, which would result in a significant impact. Consistent with analysis in the PEIR, however, compliance with California State Law in Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the PRC would make this potential impact of the proposed project less than significant. No mitigation would be required.

The severity of the impact would be the same as that identified in the PEIR.

VI. GEOLOGY AND SOILS

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Expose people or structures to 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 checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR discussed that the PCCP Program is located within a seismically active area. All of the feeders, with the exception of the Calabasas Feeder, cross at least one Alquist-Priolo Earthquake Fault Zone. The PEIR determined that the PCCP Program would nonetheless have less-than-significant impacts related to fault rupture for the following reasons: (1) the PCCP Program would not include the construction of structures intended for human occupancy; (2) the PCCP Program would not draw a significant amount of people to the area; (3) the probability of a seismic event coinciding with construction is very low; and (4) Metropolitan would require contractors to comply with the requirements of the California Building Code and the California Division of Occupational Safety and Health. The PEIR also stated that hazards related to fault rupture are considered to pose an acceptable level of risk for construction and operation of a water conveyance system. No mitigation was proposed.

The proposed project is not located within an Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2015). The closest Alquist-Priolo Earthquake Fault Zone, the Elsinore Fault Zone, is located approximately 5.5 miles southwest of the project site. At this distance, fault rupture would not occur at the project site. Further, similar to what was discussed in the PEIR, impacts related to fault rupture would be less than significant, because the proposed project does not propose structures intended for human occupancy and the structures would be designed, constructed, and operated in compliance with all applicable requirements related to structural design and safety. No mitigation would be required.

The severity of the impact would be less than that identified in the PEIR.

	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR discussed that all five feeders would be potentially subject to strong seismic shaking as a result of earthquakes on nearby or more distant faults, but determined that impacts related to seismic shaking would be less than significant for the same reasons as summarized above for Item VI.a.i. No mitigation was proposed.

The proposed project would be potentially subject to strong seismic shaking as a result of earthquakes on nearby or more distant faults. Impacts of the proposed project would be of the

same severity as those analyzed in the PCCP PEIR, as the project does not propose structures intended for human occupancy and would be designed, constructed, and operated in compliance with all applicable requirements related to structural design and safety. No mitigation would be required.

The severity of the impact would be the same as that identified in the PEIR.

	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
iii. Seismically related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR noted that the PCCP program is in Southern California, which is a seismically active area, and susceptible to liquefaction during seismic events in some areas. This has the potential to result in settlement and lateral spreading that could damage the pipelines and result in impacts. Analysis included in the PEIR determined, however, that impacts related to liquefaction would be less than significant for the same reasons as summarized above for Item VI.a.i. No mitigation was proposed.

Liquefaction potential is greatest where the groundwater level is shallow, and submerged, loose, fine sands occur within a depth of about 50 feet or less below the ground surface. Shallow groundwater is not present at the project site and the site is underlain by compacted artificial fill, alluvial sediments, and granite bedrock. Liquefaction potential at the site is therefore considered low (GeoPentech 2018). Additionally, the proposed project would not include the construction of structures intended for human occupancy and would comply with applicable structural design requirements. Therefore, the proposed project is at a lower risk for liquefaction than what was analyzed in the PEIR. No mitigation would be required.

The severity of the impact would be less than that identified in the PEIR.

	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
iv. Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PEIR, some portions of the PCCP program study area are in hilly areas that are susceptible to earthquake-induced landslides that could damage the pipelines and result in impacts. Programmatic impacts were determined to be less than significant for the reasons summarized above for Item VI.a.i. No mitigation was proposed.

The potential for landslides is highest in areas of moderate to steep terrain. The proposed project site and immediately surrounding areas are of flat topography with low potential for earthquake-induced landslides. No impacts related to landslides are anticipated and no mitigation would be required.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

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

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Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified the potential for soil erosion or the loss of topsoil to occur as a result of trenching during pipeline rehabilitation. In addition, the movement and temporary stockpiling of excavated soil could result in short-term erosion and sedimentation if improperly handled and stored. The PEIR identified environmental commitments Metropolitan would fulfill as part of the PCCP Program that would reduce potential impacts to a less-than-significant level. These commitments include:

- Compliance with SCAQMD Rule 403 to minimize fugitive dust, construction traffic, and particulate matter releases; and
- Implementation of water quality BMPs, including a SWPPP, as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management.

Construction of the proposed project, specifically the grading phase, would involve similar potential for erosion and sedimentation as was analyzed in the PEIR. To minimize the potential for erosion and sedimentation during construction, the proposed project would employ the same environmental commitments identified within the PEIR.

The severity of the impact would be the same as that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

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Impact Less than or Equal to Impact Identified in the PEIR. The PEIR determined that some areas of the PCCP program could be located on a geologic unit or soils that have been identified as potentially unstable, which could expose the feeders and workers to impacts related to landslide, lateral spreading, subsidence, liquefaction, or collapse. However, for reasons summarized above for Item VI.a.i, programmatic impacts were considered to be less than significant.

No additional geology or soils hazards are anticipated beyond the less-than-significant impacts identified for Items VI.a.i, VI.a.ii, VI.a.iii and VI.a.iv, which discuss impacts related to fault rupture, ground-shaking, earthquake-related landslides, and liquefaction hazards, respectively. Further, the proposed project would involve over-excavation to create a stable foundation for the proposed structure. Impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

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Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR stated that while some areas of the PCCP Program may be underlain by expansive soils that could deform, resulting in damage to feeders and risking injury to workers, impacts would be less than significant for similar reasons summarized above for Item VI.a.i. No mitigation was proposed.

The proposed project would require over-excavation at the site to create a stable foundation for the valve storage building. Additionally, for the same reasons summarized above for Item VI.a.i, impacts related to expansive soil would be less than significant.

The severity of the impact would be less than that identified in the PEIR.

VII. GREENHOUSE GAS EMISSIONS

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, greenhouse gas (GHG) emissions would occur as a result of program rehabilitation activities, including the use of construction equipment, material delivery and hauling, and commute trips by workers. Because program emissions would exceed the SCAQMD interim threshold of 3,000 metric tons per year, impacts were determined to be significant. Although there would be small reductions in GHG emissions associated with implementation of **MM AIR-1**, programmatic impacts were determined to be significant and unavoidable.

Project GHG emissions were estimated using project-specific assumptions, as discussed above in Item VII.a. Consistent with SCAQMD's prescribed methodology and the PEIR analysis, construction GHG emissions were amortized over a 30-year period and added to operational emissions. Proposed project construction is calculated to result in 105 metric tons of carbon dioxide equivalent (CO₂e) for the duration of the construction period, which would be approximately 4 metric tons of CO₂e per year when amortized over 30 years. Project operations are calculated to result in a total of 8 metric tons of CO₂e for the valve deliveries, resulting in a total of 12 MT CO₂e (assuming all valve deliveries occur in the same year). Because the proposed project would not exceed the SCAQMD interim GHG emissions threshold, impacts would be less than significant, which is less than impacts identified in the PEIR. Nevertheless, **MM AIR-1** would be implemented to reduce project emissions, since they contribute to the overall program GHG emissions that were found to be significant.

The severity of the impact would be less than that which was identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
b. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, because Metropolitan has not adopted a qualified plan, policy, or regulation to reduce GHG emissions, the most applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions is Assembly Bill (AB) 32, which codified the state's GHG emissions-reduction targets for 2020. Although rehabilitation activities would result in GHG emissions, it was determined that program emissions would not conflict with GHG reduction goals outlined in the AB 32 Scoping Plan.

Additionally, the PEIR discussed two Executive Orders (EOs) related to the reduction of statewide GHG emissions. EO B-30-15 established an interim GHG reduction target of 40 percent below 1990 levels by 2030, and EO S-03-05 established a long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. Senate Bill (SB) 32, which codified the state's GHG emissions-reduction targets for 2030, was signed into law in September 2016. The PEIR pointed out that significant policy, technical, and economic solutions will be required in order to meet the goals of EO S-03-05 and B-30-15; however, these changes would require state and/or

federal action and would be outside of the control of Metropolitan. While long-term climate change policy and regulatory changes are currently unknown, the PEIR concluded that PCCP Program features would not conflict with the goals in EO S-03-05 and EO B-30-15, and related impacts would be less than significant.

The proposed project would result in GHG emissions, as described in Item VII.a. These activities would result in a net increase in GHG emissions compared to existing conditions at the vacant project site; however, the emissions would be temporary (construction) and minimal and would not conflict with the statewide GHG reduction targets identified in AB 32 and SB 32.

The severity of the impact would be the same as that identified in the PEIR.

VIII. HAZARDS AND HAZARDOUS MATERIALS

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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 checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As described in the PCCP PEIR, although solvents, paints, oils, grease, and fuels would be transported, used, and disposed of during the construction phase, these materials are not considered acutely hazardous such that impacts associated with their transport, use, and disposal would be considered significant. As described in the PEIR, Metropolitan's contractors would implement the following environmental commitments as part of the PCCP Program:

- Rehabilitation activities would incorporate BMPs, including preparation and implementation of a SWPPP, as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management; and
- A Spill Emergency Response Plan would be prepared prior to the start of construction to ensure that hazardous materials and waste are handled, stored, and disposed of in accordance with applicable federal and state laws and regulations. All materials and fuels within staging areas and excavation sites and work zones would be stored in a manner that reduces potential for spills.

With implementation of the above environmental commitments and required compliance with existing regulations, the PEIR concluded that impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant. No mitigation was proposed.

The proposed project would require transport, use, and disposal of hazardous materials such as solvents, paints, oils, grease, and fuels during construction. Compliance with applicable regulations and implementation of the environmental commitments of the PCCP Program summarized above would result in less-than-significant impacts related to the routine transport, use, or disposal of hazardous materials. Operationally, the proposed valve storage building would not require the routine transport, use, or disposal of hazardous materials. No mitigation would be required.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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 checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed above, the PCCP PEIR determined that the program would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The risk of upset and accidents involving the release of hazardous materials into the environment was therefore also determined to be less than significant for the PCCP Program.

For the proposed project, as described in Item VIII.a, construction activities would require transport, use, and disposal of typical construction-related hazardous materials, which has the potential to result in upset or accidents that could release hazardous materials into the environment; however, the contractor would be required to implement a Spill Emergency Response Plan that would minimize the potential for upset and accident conditions. Further, transport, use, and disposal of hazardous materials at the site must be conducted in compliance with applicable regulations. As such, impacts would be similar to those identified in the PEIR.

Operationally, the proposed valve storage building would not require the regular use of hazardous materials and would therefore not have potential for upset or accident conditions.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, construction-related hazardous releases that could occur within 0.25 mile of a school would be from commonly used materials such as fuels, solvents, and paints and would not include substances listed in 40 Code of Federal Regulations 355, Appendix A, *Extremely Hazardous Substances and Their Threshold Planning Quantities*. Accidental releases of commonly used hazardous materials would be localized and immediately contained and cleaned up. The PEIR determined that program impacts would be less than significant with the implementation of the following mitigation measures:

- **MM HAZ-1** requires the preparation of a project-level analysis of previously identified hazardous materials sites in the vicinity;
- **MM HAZ-2** establishes a protocol for the identification and management of previously unknown hazardous materials sites that may be encountered during construction activities;
- **MM HAZ-3** requires the construction contractor to implement BMPs to minimize human exposure to potential contaminants; and
- **MM HAZ-4** establishes a protocol for the handling of contaminated groundwater that could be encountered during construction.

There are no schools within 0.25 mile of the proposed project site. Further, although construction would involve the use of typical construction-related hazardous materials (as discussed above under Item VIII.a), the proposed project would operate in compliance with federal, state, and local regulations associated with transport, use, storage, and disposal of hazardous materials. In accordance with **MM HAZ-1**, a project-level analysis of previously identified hazardous materials sites in the vicinity has been conducted (see Item VIII.d, below). Additionally, **MM HAZ-2** through **MM HAZ-4** would be implemented for the proposed project, thereby reducing potential impacts to a less-than-significant level.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?



Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR identified the potential for rehabilitation activities to encounter hazardous materials sites identified in various environmental databases. Excavations into contaminated media at known or unknown sites could result in a significant hazard to the construction workers, the public, or the environment. Program impacts were determined to be potentially significant, but impacts would be mitigated to a less-than-significant level through the implementation of **MM HAZ-1** through **MM HAZ-4** of the PEIR, summarized in Item VIII.c, above.

In accordance with **MM-HAZ-1**, a review was conducted in September 2021 of state databases to identify sites for which a hazardous materials release or incident has occurred or sites that generate, store, treat, or dispose of hazardous materials. Specifically, this included the California Department of Toxic Substances Control (DTSC) EnviroStor database (DTSC 2021) and the State Water Resources Control Board (SWRCB) GeoTracker database (SWRCB 2021). No listings were identified within the project site or immediate vicinity in either database. The Envirostor database does not include listings at or within 0.25-mile of the project site. The GeoTracker database includes two listing approximately 1,100 feet and 1,200 feet west of the project site, within Metropolitan-owned property (SWRCB 2021). One site is a leaking underground storage tank (LUST) site associated with soil contaminated by motor/hydraulic/lubricating waste oil. The cleanup was completed and the case was closed as of April 1, 1997. The second site is a cleanup program site associated with the same soil contaminates as the LUST cleanup site. The cleanup was completed and the case was closed as of July 26, 2010. Although no known/active hazardous materials sites are located within the project site or vicinity, there is potential for construction crews to encounter previously unknown contaminated media during excavations, which could result in a significant impact. Implementation of **MM HAZ-2** through **MM HAZ-4** would reduce potential impacts to a less-than-significant level.

The severity of the impact would be the same as that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- e. For a project located within an airport land use plan or, where such plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?



Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, although the program pipelines are within two miles of several public airports, they are not within areas covered by airport land use compatibility plans (ALUCPs), except for the following: (1) Second Lower Feeder, which is within the notification area for the Joint Forces Training Base in Los Alamitos and crosses under a portion of Long Beach Municipal Airport within a runway protection zone; and (2) Sepulveda Feeder, which runs parallel and adjacent to the western side of the Van Nuys Airport and is within the northern and southern runway protection zones.

Notification areas are established to ensure that structures are not built near the airport that would adversely affect day-to-day operations. Since the PCCP Program only includes small aboveground structures, such as small valve enclosures, it was determined that the program would have no impact on airport operations at the Joint Forces Training Base in Los Alamitos. For the other identified airports, runway protection zones are intended to provide for the unobstructed passage of landing aircraft, and no structures or congregation of people are allowed in this zone. Aboveground rehabilitation activities or permanent aboveground elements of the PCCP Program within this zone would result in potentially significant impacts, and the following mitigation measures were identified in the PEIR:

- **MM HAZ-5** requires coordination with airport management, as appropriate, for rehabilitation activities occurring within runway protection zones and implementation of identified operation and safety requirements; and
- **MM HAZ-6** requires prior approval of airport officials for any aboveground elements within runway protection zones.

The PEIR determined that implementation of these mitigation measures would reduce impacts to airport operations and safety to less-than-significant levels.

The closest airports to the project site are Riverside Municipal Airport, located approximately 7 miles to the north, and Corona Municipal Airport, located approximately 9 miles to the northwest. The project site is not within the Airport Influence Area of either of these airports (Riverside County Airport Land Use Commission 2004). As such, no related impacts would occur, and **MM HAZ-5** and **MM HAZ-6** would not be required.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
f. For a project located within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, no private airstrips are in the vicinity of the program pipelines; therefore, no impacts associated with safety hazards from a private airstrip would occur.

Similarly, no private airstrips are located in proximity to the project site, and no impacts would occur.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, if excavation was to occur within roadways that serve as emergency/evacuation routes, and capacity of the affected streets would be reduced during construction (such as reducing four lanes to two lanes), the ability of these streets to serve as emergency/evacuation routes may be impaired

and impacts would be potentially significant. Mitigation was identified to address these potentially significant impacts, as summarized below:

- **MM HAZ-7** requires emergency/evacuation routes to be maintained during PCCP Program construction activities by: (1) avoiding the placement of excavation sites in roadways designated as emergency/evacuation routes; (2) working with local jurisdictions to maintain capacity on emergency/evacuation routes when those roadways cannot be avoided; and/or (3) notifying emergency personnel and posting temporary signage to direct emergency/evacuation traffic if detours are necessary.

Implementation of **MM HAZ-7** would reduce programmatic impacts to a less-than-significant level.

The proposed project would not involve excavation or other construction within roadways that would have the potential to affect emergency/evacuation routes; therefore, no impacts would occur, and **MM HAZ-7** would not be required.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PEIR notes that portions of the Allen-McColloch Pipeline, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder are within California Department of Forestry and Fire Protection (CAL FIRE) Very High Fire Hazard Severity Zones. Although fire can be a significant threat in in these areas, people or structures would not be exposed to significant risk of loss, injury, or death due to the PCCP Program, since the Program would not include habitable structures and would only bring a small number of people (construction workers) into the fire hazard severity zones during rehabilitation. Therefore, impacts related to exposing people or structures to risks involving wildland fires would be less than significant.

The project site is within an area mapped as a High Fire Hazard Severity Zone; however, as assessed for the PCCP Program, the proposed project would not include habitable structures and would only bring a small number of people (construction workers, occasional maintenance workers, and valve delivery/transport workers) into the fire hazard severity zone during construction and operations. In addition, the proposed project would occur on a vacant site within the existing Metropolitan facility at Lake Mathews and would not exacerbate fire risks. Therefore, impacts related to exposing people or structures to risks involving wildland fires would be less than significant.

The severity of the impact would be the same at that identified in the PEIR.

IX. HYDROLOGY AND WATER QUALITY

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, construction-related chemicals, such as fuels, oils, grease, solvents, and paints, would be stored in limited quantities at work sites, which could wash into and pollute surface waters or groundwater in the absence of proper controls. The PEIR states that Metropolitan would incorporate sediment and erosion control standard practices and requirements to minimize construction-related runoff impacts, and contractors would be required to comply with applicable National Pollutant Discharge Elimination System (NPDES) water quality regulations. Programmatic impacts were determined to be less than significant.

The proposed project would involve ground disturbing activities that would result in the potential for erosion and sedimentation, as well as the storage and use of typical construction-related chemicals at the project site. As described in Item VI.b, however, water quality BMPs would be implemented for sediment and erosion control, pollutant treatment, outlet protection, and general site management. Additionally, compliance with applicable NPDES regulations would be required. Construction-period impacts would be less than significant.

As a valve storage building, the proposed project would not involve uses that would have the potential to contribute substantial amounts of pollutants to runoff; therefore, impacts during operations also would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PEIR, no alteration of the course of a stream or river would occur under the PCCP Program. While construction would include excavation and the overall disturbance of existing hardscape and landscape, which could temporarily alter drainage patterns and potentially cause erosion and sedimentation, implementation of water quality BMPs was determined to reduce programmatic impacts to a less-than-significant level.

Development of the proposed project would result in an increase in impervious surfaces at the site and alter the site's existing drainage pattern. Impervious surfaces would consist of the roof of the proposed building and the pavement surrounding the building. Runoff from these surfaces would be collected in proposed four-foot-wide concrete swales that would surround the building and convey runoff to existing storm drains north of the site. Stormwater from the building roof would be collected in 8.5-inch-wide gutters and conveyed to the swales via a series of downspouts. Runoff would be directed to the proposed water retention basin in the northwest corner of the project site. The runoff would therefore be accommodated in a manner that would minimize the potential for erosion and sedimentation at the site. Impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?



Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PEIR, no alteration of the course of a stream or river would occur under the PCCP Program. The PEIR did discuss the potential for new aboveground facilities to change the extent of permeable or impermeable surfaces, which could alter the direction and volume of overland flows during both wet and dry periods. The following mitigation was identified:

- **MM HYD-1** requires the development and implementation of a project-specific grading and drainage plan for proposed aboveground facilities within pervious areas to ensure no increase in flooding would occur on or off site.

As discussed above in Item IX.c, the proposed project would alter the drainage pattern of the site through the introduction of new impervious services consisting of the new building and surrounding pavement. A drainage plan has been prepared that includes (as part of the proposed project) the construction of four-foot-wide concrete swales at the site that would accommodate stormwater runoff from the building roof and surrounding pavement and would convey the runoff to a proposed water retention basin in the northwest corner of the site. Based on the proposed design to accommodate stormwater runoff and the relatively small project footprint, the proposed project would not increase the rate or amount of runoff in a manner that would result in flooding on or off site. Impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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- e. 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?



Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PEIR, runoff could be generated during construction of the PCCP Program facilities during a storm event or from non-stormwater discharges, such as water used for dust control or hydrostatic testing of the pipelines. The PEIR stated that sediment and erosion control and groundwater dewatering standard practices and requirements would be implemented to minimize construction-related runoff and dewatering impacts. Impacts were determined to be less than significant with implementation of these standard practices and requirements, as well as compliance with applicable NPDES regulations.

The proposed project could involve polluted runoff during storm events or during non-stormwater discharges, as discussed in the PEIR; however, with proper implementation of BMPs and compliance with applicable regulations, impacts during construction would be less than significant. During operations, the site would generate runoff from the impervious surfaces associated with the

building and surrounding pavement. This runoff would be accommodated by proposed concrete swales surrounding the building that would convey stormwater to a new water retention basin, which would collect stormwater runoff from the impervious surfaces within the project site. As a valve storage building, the proposed project would not involve exterior uses that would have the potential to contribute substantial amounts of pollutants to runoff; therefore, impacts during operations also would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
j. Expose people or structures to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR states that the program study area does not include coastal areas that could be subject to tsunamis. While some areas in the PCCP Program are adjacent to bodies of water and could be subject to inundation by seiche under extreme conditions, the PEIR points out that placement of proposed facilities in these areas would not exacerbate this condition and the relatively small structures proposed under the PCCP Program would not be occupied by humans or at risk of substantial damage. The majority of the PCCP Program area is relatively flat and not susceptible to mudflows. Based on these considerations, the PEIR determined that programmatic impacts related to inundation by seiche, tsunami, or mudflow would be less than significant.

The proposed project is not located in an area that has been identified as a tsunami inundation zone or adjacent to hillsides that suggest risks related to mudflows. The project site is located adjacent to Lake Mathews and therefore could be subject to inundation by seiche under extreme conditions. However, the proposed building would be located amongst existing Metropolitan-owned and operated buildings and would not exacerbate potential seiche conditions. Furthermore, the proposed building would serve as a storage facility and would not be regularly occupied by humans. Therefore, impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

X. LAND USE AND PLANNING

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact Identified
in the PEIR*

- a. Physically divide an established community?

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Impact Less than or Equal to Impact Identified in the PEIR. As assessed in the PEIR, rehabilitation activities may involve barriers to confine construction for safety purposes and may require access to certain facilities be blocked or rerouted during construction. Such temporary barriers could physically divide communities from the most direct access to community facilities; however, these impediments would be temporary and contractors would be required to maintain some level of access to facilities. As such, construction period impacts would be less than significant. No long-term impacts would occur since the program consists of improvements to existing subsurface water pipelines and would not involve the construction or operation of permanent structures or alterations that would physically divide an established community.

The proposed project would occur within the existing Metropolitan facility at Lake Mathews, adjacent to similar uses. It would not limit access or physically divide an established community during construction or operations, and no impacts would occur.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact Identified
in the PEIR*

- b. Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

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Impact Less than or Equal to Impact Identified in the PEIR. The PEIR discussed that since the PCCP Program would not change land uses, the program's consistency with land use plans would be the same as the existing condition and no programmatic impacts related to conflicts with land use plans, policies, and regulations would result from program implementation. No mitigation was proposed.

The proposed project would occur within the existing Metropolitan facility at Lake Mathews, adjacent to similar uses. It would not conflict with land use plans, policies, or regulations, and no impacts would occur.

The severity of the impact would be the same as that identified in the PEIR.

XI. NOISE

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Expose persons to or generate noise levels 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"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR discussed the potential for noise impacts related to rehabilitation activities such as excavation, concrete sawing, and providing ventilation and power. Since determining noise impacts requires an analysis of ambient noise conditions, the location of receptors, and attenuation of the noise, the PEIR concluded that severity and location of the impacts could not be determined until excavation sites were identified. The following mitigation measures related to construction noise were identified:

- **MM NOI-2** requires a noise consultant to be retained during excavation site planning to assist in locating excavation sites away from sensitive receptors or where sensitive receptors can be shielded from construction noise;
- **MM NOI-3** requires a project-level noise study at all excavation sites where sensitive receptors are present; and
- **MM NOI-4** requires staging areas to be located in areas that would not affect sensitive receptors or where receptors can be shielded from staging noise.

The severity of the impacts would vary depending upon the proximity of construction activity to sensitive receptors, but the PEIR found that it is likely that noise levels would exceed local standards. Thus, program impacts were determined to be significant and unavoidable following the implementation of **MM NOI-2** through **MM NOI-4**.

As analyzed in the PEIR for the PCCP Program, the proposed project's noise generation would be limited to the construction period. The storage of valves inside a building, as well as associated activities such as delivery and removal of the valves from the site, would not generate noise that would affect sensitive receptors.

The closest sensitive receptors to the project site are the single-family residences located across El Sobrante Road, approximately 1,000 feet north of the project site. Based on this distance, **MM NOI-3** is not required. In addition, because the proposed construction area is located at a designated site within the Metropolitan facility and away from sensitive receptors, **MM NOI-2** and **MM NOI-4** are also not required.

The proposed project's construction noise generation is subject to the regulations included in County of Riverside Ordinance No. 847. The ordinance establishes general sound level limits for exterior noise levels and also provides exemptions for construction activities from the noise limits. Capital improvement projects of a governmental agency are exempt from the provisions of the ordinance. The proposed project, as a capital improvement project, is therefore exempt, and impacts associated with construction would be less than significant.

For informational purposes, noise levels associated with expected construction equipment at the distance to the nearest sensitive receptors (1,000 feet) are provided in Table 5, *Construction Equipment Noise Levels*.

Table 5. Construction Equipment Noise Levels

Equipment	Noise Level at 1,000 feet (dBA L _{EQ})
Compactor	50.2
Concrete Mixer Truck	48.8
Crane	46.6
Dozer	51.7
Excavator	50.7
Loader	49.1
Roller	47.0

Source: U.S. Department of Transportation 2008

Construction Traffic

Project construction would generate vehicle trips to and from the site during grading, slab construction/paving, and building construction. The highest trip daily generation is expected to occur during the grading phase for the net import of 2,550 CY of material. Assuming the use of standard 16-CY trucks, this would result in a total of 160 trucks, or 320 one-way trips. Grading is anticipated to occur over approximately 22 to 30 days; conservatively using the lower number of days (22), the grading phase would generate approximately 15 trips per day. These trips would occur along La Sierra Avenue and/or El Sobrante Road.

A general rule of thumb is that a doubling of traffic would cause a doubling in sound energy (an increase of 3-A-weighted decibels [dBA]), which would be perceptible, and therefore a significant increase. This rule, however, does not necessarily apply to haul trucks, which generate more noise per vehicle than passenger vehicles. Even then, the addition of 15 trucks per day to these roadways would not result in a perceptible increase in daily or hourly average noise levels based on the existing traffic volumes of the roadways.

In addition, County of Riverside Ordinance No. 847 exempts capital improvement projects of a governmental agency from the noise limits set forth in the ordinance. The proposed project, as a capital improvement project, is exempt, and impacts associated with construction traffic would be less than significant.

The severity of noise impacts for construction work would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, the severity and location of excessive groundborne vibration or groundborne noise level impacts could not be determined until excavation sites were identified. Mitigation was identified to reduce such impacts to a less-than-significant level, as summarized below:

- **MM NOI-1** requires a noise and vibration consultant to be retained during excavation site planning to assist in locating excavation sites away from vibration-sensitive land uses

wherever possible, or to identify appropriate mitigation to reduce vibration levels at vibration-sensitive land uses to less-than-significant levels.

The closest vibration-sensitive receptors to the project site are the single-family residences located across El Sobrante Road, approximately 1,000 feet north of the project site. Based on this distance, vibration generated during construction of the proposed project would not be perceptible, since manmade earthborne vibrations attenuate rapidly with distance; **MM NOI-1** is not required. Potential vibration generated at the site from the operation from construction equipment would not be detectable the single-family residences. Impacts would be less than significant.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity, above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR determined that the program would not result in permanent changes in noise levels after rehabilitation is complete. As such, no impacts would occur.

The proposed project would serve as a valve storage building and, similar to what was analyzed in the PEIR, would not generate substantial noise following construction. The proposed project would involve occasional trips to deliver valves to construction sites; however, this would be limited to one to two trips in a day at infrequent occurrences.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR discussed the potential for temporary or periodic increases in noise levels in the vicinity of rehabilitation sites and noted that the evaluation of noise impacts would require analysis of the ambient noise conditions, the location of receptors, and attenuation of the noise. As summarized above in XI.a, mitigation measures **MM NOI-2** through **MM NOI-4** were identified to reduce potential impacts related to construction noise; however, impacts were assumed to be significant and unavoidable.

Temporary or periodic increases in ambient noise levels would result from construction activities associated with the proposed project. These impacts are described in XI.a, above. Impacts would be less than significant.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, some portions of the existing pipelines are within airport land use plans or near airports; however, since the PCCP Program would not change land uses, and construction workers would wear noise safety gear as required by the federal Occupational Safety and Health Administration, noise impacts related to nearby airports were determined to be less than significant and no mitigation was proposed.

The closest airports to the project site are Riverside Municipal Airport, located approximately 7 miles to the north, and Corona Municipal Airport, located approximately 9 miles to the northwest. At these distances, the project site would not be exposed to excessive noise levels from aircraft. No impacts from aircraft noise exposure would occur.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or Equal
to Impact Identified in the
PEIR*

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

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Impact Less than or Equal to Impact Identified in the PEIR. The PCCP PEIR noted that there are no private airstrips in the vicinity of the program pipelines; therefore, there would be no impacts associated with noise from private airstrips.

Similar to what was analyzed in the PEIR, there are no private airstrips located near the project site. As such, the proposed project would not expose people residing or working in the project area to excessive noise levels from private airstrips.

The severity of the impact would be the same as that identified in the PEIR.

XII. RECREATION

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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- a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

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Impact Less than or Equal to Impact Identified in the PEIR. The PEIR discussed that construction staging areas for the PCCP Program may be located in parks or other recreational facilities for months or longer, depending on how many excavation sites the staging area is serving. The PEIR stated that Metropolitan would work with the local jurisdictions and schools to ensure that rehabilitation activities would not result in significant temporary impacts on recreational activities or permanent physical deterioration of recreational facilities, and programmatic impacts were determined to be less than significant. No mitigation was proposed.

The proposed project would occur within the existing Metropolitan facility at Lake Mathews and would not encroach upon or otherwise affect recreational facilities. No impacts would occur.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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- b. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PEIR, the PCCP Program does not include construction of recreational facilities and would not result in increased population that would require the construction or expansion of recreational facilities. Therefore, the Program would not result in adverse physical effects on the environment related to construction of recreational facilities.

As analyzed in the PCCP PEIR, the proposed project would not include construction of recreational facilities and would not result in increased population that would require the construction or expansion of recreational facilities. No impacts to physical effects on the environment from construction of recreational facilities would occur.

The severity of the impact would be the same as that identified in the PEIR.

XIII. TRANSPORTATION/TRAFFIC

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
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- a. Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths?



Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, the disruption of local and regional traffic caused by capacity reduction from PCCP Program rehabilitation activities would be significant at some locations, but the level of impacts would be determined at the project level when rehabilitation locations had been identified. The PEIR identified the following mitigation measures to reduce potentially significant impacts:

- **MM TRA-1** requires that excavation sites be located to avoid traffic impacts to the maximum extent feasible;
- **MM TRA-2** requires Metropolitan and/or its contractors to coordinate with the appropriate counties and local jurisdictions to develop construction traffic control measures and procedures prior to the start of construction; and
- **MM TRA-3** requires excavation work zones and construction staging areas to avoid interfering with parking for adjacent land uses, to the extent feasible.

The PEIR determined that implementation of **MM TRA-1** would reduce impacts related to temporary traffic disruptions and reduced capacity in some locations but stated that the severity or location of impacts could not be determined; therefore, programmatic impacts were found to be significant and unavoidable. Temporary programmatic impacts related to construction traffic and parking were determined to be less than significant with the implementation of **MM TRA-2** and **MM TRA-3**.

Unlike what was analyzed in the PCCP PEIR, project construction would not occur within roadways. Rather, it would occur within an undeveloped portion of land within the existing Metropolitan facility at Lake Mathews. As such, project construction would not directly disrupt traffic through lane closures or parking or access interference, and **MM TRA-1**, **MM TRA-2**, and **MM TRA-3** would not be required. Project construction would involve vehicular trips on public roadways associated with the import/export of construction materials and waste and worker commutes. The relatively low amount of construction traffic anticipated to occur from the proposed project would not substantially affect local roadway operations. Following the completion of project construction, vehicle trips would be limited to the initial delivery of the valves to the project site (estimated to be 22 trips), trips for the inspection of the valves by a Metropolitan inspector (estimated to be two trips), and the occasional delivery of valves to other PCCP Program construction sites from the project site (estimated to be 22 trips). Operation of the proposed project would not regularly generate vehicle trips and would therefore not affect local roadway operations. Impacts would be less than significant.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, because the program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to long-term congestion management plans. For PCCP Program rehabilitation activities that would be located on or around Congestion Management Plan (CMP) arterials or intersections, the PCCP Program was determined to generate only a small number of truck trips and employee commuter trips compared with the daily traffic volumes for these access roads, and individual projects would take place over a few months or years. Once rehabilitation is complete in the CMP roadway, the street would be restored to preconstruction conditions. As such, program impacts were determined to be less than significant.

As discussed above, the proposed project would not generate a substantial number of vehicle trips during construction or operations; therefore, the proposed project would not have the potential to conflict with a CMP and impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks?

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Impact Less than or Equal to Impact Identified in the PEIR. The PEIR noted that for aboveground rehabilitation activities in runway protection zones, construction equipment and/or personnel could interfere with airport operations. Also, where pipelines cross under runway or taxiway areas, there is the potential for belowground construction activities to affect or be affected by airport operations and safety. Implementation of **MM HAZ-5** would reduce program construction-period impacts to less-than-significant levels. Aboveground elements for program operations in a runway protection zone were determined to result in a significant impact if they could interfere with airport operations and safety, but program impacts would be less than significant with the implementation of **MM HAZ-6**, as the measure would require approval from airport officials on program elements.

The closest airports to the project site are Riverside Municipal Airport, located approximately 7 miles to the north, and Corona Municipal Airport, located approximately 9 miles to the northwest. The project site is not within the Airport Influence Area of either of these airports (Riverside County Airport Land Use Commission 2004). As such, the proposed project would not result in a change in air traffic patterns. No related impacts would occur, and **MM HAZ-5** and **MM HAZ-6** would not be required.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

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

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, no obstacles that would affect sight distance were determined to result from program construction. The PEIR also noted the potential for safety hazards to result from maneuvering of construction-related vehicles and equipment among general-purpose traffic on local streets and that temporary lane closures could affect non-motorized travel along affected road sections. Program impacts were determined to be less than significant with the implementation of **MM TRA-2**.

Project construction would occur within an existing Metropolitan facility, not within roadways, and would therefore not increase traffic hazards. No impacts would occur, and **MM TRA-2** would not be required.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- e. Result in inadequate emergency access?

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, in some cases the program pipelines are within street rights-of-way that serve as emergency response routes and/or evacuation routes. The PEIR stated that if excavation were to take place in roadways that serve as emergency access and capacity of the affected streets were reduced during construction (such as reducing four lanes to two lanes), the ability of these streets to serve as emergency access routes may be impaired. Implementation of **MM HAZ-7** would reduce impacts to a less-than-significant level. Once rehabilitation is complete, contractors would be required to return the street to preconstruction conditions; therefore, there would be no long-term impacts related to emergency access.

Project construction would occur within an existing Metropolitan facility, not within roadways, and would therefore not result in inadequate emergency access. No impacts would occur, and **MM HAZ-7** would not be required.

The severity of the impact would be less than that identified in the PEIR.

Would the proposed project:

*New or More Severe
Significant Impact than
Identified in the PEIR*

*Impact Less than or
Equal to Impact
Identified in the PEIR*

- f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

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Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, program rehabilitation would require temporary lane closures on certain streets. Where the pipeline directly travels under Class II bicycle lanes or encroaches on existing bus stops, work zones could interfere with bus services and bicycle traffic on these streets. Lane closures would be restricted to a short distance and would be short in duration, but temporary impacts could be significant. With implementation of **MM TRA-1** and **MM TRA-2**, however, programmatic impacts were determined to be less than significant.

Project construction would occur within an existing Metropolitan facility, not within roadways, and would therefore not affect public transit, bicycle, or pedestrian facilities or conflict with adopted policies, plans, or programs regarding such facilities. No impacts would occur, and **MM-TRA-1** and **MM TRA-2** would not be required.

The severity of the impact would be less than that identified in the PEIR.

XIV. UTILITIES AND SERVICE SYSTEMS

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, aside from water released during dewatering for rehabilitation activities, the PCCP Program would not generate wastewater and would therefore not require wastewater treatment. Impacts were considered less than significant.

Similar to what was analyzed in the PEIR, the proposed project would not generate wastewater and would therefore not require wastewater treatment. The proposed project would also not involve dewatering. As such, no impacts would occur.

The severity of the impact would be less than that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
b. Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PEIR discusses how the PCCP Program would rehabilitate existing pipelines and would not involve the construction of new water facilities or increase the capacity of the Metropolitan water distribution system. No impacts would occur.

The proposed project, as a valve storage building, would not require the construction of new water or wastewater treatment facilities. No impacts would occur.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
c. Require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, new stormwater drainage facilities are typically required when a project increases the amount of impervious surfaces at a site, thus leading to increased runoff. Since the PCCP Program would not create new paved surfaces, no new stormwater facilities are required, and no impacts would occur.

The proposed project would create new impervious surfaces at the site and would involve the construction of concrete swales and a water retention basin at the site to accommodate the associated increase in runoff. The environmental effects associated with the construction of these drainage facilities are included in the project-specific analysis throughout this Initial Study. No

additional off-site drainage features are required that could cause significant environmental effects. As such, no impacts would occur.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new and expanded entitlements needed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PEIR notes that the PCCP Program would rehabilitate existing water distribution pipelines. It would not entail uses that would result in long-term water consumption. Consequently, the Program would not affect existing water entitlements or require new entitlements. No impact would occur.

No new water connections or new or expanded entitlements would be required for operation of the proposed valve storage building; therefore, no impacts associated with water entitlements would occur.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
e. Result in a determination by the wastewater treatment provided that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to its existing commitments?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, the PCCP Program consists of rehabilitating existing pipelines and would not include uses that would require wastewater treatment. No impacts to wastewater treatment capacities would occur.

The proposed project, as a valve storage facility, would not generate wastewater and would therefore not have potential to affect wastewater treatment capacities. No impacts would occur.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. As discussed in the PCCP PEIR, waste generation from the Program would be limited to construction-related debris, such as asphalt, PCCP, and excavated soil. The debris would either be reused on site, if feasible, or disposed of off-site. The PEIR recognizes multiple facilities with existing capacities to recycle and/or dispose of construction waste. It was therefore determined that impacts would be less than significant.

Similarly, waste generated during implementation of the proposed project would be limited to the construction period. Because the proposed project would not involve demolition and would require

a net import of earth material during grading, it is not expected to generate a substantial amount of waste that would need to be disposed of off-site. As such, impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

<i>Would the proposed project:</i>	<i>New or More Severe Significant Impact than Identified in the PEIR</i>	<i>Impact Less than or Equal to Impact Identified in the PEIR</i>
g. Comply with federal, State, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Impact Less than or Equal to Impact Identified in the PEIR. The PEIR notes that the PCCP Program's rehabilitation activities would generate small amounts of solid waste, and that such waste would be properly disposed of in accordance with federal, State, and local statutes and regulations. Impacts were therefore considered less than significant.

The proposed project would not generate substantial amounts of waste. Waste that is generated would be disposed of in accordance with federal, State, and local statutes and regulations. Impacts would be less than significant.

The severity of the impact would be the same as that identified in the PEIR.

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PREPARERS OF INITIAL STUDY

The following individuals participated in the preparation of the Initial Study:

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APPENDIX A – Air Quality Modeling Outputs

PCCP Valve Stroage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**PCCP Valve Stroage Building - Construction****Riverside-South Coast County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	18.20	1000sqft	0.42	18,200.00	0
Other Asphalt Surfaces	51.32	1000sqft	1.18	51,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run R3 - Updated fill import

Land Use -

Construction Phase - Schedule per project engineers.

Off-road Equipment - Pre-engineered steel structure. Equipment per project engineers.

Off-road Equipment - Equipment per project engineers.

Off-road Equipment - Equipment per project engineers.

Off-Highway Trucks = water truck.

Off-road Equipment -

Trips and VMT - 120 hauling round trips asphalt/aggregate and 152 hauling round trips concrete/aggregate during paving/slab.

Grading - 2,550 CY net fill.

Vehicle Trips - Construction only.

PCCP Valve Stroage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Dust mitigation to met SCAQMD Rule 403 requirements.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	200.00	67.00
tblConstructionPhase	NumDays	4.00	22.00
tblConstructionPhase	NumDays	10.00	38.00
tblConstructionPhase	NumDays	2.00	21.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	1.98	0.00
tblGrading	MaterialImported	0.00	2,550.00
tblSolidWaste	SolidWasteGenerationRate	17.11	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	272.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	4,208,750.00	0.00

2.0 Emissions Summary

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0564	0.5497	0.4844	1.1900e-003	0.0946	0.0242	0.1188	0.0431	0.0223	0.0654	0.0000	107.3256	107.3256	0.0240	3.8800e-003	109.0791
Maximum	0.0564	0.5497	0.4844	1.1900e-003	0.0946	0.0242	0.1188	0.0431	0.0223	0.0654	0.0000	107.3256	107.3256	0.0240	3.8800e-003	109.0791

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0564	0.5497	0.4844	1.1900e-003	0.0549	0.0242	0.0791	0.0227	0.0223	0.0451	0.0000	107.3255	107.3255	0.0240	3.8800e-003	109.0790
Maximum	0.0564	0.5497	0.4844	1.1900e-003	0.0549	0.0242	0.0791	0.0227	0.0223	0.0451	0.0000	107.3255	107.3255	0.0240	3.8800e-003	109.0790

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	42.01	0.00	33.44	47.31	0.00	31.14	0.00	0.00	0.00	0.00	0.00	0.00

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2022	6-30-2022	0.3442	0.3442
2	7-1-2022	9-30-2022	0.2116	0.2116
		Highest	0.3442	0.3442

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Contractor Mobilization	Site Preparation	4/1/2022	4/29/2022	5	21	
2	Grading	Grading	4/30/2022	5/31/2022	5	22	
3	Paving/Slab	Paving	6/1/2022	7/24/2022	5	38	

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	7/25/2022	10/25/2022	5	67
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Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 11****Acres of Paving: 1.18****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Contractor Mobilization	Forklifts	1	8.00	89	0.20
Contractor Mobilization	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Off-Highway Trucks	1	4.00	402	0.38
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Paving/Slab	Cement and Mortar Mixers	1	6.00	9	0.56
Paving/Slab	Pavers	1	6.00	130	0.42
Paving/Slab	Paving Equipment	1	8.00	132	0.36
Paving/Slab	Rollers	1	7.00	80	0.38
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Contractor Mobilization	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	5	13.00	0.00	319.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Slab	4	10.00	0.00	272.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	29.00	11.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Contractor Mobilization - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9200e-003	0.0287	0.0356	5.0000e-005		1.6800e-003	1.6800e-003		1.5500e-003	1.5500e-003	0.0000	4.2795	4.2795	1.3800e-003	0.0000	4.3141
Total	2.9200e-003	0.0287	0.0356	5.0000e-005	0.0000	1.6800e-003	1.6800e-003	0.0000	1.5500e-003	1.5500e-003	0.0000	4.2795	4.2795	1.3800e-003	0.0000	4.3141

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Contractor Mobilization - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.4000e-004	1.7900e-003	0.0000	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4563	0.4563	1.0000e-005	1.0000e-005	0.4604
Total	1.8000e-004	1.4000e-004	1.7900e-003	0.0000	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4563	0.4563	1.0000e-005	1.0000e-005	0.4604

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9200e-003	0.0287	0.0356	5.0000e-005		1.6800e-003	1.6800e-003		1.5500e-003	1.5500e-003	0.0000	4.2795	4.2795	1.3800e-003	0.0000	4.3141
Total	2.9200e-003	0.0287	0.0356	5.0000e-005	0.0000	1.6800e-003	1.6800e-003	0.0000	1.5500e-003	1.5500e-003	0.0000	4.2795	4.2795	1.3800e-003	0.0000	4.3141

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Contractor Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.4000e-004	1.7900e-003	0.0000	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4563	0.4563	1.0000e-005	1.0000e-005	0.4604
Total	1.8000e-004	1.4000e-004	1.7900e-003	0.0000	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4563	0.4563	1.0000e-005	1.0000e-005	0.4604

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0722	0.0000	0.0722	0.0371	0.0000	0.0371	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.1906	0.1310	3.2000e-004		8.5500e-003	8.5500e-003		7.8700e-003	7.8700e-003	0.0000	28.2039	28.2039	9.1200e-003	0.0000	28.4319
Total	0.0194	0.1906	0.1310	3.2000e-004	0.0722	8.5500e-003	0.0808	0.0371	7.8700e-003	0.0449	0.0000	28.2039	28.2039	9.1200e-003	0.0000	28.4319

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.9000e-004	0.0215	4.5800e-003	9.0000e-005	2.7500e-003	2.4000e-004	2.9900e-003	7.6000e-004	2.3000e-004	9.8000e-004	0.0000	8.8778	8.8778	1.2000e-004	1.4000e-003	9.2976
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.9000e-004	4.8700e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.2428	1.2428	3.0000e-005	3.0000e-005	1.2539
Total	9.9000e-004	0.0219	9.4500e-003	1.0000e-004	4.3200e-003	2.5000e-004	4.5700e-003	1.1800e-003	2.4000e-004	1.4000e-003	0.0000	10.1206	10.1206	1.5000e-004	1.4300e-003	10.5515

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0325	0.0000	0.0325	0.0167	0.0000	0.0167	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.1906	0.1310	3.2000e-004		8.5500e-003	8.5500e-003		7.8700e-003	7.8700e-003	0.0000	28.2038	28.2038	9.1200e-003	0.0000	28.4319
Total	0.0194	0.1906	0.1310	3.2000e-004	0.0325	8.5500e-003	0.0411	0.0167	7.8700e-003	0.0246	0.0000	28.2038	28.2038	9.1200e-003	0.0000	28.4319

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.9000e-004	0.0215	4.5800e-003	9.0000e-005	2.7500e-003	2.4000e-004	2.9900e-003	7.6000e-004	2.3000e-004	9.8000e-004	0.0000	8.8778	8.8778	1.2000e-004	1.4000e-003	9.2976
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.9000e-004	4.8700e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.2428	1.2428	3.0000e-005	3.0000e-005	1.2539
Total	9.9000e-004	0.0219	9.4500e-003	1.0000e-004	4.3200e-003	2.5000e-004	4.5700e-003	1.1800e-003	2.4000e-004	1.4000e-003	0.0000	10.1206	10.1206	1.5000e-004	1.4300e-003	10.5515

3.4 Paving/Slab - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9400e-003	0.0969	0.1248	2.0000e-004		4.8900e-003	4.8900e-003		4.5100e-003	4.5100e-003	0.0000	17.1700	17.1700	5.4100e-003	0.0000	17.3052
Paving	1.5500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0115	0.0969	0.1248	2.0000e-004		4.8900e-003	4.8900e-003		4.5100e-003	4.5100e-003	0.0000	17.1700	17.1700	5.4100e-003	0.0000	17.3052

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving/Slab - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.2000e-004	0.0183	3.9100e-003	8.0000e-005	2.3500e-003	2.0000e-004	2.5500e-003	6.4000e-004	1.9000e-004	8.4000e-004	0.0000	7.5698	7.5698	1.0000e-004	1.1900e-003	7.9277
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	5.2000e-004	6.4700e-003	2.0000e-005	2.0900e-003	1.0000e-005	2.1000e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6513	1.6513	4.0000e-005	5.0000e-005	1.6661
Total	1.0800e-003	0.0188	0.0104	1.0000e-004	4.4400e-003	2.1000e-004	4.6500e-003	1.1900e-003	2.0000e-004	1.4000e-003	0.0000	9.2211	9.2211	1.4000e-004	1.2400e-003	9.5937

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9400e-003	0.0969	0.1248	2.0000e-004		4.8900e-003	4.8900e-003		4.5100e-003	4.5100e-003	0.0000	17.1700	17.1700	5.4100e-003	0.0000	17.3052
Paving	1.5500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0115	0.0969	0.1248	2.0000e-004		4.8900e-003	4.8900e-003		4.5100e-003	4.5100e-003	0.0000	17.1700	17.1700	5.4100e-003	0.0000	17.3052

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving/Slab - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.2000e-004	0.0183	3.9100e-003	8.0000e-005	2.3500e-003	2.0000e-004	2.5500e-003	6.4000e-004	1.9000e-004	8.4000e-004	0.0000	7.5698	7.5698	1.0000e-004	1.1900e-003	7.9277
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	5.2000e-004	6.4700e-003	2.0000e-005	2.0900e-003	1.0000e-005	2.1000e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6513	1.6513	4.0000e-005	5.0000e-005	1.6661
Total	1.0800e-003	0.0188	0.0104	1.0000e-004	4.4400e-003	2.1000e-004	4.6500e-003	1.1900e-003	2.0000e-004	1.4000e-003	0.0000	9.2211	9.2211	1.4000e-004	1.2400e-003	9.5937

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0164	0.1737	0.1328	2.6000e-004		8.3800e-003	8.3800e-003		7.7100e-003	7.7100e-003	0.0000	22.9776	22.9776	7.4300e-003	0.0000	23.1634
Total	0.0164	0.1737	0.1328	2.6000e-004		8.3800e-003	8.3800e-003		7.7100e-003	7.7100e-003	0.0000	22.9776	22.9776	7.4300e-003	0.0000	23.1634

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Building Construction - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9000e-004	0.0164	5.5100e-003	7.0000e-005	2.3300e-003	2.2000e-004	2.5500e-003	6.7000e-004	2.2000e-004	8.9000e-004	0.0000	6.4531	6.4531	7.0000e-005	9.6000e-004	6.7401
Worker	3.4000e-003	2.6400e-003	0.0331	9.0000e-005	0.0107	5.0000e-005	0.0107	2.8400e-003	5.0000e-005	2.8900e-003	0.0000	8.4435	8.4435	2.3000e-004	2.3000e-004	8.5188
Total	3.9900e-003	0.0190	0.0386	1.6000e-004	0.0130	2.7000e-004	0.0133	3.5100e-003	2.7000e-004	3.7800e-003	0.0000	14.8966	14.8966	3.0000e-004	1.1900e-003	15.2589

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0164	0.1737	0.1328	2.6000e-004		8.3800e-003	8.3800e-003		7.7100e-003	7.7100e-003	0.0000	22.9776	22.9776	7.4300e-003	0.0000	23.1634
Total	0.0164	0.1737	0.1328	2.6000e-004		8.3800e-003	8.3800e-003		7.7100e-003	7.7100e-003	0.0000	22.9776	22.9776	7.4300e-003	0.0000	23.1634

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Building Construction - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9000e-004	0.0164	5.5100e-003	7.0000e-005	2.3300e-003	2.2000e-004	2.5500e-003	6.7000e-004	2.2000e-004	8.9000e-004	0.0000	6.4531	6.4531	7.0000e-005	9.6000e-004	6.7401
Worker	3.4000e-003	2.6400e-003	0.0331	9.0000e-005	0.0107	5.0000e-005	0.0107	2.8400e-003	5.0000e-005	2.8900e-003	0.0000	8.4435	8.4435	2.3000e-004	2.3000e-004	8.5188
Total	3.9900e-003	0.0190	0.0386	1.6000e-004	0.0130	2.7000e-004	0.0133	3.5100e-003	2.7000e-004	3.7800e-003	0.0000	14.8966	14.8966	3.0000e-004	1.1900e-003	15.2589

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Unrefrigerated Warehouse-No Rail	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.0 Energy Detail**

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - Natural Gas****Unmitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Unmitigated	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

7.0 Water Detail

7.1 Mitigation Measures Water

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

PCCP Valve Stroage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**PCCP Valve Stroage Building - Construction****Riverside-South Coast County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	18.20	1000sqft	0.42	18,200.00	0
Other Asphalt Surfaces	51.32	1000sqft	1.18	51,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run R3 - Updated fill import

Land Use -

Construction Phase - Schedule per project engineers.

Off-road Equipment - Pre-engineered steel structure. Equipment per project engineers.

Off-road Equipment - Equipment per project engineers.

Off-road Equipment - Equipment per project engineers.

Off-Highway Trucks = water truck.

Off-road Equipment -

Trips and VMT - 120 hauling round trips asphalt/aggregate and 152 hauling round trips concrete/aggregate during paving/slab.

Grading - 2,550 CY net fill.

Vehicle Trips - Construction only.

PCCP Valve Stroage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Dust mitigation to met SCAQMD Rule 403 requirements.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	200.00	67.00
tblConstructionPhase	NumDays	4.00	22.00
tblConstructionPhase	NumDays	10.00	38.00
tblConstructionPhase	NumDays	2.00	21.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	1.98	0.00
tblGrading	MaterialImported	0.00	2,550.00
tblSolidWaste	SolidWasteGenerationRate	17.11	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	272.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	4,208,750.00	0.00

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.8529	19.3161	12.7512	0.0387	6.9661	0.7995	7.7656	3.4778	0.7363	4.2141	0.0000	3,838.053 3	3,838.053 3	0.9293	0.1436	3,904.075 9
Maximum	1.8529	19.3161	12.7512	0.0387	6.9661	0.7995	7.7656	3.4778	0.7363	4.2141	0.0000	3,838.053 3	3,838.053 3	0.9293	0.1436	3,904.075 9

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.8529	19.3161	12.7512	0.0387	3.3543	0.7995	4.1537	1.6245	0.7363	2.3608	0.0000	3,838.053 3	3,838.053 3	0.9293	0.1436	3,904.075 9
Maximum	1.8529	19.3161	12.7512	0.0387	3.3543	0.7995	4.1537	1.6245	0.7363	2.3608	0.0000	3,838.053 3	3,838.053 3	0.9293	0.1436	3,904.075 9

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	51.85	0.00	46.51	53.29	0.00	43.98	0.00	0.00	0.00	0.00	0.00	0.00

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.6000e-004	6.0000e-005	7.1000e-003	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005	0.0000	0.0162

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.6000e-004	6.0000e-005	7.1000e-003	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005	0.0000	0.0162

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Contractor Mobilization	Site Preparation	4/1/2022	4/29/2022	5	21	
2	Grading	Grading	4/30/2022	5/31/2022	5	22	
3	Paving/Slab	Paving	6/1/2022	7/24/2022	5	38	
4	Building Construction	Building Construction	7/25/2022	10/25/2022	5	67	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 11****Acres of Paving: 1.18****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Contractor Mobilization	Forklifts	1	8.00	89	0.20
Contractor Mobilization	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Off-Highway Trucks	1	4.00	402	0.38
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving/Slab	Cement and Mortar Mixers	1	6.00	9	0.56
Paving/Slab	Pavers	1	6.00	130	0.42
Paving/Slab	Paving Equipment	1	8.00	132	0.36
Paving/Slab	Rollers	1	7.00	80	0.38
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Contractor Mobilization	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	319.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Slab	4	10.00	0.00	272.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	29.00	11.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Contractor Mobilization - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2783	2.7305	3.3917	4.6400e-003		0.1600	0.1600		0.1472	0.1472		449.2698	449.2698	0.1453		452.9024
Total	0.2783	2.7305	3.3917	4.6400e-003	0.0000	0.1600	0.1600	0.0000	0.1472	0.1472		449.2698	449.2698	0.1453		452.9024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0184	0.0133	0.1615	4.6000e-004	0.0559	2.8000e-004	0.0562	0.0148	2.6000e-004	0.0151		46.8087	46.8087	1.2700e-003	1.3000e-003	47.2282
Total	0.0184	0.0133	0.1615	4.6000e-004	0.0559	2.8000e-004	0.0562	0.0148	2.6000e-004	0.0151		46.8087	46.8087	1.2700e-003	1.3000e-003	47.2282

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Contractor Mobilization - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2783	2.7305	3.3917	4.6400e-003		0.1600	0.1600		0.1472	0.1472	0.0000	449.2698	449.2698	0.1453		452.9024
Total	0.2783	2.7305	3.3917	4.6400e-003	0.0000	0.1600	0.1600	0.0000	0.1472	0.1472	0.0000	449.2698	449.2698	0.1453		452.9024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0184	0.0133	0.1615	4.6000e-004	0.0559	2.8000e-004	0.0562	0.0148	2.6000e-004	0.0151		46.8087	46.8087	1.2700e-003	1.3000e-003	47.2282
Total	0.0184	0.0133	0.1615	4.6000e-004	0.0559	2.8000e-004	0.0562	0.0148	2.6000e-004	0.0151		46.8087	46.8087	1.2700e-003	1.3000e-003	47.2282

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5670	0.0000	6.5670	3.3697	0.0000	3.3697			0.0000			0.0000
Off-Road	1.7614	17.3284	11.9081	0.0292		0.7772	0.7772		0.7150	0.7150		2,826.311 4	2,826.311 4	0.9141		2,849.163 6
Total	1.7614	17.3284	11.9081	0.0292	6.5670	0.7772	7.3442	3.3697	0.7150	4.0847		2,826.311 4	2,826.311 4	0.9141		2,849.163 6

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0437	1.9533	0.4231	8.3400e-003	0.2538	0.0216	0.2753	0.0696	0.0206	0.0902		890.0393	890.0393	0.0119	0.1402	932.1190
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0479	0.0345	0.4200	1.2000e-003	0.1453	7.2000e-004	0.1460	0.0385	6.7000e-004	0.0392		121.7026	121.7026	3.3100e-003	3.3800e-003	122.7934
Total	0.0915	1.9877	0.8431	9.5400e-003	0.3991	0.0223	0.4214	0.1081	0.0213	0.1294		1,011.741 9	1,011.741 9	0.0152	0.1436	1,054.912 4

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Grading - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9552	0.0000	2.9552	1.5164	0.0000	1.5164			0.0000			0.0000
Off-Road	1.7614	17.3284	11.9081	0.0292		0.7772	0.7772		0.7150	0.7150	0.0000	2,826.311 4	2,826.311 4	0.9141		2,849.163 6
Total	1.7614	17.3284	11.9081	0.0292	2.9552	0.7772	3.7324	1.5164	0.7150	2.2314	0.0000	2,826.311 4	2,826.311 4	0.9141		2,849.163 6

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0437	1.9533	0.4231	8.3400e-003	0.2538	0.0216	0.2753	0.0696	0.0206	0.0902		890.0393	890.0393	0.0119	0.1402	932.1190
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0479	0.0345	0.4200	1.2000e-003	0.1453	7.2000e-004	0.1460	0.0385	6.7000e-004	0.0392		121.7026	121.7026	3.3100e-003	3.3800e-003	122.7934
Total	0.0915	1.9877	0.8431	9.5400e-003	0.3991	0.0223	0.4214	0.1081	0.0213	0.1294		1,011.741 9	1,011.741 9	0.0152	0.1436	1,054.912 4

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving/Slab - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5230	5.0981	6.5681	0.0104		0.2573	0.2573		0.2376	0.2376		996.1399	996.1399	0.3139		1,003.9862
Paving	0.0814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6043	5.0981	6.5681	0.0104		0.2573	0.2573		0.2376	0.2376		996.1399	996.1399	0.3139		1,003.9862

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0216	0.9642	0.2089	4.1200e-003	0.1253	0.0106	0.1359	0.0344	0.0102	0.0445		439.3660	439.3660	5.8900e-003	0.0692	460.1386
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0368	0.0265	0.3231	9.2000e-004	0.1118	5.6000e-004	0.1123	0.0296	5.1000e-004	0.0302		93.6174	93.6174	2.5400e-003	2.6000e-003	94.4564
Total	0.0584	0.9907	0.5320	5.0400e-003	0.2371	0.0112	0.2483	0.0640	0.0107	0.0747		532.9834	532.9834	8.4300e-003	0.0718	554.5950

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving/Slab - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5230	5.0981	6.5681	0.0104		0.2573	0.2573		0.2376	0.2376	0.0000	996.1399	996.1399	0.3139		1,003.9862
Paving	0.0814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6043	5.0981	6.5681	0.0104		0.2573	0.2573		0.2376	0.2376	0.0000	996.1399	996.1399	0.3139		1,003.9862

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0216	0.9642	0.2089	4.1200e-003	0.1253	0.0106	0.1359	0.0344	0.0102	0.0445		439.3660	439.3660	5.8900e-003	0.0692	460.1386
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0368	0.0265	0.3231	9.2000e-004	0.1118	5.6000e-004	0.1123	0.0296	5.1000e-004	0.0302		93.6174	93.6174	2.5400e-003	2.6000e-003	94.4564
Total	0.0584	0.9907	0.5320	5.0400e-003	0.2371	0.0112	0.2483	0.0640	0.0107	0.0747		532.9834	532.9834	8.4300e-003	0.0718	554.5950

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4885	5.1861	3.9630	7.8100e-003		0.2503	0.2503		0.2303	0.2303		756.0751	756.0751	0.2445		762.1884
Total	0.4885	5.1861	3.9630	7.8100e-003		0.2503	0.2503		0.2303	0.2303		756.0751	756.0751	0.2445		762.1884

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0171	0.4900	0.1680	2.0000e-003	0.0705	6.7200e-003	0.0772	0.0203	6.4300e-003	0.0267		212.4713	212.4713	2.2100e-003	0.0315	221.9236
Worker	0.1068	0.0769	0.9370	2.6700e-003	0.3242	1.6200e-003	0.3258	0.0860	1.4900e-003	0.0875		271.4904	271.4904	7.3700e-003	7.5500e-003	273.9237
Total	0.1239	0.5669	1.1049	4.6700e-003	0.3946	8.3400e-003	0.4030	0.1063	7.9200e-003	0.1142		483.9618	483.9618	9.5800e-003	0.0391	495.8472

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4885	5.1861	3.9630	7.8100e-003		0.2503	0.2503		0.2303	0.2303	0.0000	756.0751	756.0751	0.2445		762.1884
Total	0.4885	5.1861	3.9630	7.8100e-003		0.2503	0.2503		0.2303	0.2303	0.0000	756.0751	756.0751	0.2445		762.1884

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0171	0.4900	0.1680	2.0000e-003	0.0705	6.7200e-003	0.0772	0.0203	6.4300e-003	0.0267		212.4713	212.4713	2.2100e-003	0.0315	221.9236
Worker	0.1068	0.0769	0.9370	2.6700e-003	0.3242	1.6200e-003	0.3258	0.0860	1.4900e-003	0.0875		271.4904	271.4904	7.3700e-003	7.5500e-003	273.9237
Total	0.1239	0.5669	1.1049	4.6700e-003	0.3946	8.3400e-003	0.4030	0.1063	7.9200e-003	0.1142		483.9618	483.9618	9.5800e-003	0.0391	495.8472

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unrefrigerated Warehouse-No Rail	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Unmitigated	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Total	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162

PCCP Valve Storage Building - Construction - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Total	6.6000e-004	6.0000e-005	7.1000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**PCCP Valve Stroage Building - Operation****Riverside-South Coast County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	18.20	1000sqft	0.42	18,200.00	0
Other Asphalt Surfaces	51.32	1000sqft	1.18	51,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This model includes PCCP valve transport to storage building, valve inspection, and valve delivery to final site. On-road trips and off-road equipment are in the construction section. Operational section only includes building lighting.

Land Use -

Construction Phase - Valves delivered/inspected from port over 2 days.

Valves delivered to final sites, 1 per day over 11 days.

Off-road Equipment - Pre-engineered steel structure. Equipment per project engineers.

Off-road Equipment - Taylor T-4030 forklift (160 HP diesel) for unloading.

Off-road Equipment - Taylor T-4030 forklift (160 HP diesel) for loading.

Trips and VMT - Workers assumed to be from exisgin facility (no new worker trips), 2 trips/ady for inspector.

22 trips for valves assuming 1 valve per truck.

58 miles Port of Long Beach to Lake Mathews

79 miles longest anticipated final deliver distance.

Grading -

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - No operational trips.

Consumer Products - No consumer products or parking degreaser.

Area Coating - prepainted building.

Energy Use - Lighting energy only.

Water And Wastewater - No water/wastewater use.

Solid Waste - No solid waste.

Construction Off-road Equipment Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	PhaseEndDate	1/5/2023	1/18/2023
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	1.98	0.00
tblOffRoadEquipment	HorsePower	89.00	160.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblSolidWaste	SolidWasteGenerationRate	17.11	0.00
tblTripsAndVMT	HaulingTripLength	20.00	58.00
tblTripsAndVMT	HaulingTripLength	20.00	79.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	4,208,750.00	0.00

2.0 Emissions Summary

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	4.1000e-004	9.5700e-003	5.2700e-003	5.0000e-005	1.3200e-003	2.3000e-004	1.5500e-003	3.6000e-004	2.2000e-004	5.8000e-004	0.0000	4.4239	4.4239	2.3000e-004	6.1000e-004	4.6108
Maximum	4.1000e-004	9.5700e-003	5.2700e-003	5.0000e-005	1.3200e-003	2.3000e-004	1.5500e-003	3.6000e-004	2.2000e-004	5.8000e-004	0.0000	4.4239	4.4239	2.3000e-004	6.1000e-004	4.6108

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	4.1000e-004	9.5700e-003	5.2700e-003	5.0000e-005	1.3200e-003	2.3000e-004	1.5500e-003	3.6000e-004	2.2000e-004	5.8000e-004	0.0000	4.4239	4.4239	2.3000e-004	6.1000e-004	4.6108
Maximum	4.1000e-004	9.5700e-003	5.2700e-003	5.0000e-005	1.3200e-003	2.3000e-004	1.5500e-003	3.6000e-004	2.2000e-004	5.8000e-004	0.0000	4.4239	4.4239	2.3000e-004	6.1000e-004	4.6108

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2023	4-1-2023	0.0086	0.0086
		Highest	0.0086	0.0086

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7764	3.7764	3.2000e-004	4.0000e-005	3.7959
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.7781	3.7781	3.2000e-004	4.0000e-005	3.7977

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7764	3.7764	3.2000e-004	4.0000e-005	3.7959
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.7781	3.7781	3.2000e-004	4.0000e-005	3.7977

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Valve delivery and inspection	Site Preparation	1/2/2023	1/3/2023	5	2	
2	Valve delivery to sites	Site Preparation	1/4/2023	1/18/2023	5	11	

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 0****Acres of Paving: 1.18****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Valve delivery and inspection	Forklifts	1	8.00	160	0.20
Valve delivery to sites	Forklifts	1	2.00	150	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Valve delivery and inspection	1	2.00	0.00	22.00	14.70	6.90	58.00	LD_Mix	HDT_Mix	HHDT
Valve delivery to sites	1	0.00	0.00	22.00	14.70	6.90	79.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Valve delivery and inspection - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4000e-004	1.1900e-003	1.7900e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.2417	0.2417	8.0000e-005	0.0000	0.2437
Total	1.4000e-004	1.1900e-003	1.7900e-003	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	6.0000e-005	6.0000e-005	0.0000	0.2417	0.2417	8.0000e-005	0.0000	0.2437

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.9300e-003	5.0000e-004	2.0000e-005	5.5000e-004	4.0000e-005	5.9000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	1.6365	1.6365	2.0000e-005	2.6000e-004	1.7140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0169	0.0169	0.0000	0.0000	0.0171
Total	5.0000e-005	2.9300e-003	5.6000e-004	2.0000e-005	5.7000e-004	4.0000e-005	6.1000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	1.6535	1.6535	2.0000e-005	2.6000e-004	1.7310

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Valve delivery and inspection - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4000e-004	1.1900e-003	1.7900e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.2417	0.2417	8.0000e-005	0.0000	0.2437
Total	1.4000e-004	1.1900e-003	1.7900e-003	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	6.0000e-005	6.0000e-005	0.0000	0.2417	0.2417	8.0000e-005	0.0000	0.2437

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.9300e-003	5.0000e-004	2.0000e-005	5.5000e-004	4.0000e-005	5.9000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	1.6365	1.6365	2.0000e-005	2.6000e-004	1.7140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0169	0.0169	0.0000	0.0000	0.0171
Total	5.0000e-005	2.9300e-003	5.6000e-004	2.0000e-005	5.7000e-004	4.0000e-005	6.1000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	1.6535	1.6535	2.0000e-005	2.6000e-004	1.7310

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Valve delivery to sites - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8000e-004	1.5400e-003	2.3100e-003	0.0000		8.0000e-005	8.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.3116	0.3116	1.0000e-004	0.0000	0.3141
Total	1.8000e-004	1.5400e-003	2.3100e-003	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	7.0000e-005	7.0000e-005	0.0000	0.3116	0.3116	1.0000e-004	0.0000	0.3141

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	3.9000e-003	6.0000e-004	2.0000e-005	7.5000e-004	5.0000e-005	8.0000e-004	2.1000e-004	5.0000e-005	2.6000e-004	0.0000	2.2171	2.2171	3.0000e-005	3.5000e-004	2.3220
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.0000e-005	3.9000e-003	6.0000e-004	2.0000e-005	7.5000e-004	5.0000e-005	8.0000e-004	2.1000e-004	5.0000e-005	2.6000e-004	0.0000	2.2171	2.2171	3.0000e-005	3.5000e-004	2.3220

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Valve delivery to sites - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8000e-004	1.5400e-003	2.3100e-003	0.0000		8.0000e-005	8.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.3116	0.3116	1.0000e-004	0.0000	0.3141
Total	1.8000e-004	1.5400e-003	2.3100e-003	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	7.0000e-005	7.0000e-005	0.0000	0.3116	0.3116	1.0000e-004	0.0000	0.3141

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	3.9000e-003	6.0000e-004	2.0000e-005	7.5000e-004	5.0000e-005	8.0000e-004	2.1000e-004	5.0000e-005	2.6000e-004	0.0000	2.2171	2.2171	3.0000e-005	3.5000e-004	2.3220
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.0000e-005	3.9000e-003	6.0000e-004	2.0000e-005	7.5000e-004	5.0000e-005	8.0000e-004	2.1000e-004	5.0000e-005	2.6000e-004	0.0000	2.2171	2.2171	3.0000e-005	3.5000e-004	2.3220

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Unrefrigerated Warehouse-No Rail	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.7764	3.7764	3.2000e-004	4.0000e-005	3.7959
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.7764	3.7764	3.2000e-004	4.0000e-005	3.7959
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	21294	3.7764	3.2000e-004	4.0000e-005	3.7959
Total		3.7764	3.2000e-004	4.0000e-005	3.7959

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	21294	3.7764	3.2000e-004	4.0000e-005	3.7959
Total		3.7764	3.2000e-004	4.0000e-005	3.7959

6.0 Area Detail

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Unmitigated	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003
Total	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7300e-003	1.7300e-003	0.0000	0.0000	1.8400e-003

7.0 Water Detail

7.1 Mitigation Measures Water

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

PCCP Valve Storage Building - Operation

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	18.20	1000sqft	0.42	18,200.00	0
Other Asphalt Surfaces	51.32	1000sqft	1.18	51,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This model includes PCCP valve transport to storage building, valve inspection, and valve delivery to final site. On-road trips and off-road equipment are in the construction section. Operational section only includes building lighting.

Land Use -

Construction Phase - Valves delivered/inspected from port over 2 days.

Valves delivered to final sites, 1 per day over 11 days.

Off-road Equipment - Pre-engineered steel structure. Equipment per project engineers.

Off-road Equipment - Taylor T-4030 forklift (160 HP diesel) for unloading.

Off-road Equipment - Taylor T-4030 forklift (160 HP diesel) for loading.

Trips and VMT - Workers assumed to be from existing facility (no new worker trips), 2 trips/day for inspector.

22 trips for valves assuming 1 valve per truck.

58 miles Port of Long Beach to Lake Mathews

79 miles longest anticipated final deliver distance.

Grading -

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - No operational trips.

Consumer Products - No consumer products or parking degreaser.

Area Coating - prepainted building.

Energy Use - Lighting energy only.

Water And Wastewater - No water/wastewater use.

Solid Waste - No solid waste.

Construction Off-road Equipment Mitigation -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	PhaseEndDate	1/5/2023	1/18/2023
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	1.98	0.00
tblOffRoadEquipment	HorsePower	89.00	160.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblSolidWaste	SolidWasteGenerationRate	17.11	0.00
tblTripsAndVMT	HaulingTripLength	20.00	58.00
tblTripsAndVMT	HaulingTripLength	20.00	79.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00
tblTripsAndVMT	HaulingTripNumber	0.00	22.00

PCCP Valve Stroage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	4,208,750.00	0.00

2.0 Emissions Summary

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.1844	4.1178	2.3538	0.0198	0.5802	0.1007	0.6809	0.1588	0.0941	0.2529	0.0000	2,089.250 2	2,089.250 2	0.1117	0.2849	2,176.927 3
Maximum	0.1844	4.1178	2.3538	0.0198	0.5802	0.1007	0.6809	0.1588	0.0941	0.2529	0.0000	2,089.250 2	2,089.250 2	0.1117	0.2849	2,176.927 3

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.1844	4.1178	2.3538	0.0198	0.5802	0.1007	0.6809	0.1588	0.0941	0.2529	0.0000	2,089.250 2	2,089.250 2	0.1117	0.2849	2,176.927 3
Maximum	0.1844	4.1178	2.3538	0.0198	0.5802	0.1007	0.6809	0.1588	0.0941	0.2529	0.0000	2,089.250 2	2,089.250 2	0.1117	0.2849	2,176.927 3

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5000e-004	6.0000e-005	7.0900e-003	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005	0.0000	0.0162

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5000e-004	6.0000e-005	7.0900e-003	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005	0.0000	0.0162

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Valve delivery and inspection	Site Preparation	1/2/2023	1/3/2023	5	2	
2	Valve delivery to sites	Site Preparation	1/4/2023	1/18/2023	5	11	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 1.18****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Valve delivery and inspection	Forklifts	1	8.00	160	0.20
Valve delivery to sites	Forklifts	1	2.00	150	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Valve delivery and inspection	1	2.00	0.00	22.00	14.70	6.90	58.00	LD_Mix	HDT_Mix	HHDT
Valve delivery to sites	1	0.00	0.00	22.00	14.70	6.90	79.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Valve delivery and inspection - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1375	1.1921	1.7947	2.7500e-003		0.0624	0.0624		0.0574	0.0574		266.4489	266.4489	0.0862		268.6033
Total	0.1375	1.1921	1.7947	2.7500e-003	0.0000	0.0624	0.0624	0.0000	0.0574	0.0574		266.4489	266.4489	0.0862		268.6033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0400	2.9211	0.4996	0.0169	0.5579	0.0382	0.5961	0.1529	0.0366	0.1895		1,804.5671	1,804.5671	0.0250	0.2844	1,889.9353
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8500e-003	4.6800e-003	0.0596	1.8000e-004	0.0224	1.0000e-004	0.0225	5.9300e-003	1.0000e-004	6.0300e-003		18.2342	18.2342	4.6000e-004	4.8000e-004	18.3888
Total	0.0469	2.9258	0.5592	0.0171	0.5802	0.0383	0.6186	0.1588	0.0367	0.1955		1,822.8013	1,822.8013	0.0255	0.2849	1,908.3240

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Valve delivery and inspection - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1375	1.1921	1.7947	2.7500e-003		0.0624	0.0624		0.0574	0.0574	0.0000	266.4489	266.4489	0.0862		268.6033
Total	0.1375	1.1921	1.7947	2.7500e-003	0.0000	0.0624	0.0624	0.0000	0.0574	0.0574	0.0000	266.4489	266.4489	0.0862		268.6033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0400	2.9211	0.4996	0.0169	0.5579	0.0382	0.5961	0.1529	0.0366	0.1895		1,804.567 1	1,804.567 1	0.0250	0.2844	1,889.935 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8500e-003	4.6800e-003	0.0596	1.8000e-004	0.0224	1.0000e-004	0.0225	5.9300e-003	1.0000e-004	6.0300e-003		18.2342	18.2342	4.6000e-004	4.8000e-004	18.3888
Total	0.0469	2.9258	0.5592	0.0171	0.5802	0.0383	0.6186	0.1588	0.0367	0.1955		1,822.801 3	1,822.801 3	0.0255	0.2849	1,908.324 0

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Valve delivery to sites - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0322	0.2794	0.4206	6.5000e-004		0.0146	0.0146		0.0135	0.0135		62.4490	62.4490	0.0202		62.9539
Total	0.0322	0.2794	0.4206	6.5000e-004	0.0000	0.0146	0.0146	0.0000	0.0135	0.0135		62.4490	62.4490	0.0202		62.9539

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.0800e-003	0.7077	0.1100	4.1600e-003	0.1381	9.4600e-003	0.1476	0.0379	9.0500e-003	0.0469		444.4655	444.4655	6.1500e-003	0.0700	465.4916
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.0800e-003	0.7077	0.1100	4.1600e-003	0.1381	9.4600e-003	0.1476	0.0379	9.0500e-003	0.0469		444.4655	444.4655	6.1500e-003	0.0700	465.4916

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Valve delivery to sites - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0322	0.2794	0.4206	6.5000e-004		0.0146	0.0146		0.0135	0.0135	0.0000	62.4490	62.4490	0.0202		62.9539
Total	0.0322	0.2794	0.4206	6.5000e-004	0.0000	0.0146	0.0146	0.0000	0.0135	0.0135	0.0000	62.4490	62.4490	0.0202		62.9539

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.0800e-003	0.7077	0.1100	4.1600e-003	0.1381	9.4600e-003	0.1476	0.0379	9.0500e-003	0.0469		444.4655	444.4655	6.1500e-003	0.0700	465.4916
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.0800e-003	0.7077	0.1100	4.1600e-003	0.1381	9.4600e-003	0.1476	0.0379	9.0500e-003	0.0469		444.4655	444.4655	6.1500e-003	0.0700	465.4916

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Unrefrigerated Warehouse-No Rail	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - Natural Gas****Unmitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Unmitigated	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Total	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162

PCCP Valve Storage Building - Operation - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162
Total	6.5000e-004	6.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0152	0.0152	4.0000e-005		0.0162

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

FINAL



Programmatic Environmental Impact Report for the

Prestressed Concrete Cylinder Pipe Rehabilitation Program

SCH No. 2014121055



DECEMBER 2016



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

Metropolitan Report No. 1527

PRESTRESSED CONCRETE CYLINDER PIPE REHABILITATION PROGRAM FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

PREPARED FOR:

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December 2016

ICF International. 2016. Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report. December. (ICF 52.14.) Irvine, CA. Prepared for Metropolitan Water District of Southern California, Los Angeles, California.

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Acronyms and Abbreviations

AQMP	air quality management plan
ALUP	airport land use plan
AWWA	American Water Works Association
AB	Assembly Bill
dba	A-weighted decibels
BMPs	best management practices
BAU	business-as-usual
ARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CBC	California Building Code
CCR	California Code of Regulations
DOC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CO	carbon monoxide
CAA	Clean Air Act
CWA	Clean Water Act
Central Basin	Coastal Plain of Los Angeles Groundwater Basin
CFR	Code of Federal Regulations
CE	Commuter Express
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMA	Congestion Management Agency
CMP	Congestion Management Program
CMPHS	Congestion Management Program Highway System
dB	decibels

DPM	diesel exhaust particulate matter
DAMP	Drainage Area Master Plan
EC-PCCP	embedded-cylinder prestressed concrete pipe
EDR	Environmental Data Resources
EIR	environmental impact report
EO	Executive Order
FMMP	Farmland Mapping and Monitoring Program
FESA	federal Endangered Species Act
Construction General Permit	General Permit for Stormwater Discharges Associated with Construction Activity
GWP	global warming potential
GHG	greenhouse gas
HCP	Habitat Conservation Plan
HCM	Highway Capacity Manual
HFCs	hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
ICU	Intersection Capacity Utilization
I	Interstate
I-105	Interstate 105
I-110	Interstate 110
I-15	Interstate 15
I-210	Interstate 210
I-215	Interstate 215
I-405	Interstate 405
I-5	Interstate 5
I-605	Interstate 605
I-710	Interstate 710
kWh	kilowatts per hour
Pb	lead
LOS	level of service
LC-PCCP	lined-cylinder prestressed concrete pipe
LIP	Local Implementation Plan
LST	localized significance threshold
LBT	Long Beach Transit
MTA	Los Angeles County Metropolitan Transportation Authority
LADOT	Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power

LID	Low-Impact Development
MEP	maximum extent practicable
CH ₄	methane
MPO	Metropolitan Planning Organization
Metropolitan	Metropolitan Water District of Southern California
µg/m ³	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
MMTCO ₂ e	million metric tons of carbon dioxide
MSHCP	Multi-species Habitat Conservation Plan
MS4 Permit	Municipal Separate Storm Sewer Systems
MWDOC	Municipal Water District of Orange County
NAAQS	National Ambient Air Quality Standards
NCP	National Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NO	nitric oxide
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
N ₂ O	nitrous oxide
<u>NOC</u>	<u>Notice of Completion</u>
NOI	Notice of Intent
NOP	Notice of Preparation
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
O ₃	ozone
ppm	part per million
PM ₁₀	particulate matter 10 microns or less in diameter
PM _{2.5}	particulate matter 2.5 microns or less in diameter
ppb	parts per billion
ppm	parts per million
PFCs	perfluorocarbons
psi	pound per square inch
PCS	Pressure Control Structure

PCCP	Pre-Stressed Concrete Cylinder Pipe
proposed program	Prestressed Concrete Cylinder Pipe Rehabilitation Program
Important Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
PEIR	Program Environmental Impact Report
PRC	Public Resources Code
ROG	reactive organic gas
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
RCRA	Resource Conservation and Recovery Act
Diemer Plant	Robert B. Diemer Water Treatment Plant
Omnitrans	San Bernardino County Public Transit
SRA	Seismic Response Area
SB	Senate Bill
SRAs	source receptor area
Basin	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SUSMP	Standard Urban Stormwater Management Plan
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SR	State Route
SR-118	State Route 118
SR-133	State Route 133
SR-241	State Route 241
SR-261	State Route 261
SR-27	State Route 27
SR-55	State Route 55
SR-57	State Route 57
SR-83	State Route 83
SR-90	State Route 90
SR-91	State Route 91
SWP	State Water Project
SWRCB	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
SO ₂	sulfur dioxide
SF ₆	sulphur hexafluoride

TT	Torrance Transit
TMDL	total maximum daily load
TAC	toxic air contaminant
TIA	Traffic Impact Analysis
EPA	U.S. Environmental Protection Agency
US-101	U.S. Highway 101
VMТ	vehicle miles traveled
VOC	volatile organic compounds
WDRs	waste discharge requirements
WPCP	Water Pollution Control Plan
Basin Plan	water quality control plan
WQMP	water quality management plan

Chapter 1

Summary

1.1 Introduction

This chapter provides a summary of this Programmatic Environmental Impact Report (PEIR) for implementation of the Metropolitan Water District of Southern California's (Metropolitan) proposed Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed Program).¹

Metropolitan is the lead agency under the California Environmental Quality Act (CEQA). This PEIR has been prepared in accordance with CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the Guidelines for Implementation of CEQA (State CEQA Guidelines) published by the Public Resources Agency of the State of California (California Code of Regulations [CCR], Title 14, Section 15000 et seq.).

This chapter highlights the major areas of importance in the environmental analysis for the proposed ~~program project~~ as required by State CEQA Guidelines Section 15123. It provides a brief description of the proposed program, a description of objectives and features of the proposed program, and a discussion of alternatives to the proposed program. In addition, this chapter includes a table summarizing: (1) the direct impacts that would occur from implementation of the proposed program; (2) the level of impact significance before mitigation; (3) the recommended mitigation measures that would avoid or reduce significant environmental impacts; (4) the level of impact significance after mitigation measures are implemented; and (5) whether or not additional environmental analysis is necessary before the program components can proceed to construction.

1.2 Program Description

Between 1962 and 1985, 163 miles of PCCP were installed throughout Metropolitan's service area. Under certain subsurface conditions, PCCP lines have an elevated risk of failure compared with other types of pipe. In response to this risk of failure, in the late 1990s, Metropolitan developed a program to inspect and assess all 163 miles of PCCP within its distribution system. In 2011, Metropolitan initiated a comprehensive program of inspections to evaluate and rank PCCP lines with the highest risk of failure. The data indicate that the following five pipelines represent the highest risk: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder.

Under the proposed program, Metropolitan would rehabilitate subsurface water distribution pipelines (also known as feeders²). Metropolitan is proposing to rehabilitate the PCCP portions of the five pipelines within its service area that were identified as having the highest risk as described above.

¹ The Notice of Preparation described this document as was for a combined PEIR and project-level EIR for the Second Lower Feeder. The project-level analysis is no longer a part of this PEIR. Project-level analysis will be provided at a later date.

² A feeder and a pipeline are equivalent. Unless referring to the formal name, *pipeline* will be used throughout this document.

1.2.1 Program Objectives

The proposed program is designed to maintain the reliability of Metropolitan's distribution system. The proposed program would minimize risks associated with failures by proactively rehabilitating each portion of PCCP, starting with the pipes that show the greatest risk of failure. This would help Metropolitan avoid possible unplanned system outages, thereby increasing service reliability for all customers within Metropolitan's service area.

The following are the objectives of the proposed ~~project~~ and program.

- Reduce the risk of unplanned outages
- Extend the service life of the pipelines
- Perform the rehabilitation work in a cost-effective manner
- Minimize the effects of rehabilitation efforts on Member Agency deliveries
- Minimize the loss of hydraulic capacity due to rehabilitation
- Improve system operational and emergency flexibility

1.2.2 Location

The proposed program would rehabilitate subsurface water distribution pipelines, which are located primarily in Metropolitan-owned rights-of-way and existing public roads. The pipelines that would be rehabilitated extend through the following cities and counties.

Allen-McColloch Pipeline

- | | | |
|-----------------|---------------|----------|
| • Anaheim | • Lake Forest | • Irvine |
| • Mission Viejo | • Orange | |
| • Tustin | • Yorba Linda | |

Calabasas Feeder

- | | | |
|-------------|----------------|---------------|
| • Calabasas | • Hidden Hills | • Los Angeles |
|-------------|----------------|---------------|

Rialto Pipeline

- | | | |
|--------------------|-----------|--|
| • Claremont | • Fontana | • La Verne |
| • Rancho Cucamonga | • Rialto | • San Bernardino |
| • San Dimas | • Upland | • Unincorporated San Bernardino County |

Second Lower Feeder

- | | | |
|---------------|-------------------------------------|--------------------------------|
| • Anaheim | • Buena Park | • Carson |
| • Cypress | • Lakewood | • Lomita |
| • Long Beach | • Los Alamitos | • Los Angeles |
| • Placentia | • Rolling Hills Estates | • Torrance |
| • Yorba Linda | • Unincorporated Los Angeles County | • Unincorporated Orange County |

Sepulveda Feeder

- Culver City
- Gardena
- Hawthorne
- Inglewood
- Los Angeles
- Torrance

1.2.3 Components

This section briefly describes the multiple components that compose the proposed program. More details for each of the components can be found in Chapter 3, *Program Description*. The proposed program consists primarily of pipeline rehabilitation and rehabilitation of other facilities along the pipeline, such as equipment vaults, valves, and other appurtenances. For pipelines, the term “rehabilitation” is used to describe either relining of the pipe or installation of supplemental or relocated lines. For vaults, valves, and other appurtenant structures, the term “rehabilitation” is used to describe either refurbishment or replacement.

The proposed program would consist primarily of rehabilitating the PCCP portions of the pipelines by lining them with steel. New liner segments would be inserted into existing PCCP pipelines by cutting into the existing pipelines, moving the new liner segments into position to reline the PCCP sections, and welding together the new liner segments. The cut sections of the PCCP would be encased in concrete after the new liner segments are welded together.

In some cases, it may be necessary to relocate existing PCCP with welded steel pipe in lieu of using steel liners to rehabilitate the PCCP. Portions of the PCCP would be left in place and new steel pipeline segments would be used. Relocation would involve excavating an open trench along the length of the existing pipeline or in an appropriate location in the vicinity of the existing pipeline, placing bedding for the new pipe to sit upon, and installing the new pipe. The dimensions of the open trench and the amount of soil that would be excavated would correspond to the depth and diameter of the new pipe. After installation the pipe trench is backfilled and the surface is restored.

Pipeline systems typically include equipment vaults that house water meters, isolation valves, check valves, bypass valves, back-flow preventer valves, and pressure-reducing valves. Equipment vaults are buried rectangular concrete structures that can be accessed from street level to perform maintenance and repairs. Existing vaults and the equipment inside them would be upgraded as part of the rehabilitation work.

Manholes typically provide access for maintenance and repairs and are spaced at regular intervals along the pipelines. The proposed program would retain the existing manholes and construct new manholes as needed to maintain access to buried vault structures and to the pipeline.

Air release/vacuum valves allow air into or out of the pipeline during dewatering or filling of pipe to control air pressure in the pipe. As part of the program, below-ground air valves along the pipeline would be relocated above ground to prevent potential cross-connection. Pumpwells and blowoff structures would be used to dewater pipelines prior to rehabilitation, some of which would be new. These would also be located within the underground equipment vaults. Electrical panels would be provided as part of the program, located in small enclosures along the pipelines.

1.3 Scope of the PEIR

1.3.1 Environmental Issue Areas Evaluated

The proposed program was initially evaluated through the Initial Study Checklist (Appendix A). The environmental analyses in Sections 4.2 through 4.14 include a detailed discussion and impact determination for the issue areas that were determined to have a potentially significant impact in the Initial Study Checklist. Metropolitan determined that a PEIR was necessary to address these potentially significant issues. The environmental issue areas for the proposed program evaluated in this PEIR include:

- Aesthetics
- Agriculture
- Air quality
- Biological resources
- Cultural resources
- Geology and soils
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Noise
- Recreation
- Transportation and traffic
- Utilities and service systems

1.3.2 Program-Level Analysis

A program-level analysis generally evaluates the broad environmental effects of the program with the understanding that additional project-specific environmental review may be required for particular projects covered under the program. A project-specific environmental review is typically performed at the time projects are proposed for implementation and construction. A project-level analysis generally includes the necessary construction information and analyzes the specific environmental effects of the project elements.

This PEIR evaluates the rehabilitation activities of the five PCCP pipelines at a program level because design-specific information for each pipeline is not currently known and the timing of the individual rehabilitation efforts is still to be determined. Enough information is known, however, to evaluate the broad environmental effects of activities that could occur. In most cases, typical construction scenarios have been defined for the individual rehabilitation scenarios, allowing analysis of typical impacts that would result during rehabilitation. This PEIR identifies potential impacts of rehabilitation as follows.

- Impacts that can be known at the time of analysis and that would be less than significant under the typical construction scenarios. Where this is the case, no mitigation would be necessary and no further analysis would be needed before rehabilitation takes place, as long as that rehabilitation is consistent with the typical construction scenarios.
- Impacts that can be known at the time of analysis and would be significant under the typical construction scenarios, but where mitigation is available to reduce these impacts to less-than-significant levels. Where this is the case, no further analysis would be needed before rehabilitation takes place, as long as the rehabilitation is consistent with the typical construction scenarios and the identified mitigation is implemented as part of the rehabilitation.

- Impacts that can be known at the time of analysis and would be significant under the typical construction scenarios, but where mitigation is not available or mitigation could not reduce these impacts to less-than-significant levels. Where this is the case, no further analysis would be needed before rehabilitation takes place, as long as the rehabilitation is consistent with the typical construction scenarios and any identified mitigation is implemented as part of the rehabilitation.
- Impacts that cannot be known at the time of analysis (due to insufficient construction information) or where the location, timing, or severity of the impacts cannot be known. Where this is the case ~~project specific additional~~ environmental analysis ~~may will~~ be necessary before rehabilitation can take place, which would be documented in the appropriate project-level CEQA document(s). This PEIR identifies the additional analysis that ~~may would~~ be necessary.

1.4 Areas of Known Controversy

Metropolitan circulated a Notice of Preparation (NOP) and Initial Study Checklist to various agencies and other interested parties to disclose the proposed program and scope the environmental topics to be analyzed in this PEIR. As a result of the scoping period, several letters, emails, and correspondence were received that highlighted common topics. These topics are listed below. See Chapter 2, *Introduction*, for a summary of comments received during the NOP scoping period and where they are addressed within this PEIR.

- Concerns regarding traffic and circulation during rehabilitation activities as a result of activities primarily occurring within streets and public rights-of-way.
- Concerns regarding air quality during rehabilitation activities as a result of multiple pieces of construction equipment running at the same time and the concurrent overlap of rehabilitation activities.
- Concerns regarding noise during rehabilitation activities as a result of the use of large equipment and possible 24-hour construction.
- Concerns regarding sensitive habitat and species as a result of potential disturbance during rehabilitation activities.

Metropolitan filed a Notice of Completion (NOC) and circulated the Draft PEIR on September 1, 2016, starting the required 45-day comment period. Metropolitan received one letter after the comment period closed and no new areas of controversy were identified. (See Chapter 9, *Comment on Draft PEIR and Responses*.)

1.5 Alternatives Considered and Issues to be Resolved

Alternatives are analyzed in Chapter 5, *Alternatives*, of this PEIR. The objective of the alternatives analysis is to consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. The proposed PCCP Rehabilitation Program includes various methods of rehabilitation, including relining with collapsible pipe, relining with non-

collapsible pipe, and replacing the piping. A number of alternatives were previously identified and subjected to screening analysis as part of the inspection, evaluation, and ranking process. All of the alternatives for the proposed program were rejected as infeasible and would not meet the basic proposed program objectives, especially the primary objective to reduce the risk of pipeline failure.

As required by CEQA, a No Program Alternative is evaluated in the alternatives analysis for the PEIR. This evaluation compares the impacts of the proposed program to those that would occur if no rehabilitation program was approved. Under the No Program Alternative, rehabilitation would still need to occur because the pipelines and feeders would continue to age. Metropolitan would need to prevent failures through localized and as-needed improvements, but under the No Program Alternative these activities would not occur as part of a planned program. Much of this rehabilitation would thus occur as “urgent repairs” because of the lack of a systematic planning offered by the proposed program.

Because the No Program Alternative would eventually require the same types of repairs and rehabilitation of the five pipelines as the proposed program, and because these repairs would occur without preplanning and scheduling and often as urgent repairs, the ability to locate excavations and other rehabilitation work in a manner that avoids impacts may be lessened. Therefore, impacts under the No Program Alternative would be the same or greater than the impacts of the proposed program.

1.6 Summary of Environmental Impacts

Table 1-1 provides a summary of the environmental impacts that could result from implementation of the proposed program, and feasible mitigation measures that could reduce or avoid environmental impacts. For each impact, Table 1-1 identifies the significance of the impact prior to and following implementation of mitigation measures.

Table 1-1. Potential Impacts of Proposed PCCP Rehabilitation Program

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
4.1 Aesthetics				
Threshold AES-A: Have a Substantial Adverse Effect on a Scenic Vista	Less than significant	None	Less than significant	No
Threshold AES-B: Substantially Damage Scenic Resources, Including, but not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway	Less than significant	None	Less than significant	No
Threshold AES-C: Substantially Degrade the Existing Visual Character or Quality of the Site and Its Surroundings	Less than significant	None	Less than significant	No
Threshold AES-D: Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area	Significant	MM AES-1: In order to prevent impacts related to spillover lighting into light-sensitive land uses, all safety and security lighting at construction work areas and staging areas will be directed downward and shielded to avoid light spilling over into residential areas.	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
4.2 Agriculture and Forestry Resources³				
Threshold AGR-A: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) to Non-Agricultural Use	Less than significant	None	Less than significant	No
Threshold AGR-E: Involve Other Changes in the Existing Environment that, Because of Their Location or Nature, Could Result in the Conversion of Farmland to Non-Agricultural Use	Less than significant	None	Less than significant	No
4.3 Air Quality				
Threshold AQ-A: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Significant	MM AIR-1: All off-road diesel-powered construction equipment greater than 50 horsepower will meet Tier 4 emission standards. All construction equipment will be outfitted with ARB best available control technology devices. Any emissions-control device used by the contractor will achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. A copy of each unit's certified tier specification, best available control technology	Significant and unavoidable	Yes

³ CEQA thresholds b, c, and d for agriculture and forestry resources were determined to be less than significant in the Initial Study and were not addressed in this PEIR.

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		documentation, and ARB or SCAQMD operating permit will be provided to <u>Metropolitan's Construction Inspector</u> at the time of mobilization of each applicable unit of equipment.		
Threshold AQ-B: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation	Significant	MM AIR-1: (see above)	Significant and unavoidable	Yes
Threshold AQ-C: Result in a Cumulatively Considerable Net Increase in Any Criteria Pollutant for Which the Region Is in Non-Attainment under an Applicable Federal or State Ambient Air Quality Standard	Significant	MM AIR-1: (see above)	Significant and unavoidable	Yes
Threshold AQ-D: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Significant	MM AIR-1: (see above)	Significant and unavoidable	Yes
4.4 Biological Resources				
Threshold BIO-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	Potentially significant; to be determined at project level	MM BIO-1, Take of Special-Status Species: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved	Potentially significant and unavoidable; to be determined at project level	Yes, for projects that would require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service		<p>areas (except for landscaped developed areas) and that contain special-status species, a qualified biologist will visit the site to determine if any special-status species have the potential to occur on the site. If the biologist determines that special-status species may occur, preconstruction surveys for special-status plants and/or wildlife will be completed prior to any construction and consultation with the appropriate resource agency will occur (U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife), if necessary, to determine measures to address impacts such as avoidance, minimization, restoration, or compensation.</p> <p>MM BIO-2, Impacts on Nesting Birds: For any projects within the program that require vegetation removal during the nesting season for sensitive species protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3513, including street trees and other landscaping, a qualified biologist will inspect the vegetation to be removed no more than 10 days prior to tree/vegetation removal to determine whether nesting birds are present. If a nest is found, the biologist will determine the site-specific measures necessary to avoid disturbing the nest until nesting activity has ceased, including avoidance of the nest and establishment of an adequate buffer.</p>		unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas).

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		Construction within the buffer area will not occur until the biologist has verified that nesting activity has ceased. Nothing in this mitigation measure precludes the use of deterrent measures to prevent bird nesting.		
Threshold BIO-B: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	Potentially significant; to be determined at project level	<p>MM BIO-3, Adverse Impacts on Riparian Habitat: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) <u>which contain riparian vegetation</u>, a qualified biologist will visit the site to <u>conduct pre-construction surveys</u> determine if any riparian habitat is present at the site. If the biologist determines that riparian vegetation is present, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken, <u>including applying for appropriate regulatory permits, as required to protect the habitat, as appropriate.</u></p> <p>MM BIO-4: Adverse Impacts on Sensitive Natural Communities: Removal of or adverse impacts on sensitive natural communities will be minimized for rehabilitation projects in the program, except in accordance with</p>	Potentially significant and unavoidable; to be determined at project level	Yes, for projects that would require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas)

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>adopted HCPs/NCCPs to which Metropolitan is a party for covered areas and covered activities. For such covered activities, Metropolitan will coordinate with the appropriate resource agencies and Metropolitan's contractors will adhere to all requirements in the applicable plan. For any activities not covered by an adopted HCP/NCCP, the following shall apply:</p> <p>For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) <u>and that contain sensitive natural communities</u>, a qualified biologist will <u>conduct pre-construction surveys</u> visit the site to determine if any sensitive natural communities may be present at the site. If the biologist determines that such communities may be present, <u>preconstruction surveys</u> for sensitive natural communities will be required prior to any construction. These surveys will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. If sensitive natural communities are located during the surveys, then habitat areas will be mapped and flagged for</p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		avoidance, or other measures will be taken <u>including applying for appropriate regulatory permits, as required to protect the habitat.</u>		
Threshold BIO-C: Have a Substantial Adverse Effect on Federally Protected Wetlands, as Defined by Section 404 of the Clean Water Act, through Direct Removal, Filling, Hydrological Interruption, or Other Means	Potentially significant; to be determined at project level	MM BIO-5, Adverse Impacts on Wetlands: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (including large landscaped areas, parks, and golf courses), <u>which contain wetlands</u> , a qualified biologist will visit the site to <u>conduct pre-construction surveys determine if wetlands may be present at the site.</u> If the biologist determines that wetlands may be present, preconstruction wetlands jurisdictional delineations will be required <u>performed</u> prior to any construction. These delineations will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. Any jurisdictional wetlands located during the delineations will be mapped and flagged for avoidance <u>or other measures may be taken, including applying for appropriate regulatory permits, as required or other measures will be taken to protect the habitat, as necessary.</u>	Potentially significant and unavoidable; to be determined at project level	Yes, for projects that would require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas).
Threshold BIO-D:	Potentially significant; to	MM BIO-6, Impacts on Wildlife	Potentially significant	Yes, for projects

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
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	be determined at project level	Movement: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas), a qualified biologist will visit the site to determine if any identifiable wildlife movement corridors are present at the site. If the biologist determines that such corridors are present, then wildlife movement corridors will be mapped, flagged, and avoided, or other measures will be taken to protect wildlife movement, as appropriate.	and unavoidable; to be determined at project level	that would require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas)
Threshold BIO-E: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance	Potentially significant	MM BIO-7, Conflicts with Local Policies Related to Biological Resources: For any projects within the program that require vegetation removal, Metropolitan will determine if there are any applicable local policies related to biological resources and, if so, coordinate consult with the affected jurisdiction, as necessary, to determine appropriate requirements for vegetation removal and replacement. The contractor will be required to comply with any applicable requirements. Nothing in this mitigation will require the contractor to make improvements beyond the	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		existing condition prior to construction.		
Threshold BIO-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	Potentially significant; to be determined at project level	To be determined at project level.	Potentially significant and unavoidable; to be determined at project level	Yes, for project within the covered areas of an HCP or NCCP
4.5 Cultural Resources				
Threshold CUL-A: Cause a Substantial Adverse Change in the Significance of a Historical Resource	Potentially significant	MM CUL-1, Historic Resources Protection Program: To avoid impacts on built environment (historic) resources, prior to any rehabilitation involving excavation or concrete cutting, <u>a qualified cultural resource specialist or architectural historian</u> will be retained to determine whether there are any identified or eligible historical resources present and <u>whether to determine if</u> proposed construction activities could adversely affect these resources. If any resources could be adversely affected by construction, <u>the excavation site will be moved or other measures will be taken</u> used to prevent adverse impacts on the resource, as determined by the <u>qualified cultural resource specialist or architectural historian</u> .	Less than significant	Yes, for projects involving excavation or concrete cutting
Threshold CUL-B: Cause a Substantial Adverse Change in the Significance of an Archaeological	Potentially significant	MM CUL-2, Avoidance or Monitoring of Archaeological Sites: To avoid impacts on archaeological sites, prior to construction of any program element, such as pipeline alignments,	Less than significant	Yes

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Resource		<p>construction staging areas, laydown areas, or relocation of pipelines in new alignments, a new record search will be conducted to determine if additional sites or resources have been recorded on or adjacent to the proposed construction section. Reports will be examined to determine the condition of each site when recorded, if the site has been evaluated, and if destruction of the site is documented. Following this review, recorded archaeological sites that are within the pipeline route will be surveyed and their present conditions assessed (see MM CUL-4). Archaeological monitoring will be required during construction-related ground-disturbing activities if within the recorded area of a significant or potentially significant site and for a 50-foot buffer beyond the site boundary. A Native American monitor may be present if the site is prehistoric. If archaeological materials are discovered during monitoring, procedures outlined in MM CUL-43 will be implemented. If it can be demonstrated that the site has been destroyed by previous construction or other actions and there is no potential for other buried parts of the site within the construction area, or if the site has been evaluated and determined not eligible for the CRHR, then monitoring will not be required.</p> <p>MM CUL-3, Preconstruction Meeting for Identifying Cultural Resources:</p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>To avoid impacts on previously unidentified cultural resources, all construction personnel will attend a preconstruction meeting that includes a discussion of cultural resources. The meeting will inform construction personnel on how to identify potential cultural resources during ground-disturbing activities and what to do if such potential resources are encountered.</p> <p>MM CUL-4, Previously Unidentified Resources Encountered during Ground-disturbing Activities: In the event that any potentially significant cultural resources are unexpectedly encountered during construction, work will be immediately halted and the discovery shall be protected in place. The contractor will halt construction within 50 feet of the exposed resource until a qualified cultural resources specialist evaluates the discovery. If the qualified cultural resources specialist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. This additional work may include avoidance, testing, and evaluation or data recovery excavation. Work shall be prohibited in the restricted area until Metropolitan provides written authorization.</p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		MM CUL-5, Archaeological Survey of Non-Pipeline Areas: Prior to rehabilitation activities of any program element each area will be subject to pedestrian survey for archaeological resources by a professional archaeologist retained by Metropolitan if ground-disturbing activities are slated to occur. If archaeological sites are recorded or found in these affected areas, the sites will be avoided to the greatest extent feasible. If a site cannot be avoided, site testing and evaluation by a professional archaeologist will be required. This may require test excavations, artifact analysis, evaluation for the CRHR and review by SHPO, and possibly data recovery excavation and reporting.		
Threshold CUL-C: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature	Potentially significant	MM CUL-6, Develop a Program to Mitigate Impacts on Paleontological Resources for Each Contract Package: In order to avoid impacts on paleontological resources, the following mitigation program will be implemented for each contract package. This mitigation program will be conducted by a qualified professional paleontologist and will be consistent with the provisions of CEQA. This program will include the following: 1. Assessment of site-specific excavation areas to determine those <u>areas</u> that may be designated	Less than significant	Yes

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>as highly sensitive for unique paleontological resources to be monitored during ground disturbance.</p> <p>2. Development of a monitoring plan for these designated areas. <u>Paleontological In these designated areas, if any, paleontological</u> resources monitors qualified to Society of Vertebrate Paleontology standards will be equipped to salvage fossils as they are unearthed and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitoring may be reduced or eliminated if some of the potentially fossiliferous units are determined upon exposure and examination by qualified paleontological resources personnel to have low potential to contain fossil resources. <u>Also in these designated areas, all unique paleontological resources, if any, will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates.</u></p> <p>3. Preparation of all unique paleontological resources to a point of identification and permanent preservation, including washing of sediments to recover</p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>small invertebrates and vertebrates. Identification and curation of unique <u>Unique</u> paleontological resources, if any, will be identified and curated into an established, accredited museum repository will be required.</p> <p>4. Preparation of a report of findings including a summary of field work and laboratory methods, an overview of the program work area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, a copy of the report will also be submitted to the designated museum repository.</p>		
4.6 Geology and Soils⁴				
Threshold GEO-A.I: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault	Less than significant	None	Less than significant	No
Threshold GEO-A.II: Expose People or Structures to Potential	Less than significant	None	Less than significant	No

⁴ CEQA threshold e for geology and soils was determined to be less than significant in the Initial Study and were not addressed in this PEIR.

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Strong Seismic Groundshaking				
Threshold GEO-A.III: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Seismically Related Ground Failure, Including Liquefaction	Less than significant	None	Less than significant	No
Threshold GEO-A.IV: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Landslides	Less than significant	None	Less than significant	No
Threshold GEO-B: Result in Substantial Soil Erosion or the Loss of Topsoil	Less than significant	None	Less than significant	No
Threshold GEO-C: Be Located on a Geologic Unit or Soil that Is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse	Less than significant	None	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Threshold GEO-D: Be Located on Expansive Soil, Creating Substantial Risks to Life or Property	Less than significant	None	Less than significant	No
4.7 Greenhouse Gas Emissions				
Threshold GHG-A: Generate Greenhouse Gas Emissions, either Directly or Indirectly, that May Have a Significant Impact on the Environment	Significant	MM-AIR-1: (see above, under 4.3, Air Quality)	Significant and unavoidable	Yes
Threshold GHG-B: Conflict with Any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	Less than significant	None	Less than significant	No
4.8 Hazards and Hazardous Materials				
Threshold HAZ-A: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials	Less than significant	None	Less than significant	No
Threshold HAZ-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	Less than significant	None	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
the Environment				
Threshold HAZ-C: Emit Hazardous Emissions or Involve Handling Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School	Potentially significant	MM HAZ-1, Project-Level Hazardous Materials Sites Assessment Prior to Construction Activities: To avoid exposure of construction workers, the public, or the environment to previously identified hazardous materials, during design, <u>qualified Metropolitan staff or consultant(s) will retain a professional environmental consultant specializing in hazardous materials impact assessment will to</u> conduct a project-level analysis to determine if there are existing hazardous materials sites in the vicinity of the construction site and potential for existing hazardous materials sites to affect construction. This assessment will consist of a search for environmental-related information present in publicly accessible databases. The information will be reviewed to determine if the construction footprint or adjacent properties are listed in the databases. If the construction footprint or adjacent properties are listed in the databases, <u>qualified Metropolitan staff or consultant(s) the professional environmental consultant</u> will determine the potential risk to construction workers, the public, or the environment from rehabilitation activities and identify all necessary avoidance, abatement, remediation, cleanup, disposal, monitoring,	Less than significant	Yes

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>reporting, notifications, and/or other measures to prevent significant impacts.</p> <p>MM HAZ-2: Encountering Unreported Hazardous Materials: To avoid exposure of construction workers, the public, or the environment to unreported hazardous materials in the soil, contractors will be required to inspect any site to be used for excavation, work zones, staging, or other rehabilitation-related activities prior to beginning construction. If odiferous, stained, or discolored soil is encountered, <u>qualified Metropolitan staff or consultant(s) a professional environmental consultant</u> specializing in the identification and handling of hazardous materials will be retained to assess the site. Identification of possible hazardous materials would typically involve soil samples and laboratory analysis. The suspect soil will be isolated, covered, and avoided by construction personnel until analytical results are reviewed by qualified personnel. Soils identified as hazardous or contaminated will be handled, transported, and treated in accordance with all federal, state, and local existing hazardous materials regulations and based the professional environmental consultant's direction.</p> <p>MM HAZ-3, Engineering Controls and Best Management Practices during Construction: To minimize human</p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>exposure to potential contaminants, during construction contractors will employ the use of engineering controls and BMPs. Engineering controls and construction BMPs will include, but are not limited to, the following:</p> <ul style="list-style-type: none"> Contractor employees working on site handling hazardous materials on contaminated media will be certified in the Occupational Health and Safety Administration's 40-hour Hazardous Waste Operations and Emergency Response training. Contractors will water or mist soil as it is being excavated and stockpiled or loaded onto transportation trucks. <p>MM HAZ-4, Encountering Contaminated Groundwater: To avoid exposure of construction workers, the public, or the environment to contaminated groundwater, suspect water removed from excavation areas (but not including dewatering of the pipelines themselves) will be tested by a qualified laboratory professional environmental consultant specializing in the identification and handling of hazardous materials and classified as hazardous or non-hazardous based on laboratory results. <u>If groundwater is considered hazardous, Metropolitan will notify the Regional Water Quality Control Board and local Environmental Health agencies regarding assessment</u></p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<u>and remediation requirements.</u>		
Threshold HAZ-D: Be Located on a Site That Is Included on a List of Hazardous Materials Sites and, as a Result, Create a Significant Hazard to the Public or the Environment	Potentially significant	MM HAZ-1: (see above). MM HAZ-2: (see above). MM HAZ-3: (see above). MM HAZ-4: (see above).	Less than significant	Yes
Threshold HAZ-E: For a Project Located within an Airport Land Use Plan or, Where Such Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard for People Residing or Working in the Project Area	Potentially significant	MM HAZ-5, Construction Activities within Runway Protection Zones: During the design phase for any projects in the program within the runway protection zones for Long Beach Municipal Airport or Van Nuys Airport (even where all construction would be accessed from outside the runway protection zones), project engineers will coordinate with the management of Long Beach Municipal Airport (Second Lower Feeder) or Van Nuys Airport (Sepulveda Feeder), as appropriate, to determine the methods of construction that will be necessary to avoid impacts on airport operations and safety. All operations and safety requirements of the airports will be incorporated into the construction design packages. All necessary requirements will be implemented during construction. MM HAZ-6, Aboveground Elements in Runway Protection Zones: To avoid airport operations and safety impacts, no permanent aboveground elements of the proposed program,	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		such as manhole covers, valve boxes, or electrical panels, will be located within runway protection zones (at Long Beach Municipal Airport for the Second Lower Feeder and Van Nuys Airport for the Sepulveda Feeder) without prior approval of the management of the appropriate airport.		
Threshold HAZ-F: For a Project within the Vicinity of a Private Airstrip, Result in a Safety Hazard for People Residing or Working in the Project Area	No impacts	None	No impacts	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Threshold HAZ-G: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	Potentially significant	MM HAZ-7, Maintaining Emergency/Evacuation Routes: To avoid impacts on emergency/evacuation routes, excavation sites will typically not be placed in roadways that serve as designated emergency/evacuation routes. If such streets cannot be avoided, the contractor will work with the local jurisdiction responsible for the emergency/evacuation routes to maintain adequate capacity. This will be accomplished by utilizing unused portions of the street right-of-way for travel lanes (such as temporarily prohibiting parking, restriping medians or parkway space, or detouring bike lanes) or by detouring the emergency/evacuation route to other roadways during construction. If detours are necessary, appropriate notification of emergency personnel and temporary signage will be used to direct emergency/evacuation traffic during construction.	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Threshold HAZ-H: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Areas where Wildlands Are Adjacent to Urbanized Areas or where Residences Are Intermixed with Wildlands	Less than significant	None	Less than significant	No
4.9 Hydrology and Water Quality⁵				
Threshold WQ-A: Violate Any Water Quality Standards or Waste Discharge Requirements	Less than significant	None	Less than significant	No
Threshold WQ-C: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, in a Manner that Would Result in Substantial Erosion or Siltation On or Off Site	Less than significant	None	Less than significant	No

⁵ CEQA thresholds b, g, h, and i for hydrology and water quality were determined to be less than significant in the Initial Study and were not addressed in this PEIR.

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Threshold WQ-D: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding On or Off Site	Potentially significant	MM HYD-1, Implementation of a Grading and Drainage Plan: Prior to construction of aboveground project facilities, Metropolitan will prepare a grading and drainage plan that identifies anticipated changes in flow that would occur on site and minimizes any potential increases in flooding, erosion, or sedimentation potential in accordance with applicable regulations and in coordination with requirements for the county and/or the city in which the facility would be located. The In accordance with local requirements, the plan will identify and implement best management practices and other measures to ensure that potential increases in stormwater flows and erosion are minimized.	Less than significant	No
Threshold WQ-E: 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	Less than significant	None	Less than significant	No
Threshold WQ-J: Expose People or Structures to Inundation by Seiche, Tsunami, or Mudflow	Less than significant	None	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
4.10 Land Use⁶				
Threshold LU-A: Physically Divide an Established Community	Less than significant	None	Less than significant	No
Threshold LU-B: Conflict with Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect	Less than significant	None	Less than significant	No
4.11 Noise				
Threshold NOI-A: Expose Persons to or Generate Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies	Potentially significant; to be determined at project level	<p>MM NOI-2, Locate Excavation Sites Away From Noise-Sensitive Receptors Receivers Where Feasible: A noise consultant will be retained during excavation site planning to determine if there are sensitive receptors receivers that could be affected by construction. Whenever possible, the excavation sites will be located in areas that would not affect sensitive receptors receivers or where receptors receivers can be shielded from construction noise.</p> <p>MM NOI-3, Conduct Project-Level Noise Studies at Each Excavation Site Where Noise-Sensitive Receptors Receivers Are Present: Project-level noise studies will be required at all</p>	Potentially significant Significant and unavoidable; <u>locations</u> to be determined at project level	Yes

⁶ For threshold c for land use, see Threshold BIO-F in Section 4.4, *Biological Resources*.

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>excavation sites where sensitive receptors receivers are present, as required in the planning stage by MM NOI-2. Such noise studies will identify the ambient noise levels, the receptors number of receivers that would be affected, the noise levels the receptors receivers will experience during construction, <u>and</u> any measures that can be used to reduce noise levels.</p> <p>Mitigation-All feasible mitigation measures identified in this noise study will be implemented, and the amount of noise reduction that would occur with implementation of these measures.</p> <p>MM NOI-4, Locate Staging Areas Away from Noise-Sensitive Receptors Receivers or Provide Noise Attenuation: Whenever feasible possible, staging areas will be located in areas that would not affect sensitive receptors receivers or where receptors receivers can be shielded from staging-area noise. Where possible, noise Noise screening will include temporary noise barriers with openings in the barriers kept to the minimum necessary for access.</p>		
Threshold NOI-B: Expose Persons to or Generate Excessive Groundborne Vibration or Groundborne Noise Levels	Potentially significant; to be determined at project level	<p>MM NOI-1, Locate Excavation Sites Away From Vibration-Sensitive Uses: A noise and vibration consultant will be retained during excavation site planning to determine if there are vibration-sensitive land uses that could be affected by construction. <u>Whenever</u></p>	Less than significant	Yes

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		possible, excavation Excavation sites will then be located so that vibration impacts would not affect vibration-sensitive land uses or mitigation would be included to reduce vibration levels at vibration-sensitive land uses to less-than-significant levels.		
Threshold NOI-C: Result in a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project	No impact	None	No impact	No
Threshold NOI-D: Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project	Potentially significant; to be determined at project level	MM NOI-2: (see above). MM NOI-3: (see above). MM NOI-4: (see above).	Potentially significant Significant and unavoidable; <u>locations</u> to be determined at project level	Yes
Threshold NOI-E: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Expose People Residing or Working in the Project Area to Excessive Noise Levels	Less than significant	None	Less than significant	No
Threshold NOI-F: For a Project within the Vicinity	No impact	None	No impact	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
of a Private Airstrip, Expose People Residing or Working in the Project Area to Excessive Noise Levels				
4.12 Recreation				
Threshold REC-A: Increase the Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such That Substantial Physical Deterioration of the Facilities Would Occur or Be Accelerated	Less than Significant	None	Less than significant	No
Threshold REC-B: Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities, Which Might Have an Adverse Physical Effect on the Environment	No impact	None	No impact	No
4.13 Transportation and Traffic				
Threshold TRA-A: Conflict with an Applicable Plan, Ordinance, or Policy that Establishes Measures of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-	Potentially significant; to be determined at project level	MM TRA-1, Excavation Siting to Minimize Traffic Impacts: Excavation sites would be located to avoid traffic impacts to the maximum extent feasible possible , considering the logistical requirements for pipeline rehabilitation (e.g., adequate spacing, pipeline logistics) and other impacts such as habitat and noise. To the maximum extent feasible possible , the	Potentially significant Significant and unavoidable; <u>locations</u> to be determined at project level	Yes

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Motorized Travel, and Relevant Components of the Circulation System, Including, but not Limited to, Intersections, Streets, Highways and Freeways, and Pedestrian and Bicycle Paths		<p>following will be considered when locating excavation sites.</p> <ul style="list-style-type: none"> • Whenever feasible possible, where an off-road excavation site is available that would not result in other significant environmental impacts (e.g., to habitat, land uses), the off-road location will be used. • Whenever feasible possible, excavation sites in roadways will be situated within medians where available, especially if the medians are not used for left-turn lanes and do not include large street trees or other features that would be difficult to restore after rehabilitation. • Whenever feasible possible, excavation sites will be situated where the existing number of travel lanes can be maintained by temporarily removing parking (where adequate parking is available in the local area), temporarily relocating bike lanes to adjacent roadways, or temporarily restriping to provide narrower lanes (where they can be safely accommodated). • Whenever feasible possible, excavation sites will be situated so that adequate access to adjacent properties can be maintained, including left-turn entrances. • Whenever feasible possible, 		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>excavation sites will be situated so that bicycle and pedestrian circulation can be safely maintained, either by use of barriers or other safety features, or by providing alternative bicycle and pedestrian routes, with appropriate signage. <u>Where feasible, siting</u> excavation near heavily used pedestrian areas, such as around schools, hospitals, and transit stops, will be avoided. <u>Where feasible, siting</u> excavation in areas designated as safe routes to school will be avoided, or alternative routes will be developed <u>in coordination by working</u> with the local jurisdictions and school districts and providing appropriate signage, notification, and traffic controls.</p> <p>MM TRA-2, Construction Traffic Control Plans: Metropolitan and/or its contractors will coordinate with the counties of Los Angeles, Orange, and San Bernardino as well as each local jurisdiction through which the pipelines travels (see tables above) to develop construction traffic control measures and procedures prior to the start of construction on each project. Measures to reduce temporary construction traffic and transportation impacts on city streets may include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • Development of traffic control 		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		<p>plans in coordination with local jurisdictions. The traffic control plans will be implemented and revised, as necessary and applicable.</p> <ul style="list-style-type: none"> • Provision of advance written notification of construction activities to residences and businesses around each construction site. • Identification of travel routes and establishment of optimal arrival and departure times to minimize conflicts with residents, schools, and businesses, <u>as feasible to minimize conflicts.</u> • Provisions to detour pedestrians and bicyclists from for project activities impacts near or on the sidewalks and bike lanes. • Implementation of safety measures, such as signs, flaggers, cones, signage, and advance notice, as appropriate. • Covering of all open trenches when not in use or at the end of each work day, as applicable. <p>MM TRA-3, Maintaining Adequate Parking: Whenever feasible possible, excavation work zones and construction staging areas will not be sited in such a way that they result in inadequate availability of parking for adjacent land uses. If work zones or staging areas are planned for parking</p>		

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
		areas, a parking study will be completed by a qualified traffic consultant prior to construction to identify if adequate parking would be available locally.		
Threshold TRA-B: Conflict with an Applicable Congestion Management Program, Including, but not Limited to, Level-of-Service Standards and Travel Demand Measures or Other Standards Established by the County Congestion Management Agency for Designated Roads or Highways	Less than significant	None	Less than significant	No
Threshold TRA-C: Result in a Change in Air Traffic Patterns, Including either an Increase in Traffic Levels or a Change in Location that Would Result in Substantial Safety Risks	Potentially significant	MM HAZ-5: (see above in 4.8, Hazards and Hazardous Materials). MM HAZ-6: (see above in 4.8, Hazards and Hazardous Materials).	Less than significant	No
Threshold TRA-D: Substantially Increase Hazards Due to a Design Feature or Incompatible Uses	Potentially significant	MM TRA-2: (see above).	Less than significant	No
Threshold TRA-E: Result in Inadequate Emergency Access	Potentially significant	MM HAZ-7: (see above in 4.8, Hazards and Hazardous Materials).	Less than significant	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Threshold TRA-F: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities or Otherwise Decrease the Performance or Safety of Such Facilities	Potentially significant	MM TRA-1: (see above). MM TRA-2: (see above).	Less than significant	Yes
4.14 Utilities and Service Systems				
Threshold UTIL-A: Exceed Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board	Less than significant	None	Less than significant	No
Threshold UTIL-B: Require or Result in the Construction of New Water or Wastewater Treatment Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects	No impact	None	No impact	No
Threshold UTIL-C: Require or Result in the Construction of New Stormwater Drainage Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects	No impact	None	No impact	No

Threshold	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation	Is additional analysis necessary at project level?
Threshold UTIL-D: Have Sufficient Water Supplies Available to Serve the Project from Existing Entitlements and Resources, or Are New and Expanded Entitlements Needed	No impact	None	No impact	No
Threshold UTIL-E: Result in a Determination by the Wastewater Treatment Provider that Serves or May Serve the Project that it Has Adequate Capacity to Serve the Project's Projected Demand in Addition to its Existing Commitments	No impact	None	No impact	No
Threshold UTIL-F: Be Served by a Landfill with Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs	Less than significant	None	Less than significant	No
Threshold UTIL-G: Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste	Less than significant	None	Less than significant	No
4.15 Energy Conservation				
Threshold ENE-A: Use Energy in an Inefficient, Wasteful, or Unnecessary Manner	Less than significant	None	Less than significant	No

Chapter 2

Introduction

2.1 Purpose of the PEIR

This Programmatic Environmental Impact Report (PEIR) assesses the potential environmental effects of the Prestressed Concrete Cylinder Pipe Rehabilitation Program (proposed program). This PEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code [PRC] Section 21000 et seq.) and the Guidelines for Implementation of CEQA (State CEQA Guidelines) published by the Public Resources Agency of the state of California (California Code of Regulations [CCR], Title 14, Section 15000 et seq.). The Metropolitan Water District of Southern California (Metropolitan) is the Lead Agency under CEQA (PRC Section 21067, as amended), is responsible for the preparation of the PEIR, and will use this document to objectively review and assess the proposed program prior to approval or disapproval.

This PEIR is intended to: (1) inform decision-makers and the public about the potentially significant environmental effects of the proposed activities; (2) identify the ways that significant environmental effects can be avoided or reduced; (3) prevent significant, avoidable damage to the environment by requiring changes in the proposed program through the use of alternatives or mitigation measures, to the extent that Metropolitan determines the changes to be feasible, and (4) identify what additional project-level analysis will be necessary in later environmental documents (State CEQA Guidelines Section 15002; PRC Section 21002.1).

2.2 Scope of the PEIR

Metropolitan prepared an Initial Study for the proposed program (Appendix A).¹ The Initial Study indicated that the proposed program would result in less-than-significant impacts on the following environmental issue areas.

- Mineral resources
- Population and housing
- Public services

These issue areas do not require additional analysis in this PEIR.

The Initial Study indicated that significant impacts may occur with respect to the environmental issue areas for the proposed program that are listed below; these issue areas are analyzed in detail in this PEIR (Chapter 4, *Environmental Analysis*).

¹ The Notice of Preparation described this document as a combined PEIR and project-level EIR for the Second Lower Feeder. The project-level analysis is no longer a part of this PEIR. Project-level analysis will be provided at a later date.

- Aesthetics
- Agriculture
- Air quality
- Biological resources
- Cultural resources
- Geology and soils
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Noise
- Recreation
- Transportation and traffic
- Utilities and service systems

One additional topic, energy conservation, was not addressed in the Initial Study and is also included in this PEIR.

On December ~~18~~ 17, 2014, Metropolitan circulated a Notice of Preparation (NOP) to responsible agencies and other interested parties. The Initial Study and NOP are included in Appendix A, and comment letters received on the NOP are included in Appendix B of this document. The topics in the comment letters and where they are addressed are summarized in Table 2-1.

Table 2-1. Summary of NOP Comments

Topic	Chapter Addressed
Transportation impacts during rehabilitation work	Section 4.13, Transportation and Traffic The typical construction scenarios are identified and the types of transportation impacts that would occur are evaluated. Requirements for construction traffic management plans are included in mitigation.
Impacts on listed, candidate, or sensitive species	Section 4.4, Biological Resources Biological resources within the program area, potential impacts, and Metropolitan's standard measures to minimize potential impacts on such resources are detailed.
Impacts on waters of the United States or jurisdictional wetlands	Section 4.4, Biological Resources Section 4.9, Hydrology and Water Quality Waters of the United States or jurisdictional wetlands within the program area, potential impacts, and Metropolitan's standard measures to minimize potential impacts on such resources are detailed.
Impacts related to air quality during rehabilitation work	Section 4.3, Air Quality Existing air quality conditions, anticipated emissions for typical construction scenarios, and measures to reduce potential impacts related to air quality are detailed.
General sequencing and timing of rehabilitation work and potential disruption of water service	Chapter 3, Program Description To the extent information is known, general sequencing of rehabilitation work is discussed. In all cases in which disruptions to service would be required, Metropolitan will coordinate with affected agencies in advance of shutdowns to ensure adequate service is maintained.

Topic	Chapter Addressed
Impacts on existing aboveground and subsurface infrastructure	Chapter 3, Program Description To the extent information is known, potential impacts related to existing aboveground and subsurface infrastructure are described. Also, Section 4.9, <i>Hydrology and Water Quality</i> ; Section 4.14, <i>Utilities and Service Systems</i> ; and Section 4.13, <i>Transportation and Traffic</i> , discuss potential impacts on infrastructure, and mitigation is identified when necessary.
Impacts on emergency service providers during rehabilitation work	Section 4.8, Hazards and Hazardous Materials Section 4.13, Transportation and Traffic Impacts and mitigation measures related to the timely provision of emergency services are discussed.

2.3 Format of the PEIR

This PEIR is organized as follows.

- **Chapter 1, Summary.** The summary includes a brief program description and a summary of environmental impacts and proposed mitigation measures that would reduce or avoid impacts determined to be significant, discussion of alternatives considered, description of areas of controversy known to the Lead Agency, and any issues to be resolved, including the choice among alternatives or how to mitigate significant impacts (State CEQA Guidelines Section 15123).
- **Chapter 2, Introduction.** This chapter describes the scope and purpose of the PEIR, provides a brief summary of the CEQA process, and establishes the document format.
- **Chapter 3, Program Description.** This chapter provides a description of Metropolitan, the location of the proposed program pipelines, the objectives of the proposed program, and proposed program features.
- **Chapter 4, Environmental Impact Analysis.** This chapter constitutes the main body of the PEIR and includes the detailed impact analysis for each environmental issue. The issue areas analyzed in this chapter include those listed in Section 2.2, *Scope of the PEIR*. For each issue area, Sections 4.1 to 4.14 include a discussion of methods of analysis, existing conditions, the thresholds identified for the determination of significant impacts, and an evaluation of the impacts associated with the proposed program. Where the impact analysis demonstrates the potential for the proposed program to have a significant impact on the environment, mitigation measures are provided that would minimize the significant effects. The PEIR indicates if the proposed mitigation measures would reduce impacts to less-than-significant levels. The cumulative impacts that would result from implementation of the proposed program in combination with other past, present, and reasonably foreseeable or probable future projects are discussed in each resource section. If additional analysis is necessary to identify site-specific environmental impacts, identify mitigation, or determine whether environmental impacts could be reduced to less-than-significant levels, the PEIR identifies that additional environmental analysis will be necessary at the project level.
- **Chapter 5, Alternatives.** This chapter provides a description of alternatives to the proposed program and an evaluation of their potential to reduce or avoid the proposed program's significant impacts.

- **Chapter 6, *Other CEQA Considerations*.** This chapter discusses additional topics required by CEQA, including unavoidable adverse impacts, growth inducement, and irreversible environmental changes.
- **Chapter 7, *References*.** This chapter includes a listing of applicable reference materials.
- **Chapter 8, *List of Preparers*.** This chapter includes a list of individuals involved in the preparation of the PEIR, including Lead Agency staff and consultants.
- **Chapter 9, *Comment on Draft PEIR and Responses*.** This chapter includes the comments received during the comment period of the Draft PEIR and the responses to the comments.

Changes were made to this Final PEIR after it was circulated during the comment period for clarification. These changes are indicated by underlined text (for additions) and strike-out text (for deletions). None of these changes were significant and do not require recirculation of the PEIR for public review.

Chapter 3

Program Description

3.1 Introduction

The Metropolitan Water District of Southern California (Metropolitan), the lead agency under the California Environmental Quality Act (CEQA), is proposing various rehabilitation activities under the proposed Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed program). Under this proposed program, Metropolitan would rehabilitate the PCCP portions of the following five buried water distribution pipelines (also known as feeders) within its service area.

- Allen-McColloch Pipeline
- Calabasas Feeder
- Rialto Pipeline
- Second Lower Feeder
- Sepulveda Feeder

Rehabilitation would occur at various locations along approximately 100 miles of the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder combined. This program-level environmental impact report (PEIR) analyzes the potential environmental impacts that would result from rehabilitation activities to occur along all five of the feeders.

This chapter provides an overview of Metropolitan and its service area, the objectives of the proposed program, the location of the activities that would be conducted as part of the proposed program, and key components of the proposed program.

3.2 Metropolitan and the Service Area

Metropolitan is a regional wholesaler that delivers water to 26 member agencies—14 cities, 11 municipal water districts, and one county water authority—which in turn provide drinking water to about 19 million people in Southern California. Collectively, the member agencies serve the residences and businesses of more than 300 cities and numerous unincorporated communities spread over a service area that includes 5,200 square miles of Los Angeles, Orange, San Bernardino, Riverside, San Diego, and Ventura counties.

Metropolitan was established in 1928 under an act of the California legislature to build and operate the Colorado River Aqueduct, which extends 242 miles from Lake Havasu on the California-Arizona border to Metropolitan's Lake Mathews reservoir in western Riverside County. In 1960, Metropolitan, along with 30 other public agencies, signed a long-term contract to enable construction of the 444-mile California Aqueduct, which extends from Northern California's Sacramento-San Joaquin Delta to several Southern California reservoirs, including Lake Silverwood, Lake Perris, and Lake Castaic. The California Aqueduct is owned and operated by the Department of Water Resources and currently provides water to Metropolitan and others under contract.

In addition to its two primary sources, Metropolitan's water sources include local supplies from groundwater storage agreements and water transfer arrangements with other water suppliers and users. Supplies from the Colorado River, Northern California, and local sources may vary substantially from year to year.

Metropolitan conveys more than 1.5 billion gallons of potable water to its member agencies per day through an extensive system of reservoirs and distribution facilities throughout its service area. The major facilities within Metropolitan's conveyance, treatment, and distribution system are summarized below.

- **Colorado River Aqueduct** – 242 miles of conduits, siphons, tunnels, and canals
- **Pumping plants** – five pumping plants, including Whitsett Intake (lift 291 feet); Gene (303 feet); Iron Mountain (144 feet); Eagle Mountain (438 feet); and Julian Hinds (441 feet)
- **Water treatment plants** – five water treatment plants, including the Joseph E. Jensen plant (Granada Hills), Robert A. Skinner plant (north of Temecula), F.E. Weymouth plant (La Verne), Robert B. Diemer plant (Yorba Linda), and Henry J. Mills plant (Riverside)
- **Conveyance and Distribution pipelines** – 830 miles of pipeline extending throughout the service area
- **Reservoirs** – 10 water storage reservoirs, including Diamond Valley Lake (near Hemet), Etiwanda (Riverside), Lake Mathews (Riverside), Lake Skinner (north of Temecula), Copper Basin and Gene Wash (desert region), Live Oak Reservoir (La Verne), Garvey Reservoir (Monterey Park), Palos Verdes Reservoir (Rolling Hills), and Orange County (Brea)
- **Hydroelectric plants** – 16 hydroelectric plants at various locations throughout the service area

3.3 Program Need

Metropolitan's water distribution system comprises over 830 miles of buried pipelines constructed of various materials, including steel, cast iron, reinforced concrete, and PCCP. Between 1962 and 1985, 163 miles of PCCP lines, ranging in size from 42 to 201 inches in diameter, were installed throughout Metropolitan's service area. The pipelines are generally located within Metropolitan-owned and public rights-of-way in both dense urban areas and remote rural regions.

PCCP is a composite-walled pipe that contains a steel cylinder that is spirally wound with high-strength steel prestressing wire. The wire is wrapped around a cement slurry bed and is then coated with cement mortar, which serves as a finished outer surface. PCCP has been used by water utilities in North America since the early 1940s and began to see widespread use in municipal, industrial, and irrigation systems in the 1960s.

Beginning in the early 1970s, an increasing number of PCCP failures were observed throughout the United States. Studies found that under certain conditions, PCCP lines may have a reduced service life and elevated risk of failure versus other types of pipe because of the potential of its prestressing wires to deteriorate, corrode, and eventually break. PCCP failures can occur without warning, and such failures can be catastrophic, compromising system reliability and resulting in unplanned major repairs, significant costs from service interruptions and repair work, and potential third-party damages.

Beginning in the late 1990s, Metropolitan initiated a program to inspect and assess the condition of all of its PCCP lines on a regular basis using state-of-the-art inspection techniques. Under this inspection program, all 27 PCCP lines within the distribution system were inspected every 3 to 7 years in order to gain information about the pipelines' baseline condition, to track prestressing wire breakage over time, and to identify distressed PCCP segments that require immediate repair. The inspection data were then used to assess the pipeline condition using industry-recognized risk factors such as wire breaks, repair history, internal pipe pressure, stray current from third parties, and location. Based on the results of the inspections, Metropolitan rated each of its 27 PCCP lines and then prioritized the pipelines based on need of rehabilitation. The following five PCCP lines were identified as having the highest need for rehabilitation: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder.

In September 2011, Metropolitan's Board authorized initiation of the PCCP Rehabilitation Program in order to develop a comprehensive, long-term plan for repair of Metropolitan's at-risk PCCP feeders. There were several drivers for the creation of this program: (1) the increasing number of failures of PCCP lines within the water industry, along with recognition of the risks associated with these failures; (2) trends of PCCP deterioration within Metropolitan's distribution system, based on monitoring data collected over a 14-year period; and (3) Metropolitan's experience with expensive, urgent repairs on PCCP lines. Based on this experience and on a risk assessment of Metropolitan's PCCP lines, staff concluded that approximately 100 miles of PCCP will have a reduced service life and need to be rehabilitated, especially in comparison with pipelines made of other materials.

3.4 Program Objectives

CEQA requires that an EIR include a statement of the objectives of the proposed action (State CEQA Guidelines 15124). The objectives of the proposed program are to:

- Reduce the risk of unplanned outages
- Extend the service life of the pipelines
- Perform the rehabilitation work in a cost-effective manner
- Minimize the effects of rehabilitation efforts on Member Agency deliveries
- Minimize the loss of hydraulic capacity due to rehabilitation
- Improve system operational and emergency flexibility

3.5 Program Locations

This section describes the general location and current condition of the five pipelines that would be rehabilitated as part of the proposed program. General characteristics and locations of the pipelines are summarized in **Table 3-1**, **Figure 3-1** shows the regional location of all pipeline alignments, and **Figures 3-2a through 3-2e** show the individual pipeline locations. Additional details regarding the environmental setting of each pipeline can be found in Section 4.0, *Introduction to Environmental Analysis*, and in the respective resource sections (Sections 4.1 through 4.14).

3.6 Program Components

Components involved in rehabilitation of PCCP can be categorized as primary, secondary, and associated temporary construction components. These components and the various methods needed to construct, install, and operate the components are summarized below and would be used as appropriate for rehabilitation of all five pipelines.

- Primary components include the different methods of rehabilitation considered for segments of the pipelines under the proposed program. These rehabilitation methods include steel cylinder relining with collapsed pipe, steel pipe sliplining with non-collapsed pipe, and replacement or new pipe construction.
- Secondary components include permanent appurtenant structures. These appurtenant structures are common to each of the five pipelines and can be further divided into buried (underground) structures and above-ground enclosures. Buried structures include vaults that house piping such as those at interconnections and equipment such as valves and meters. Above-ground enclosures, typically located on sidewalk median strips, house back-flow preventer valves and air vents. New vaults with new equipment would be constructed and existing appurtenant structures, including their equipment, would be rehabilitated as necessary.
- Temporary construction components include pipe portals, bulkhead, vault excavation sites, contractor work areas, and equipment staging areas.

3.6.1 Primary Components

3.6.1.1 Steel Cylinder Relining With Collapsed Pipe

Steel cylinder relining rehabilitation of PCCP would involve the following.

- Inserting collapsed steel cylinders into the existing PCCP line
- Expanding the collapsed cylinder into round to fill the PCCP pipe interior
- Welding the cylinder within the PCCP
- Filling the annular space between the steel cylinder and existing PCCP with concrete grout
- Applying a cement mortar to the interior surface of the steel cylinder



Figure 3-1
Regional Vicinity Map
Metropolitan Water District PCCP Rehabilitation Program

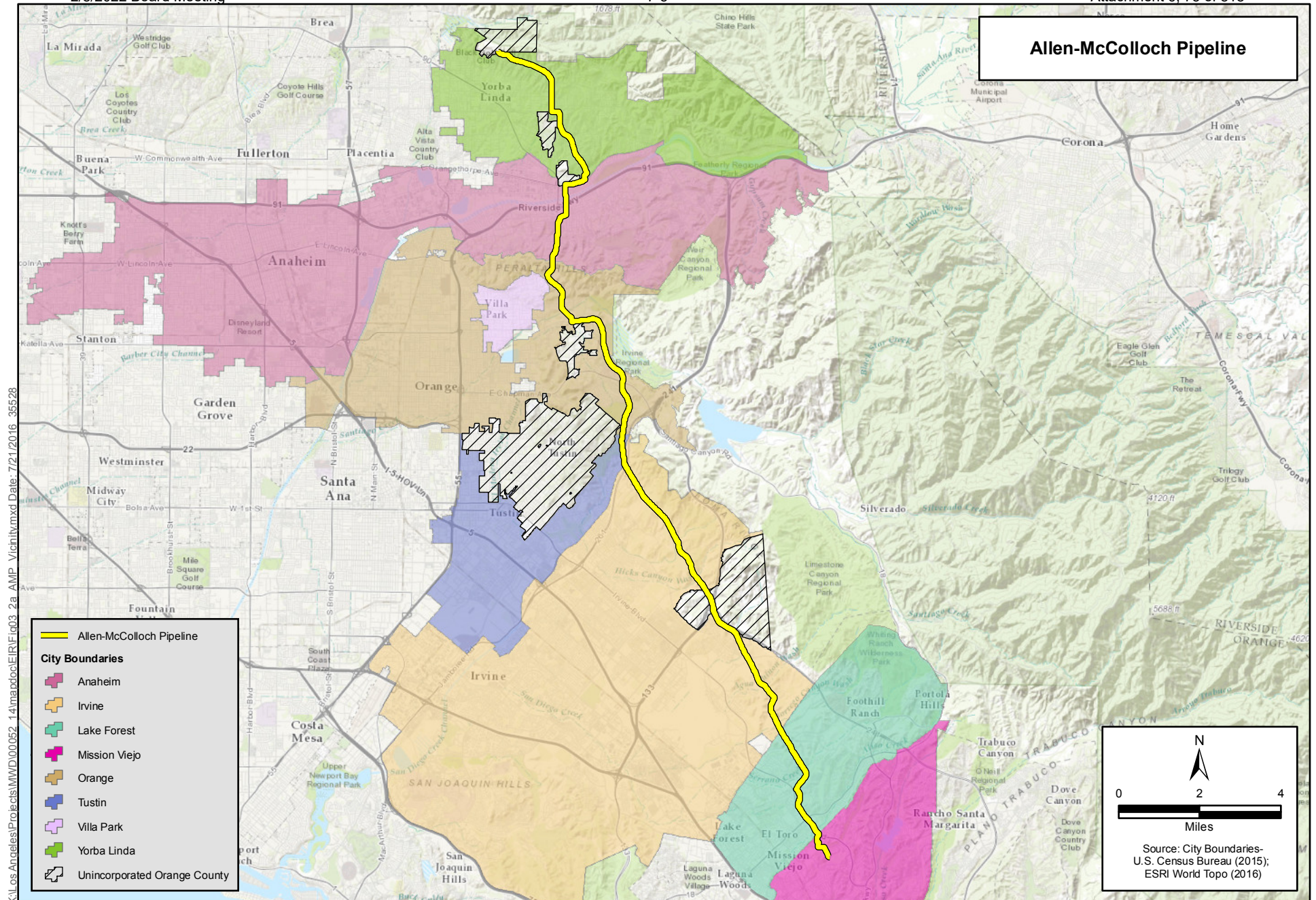


Figure 3-2a
Allen-McColloch Pipeline
Metropolitan Water District PCCP Rehabilitation Program

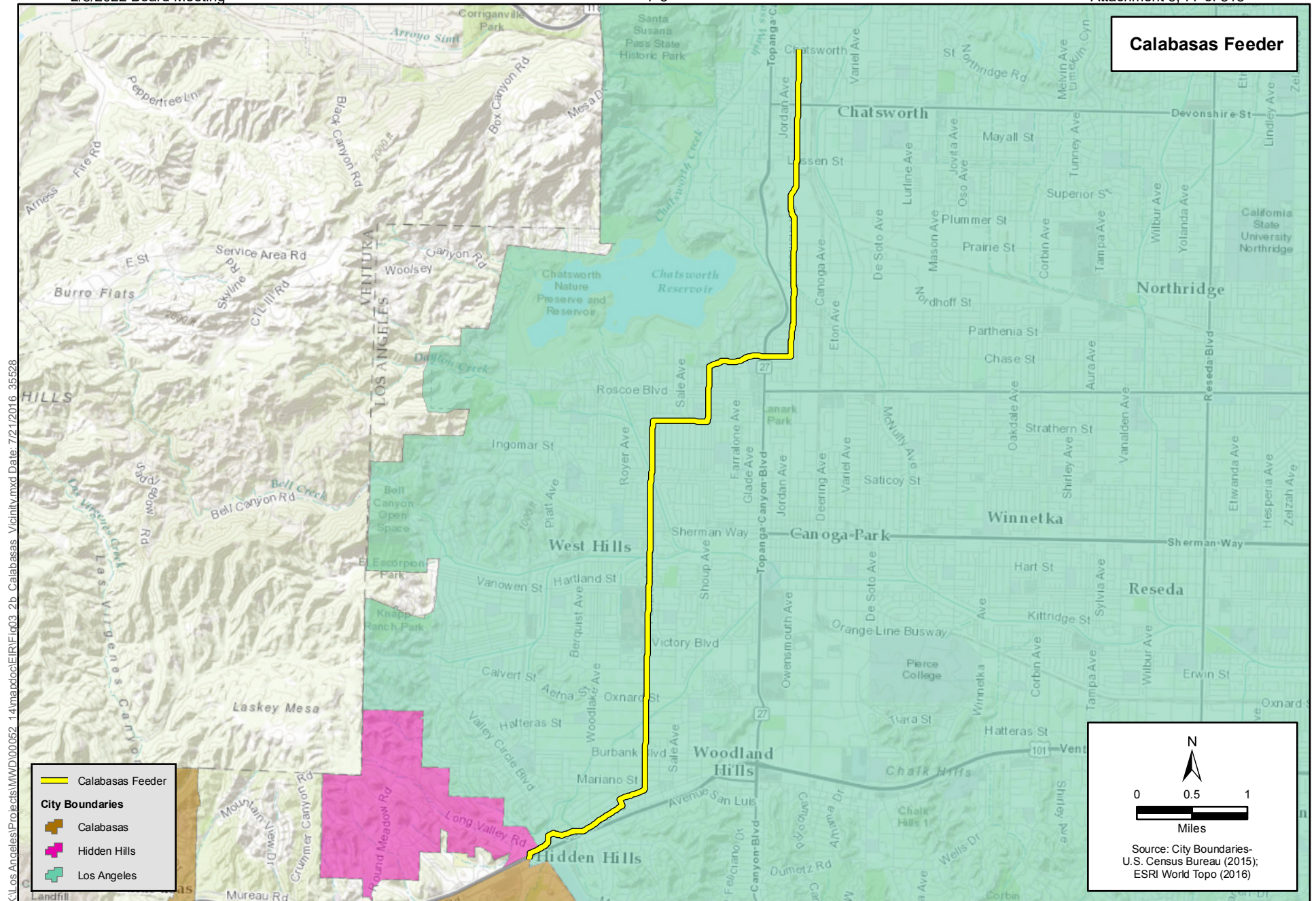


Figure 3-2b
Calabasas Feeder
Metropolitan Water District PCCP Rehabilitation Program

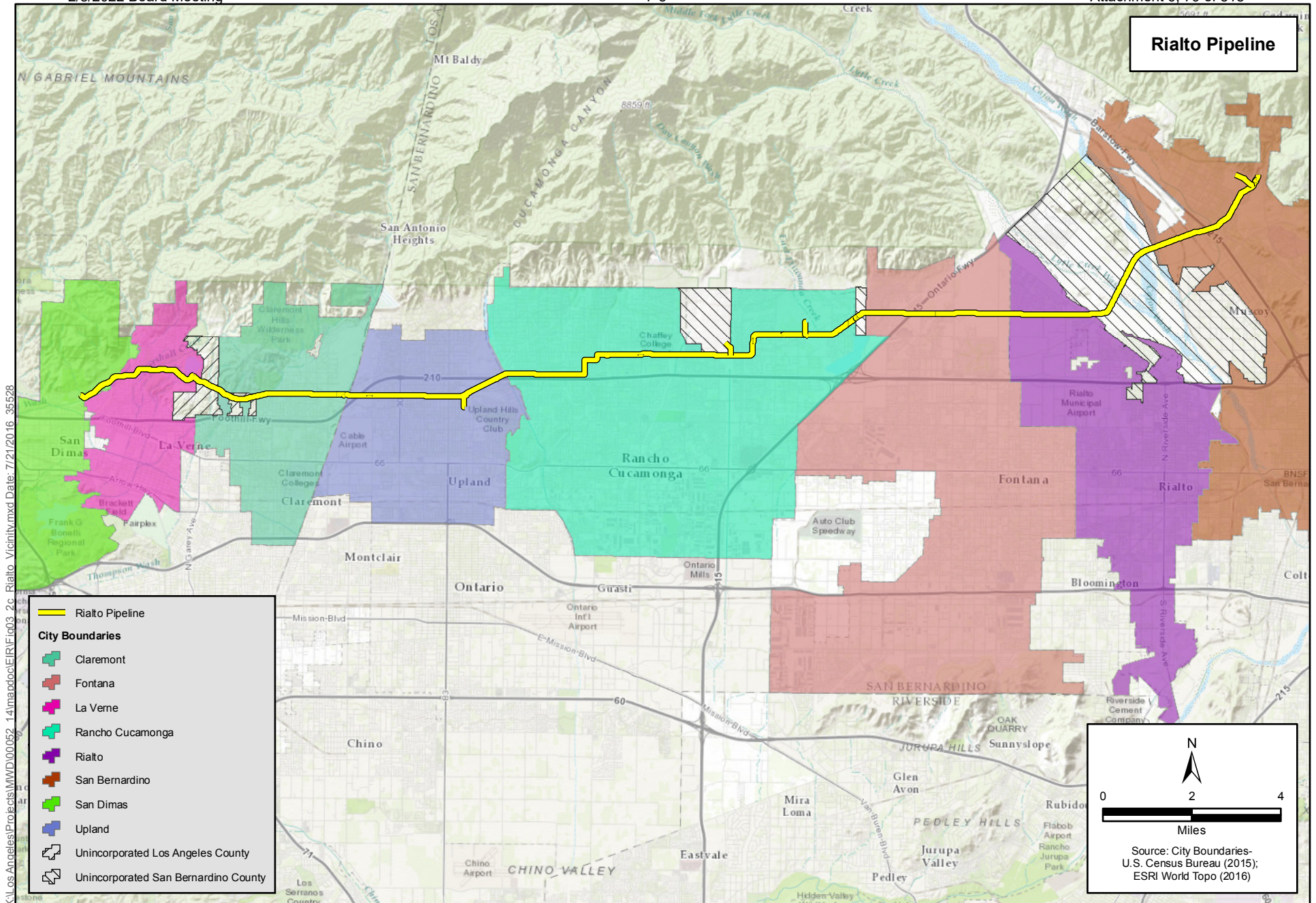


Figure 3-2c
Rialto Pipeline
Metropolitan Water District PCCP Rehabilitation Program

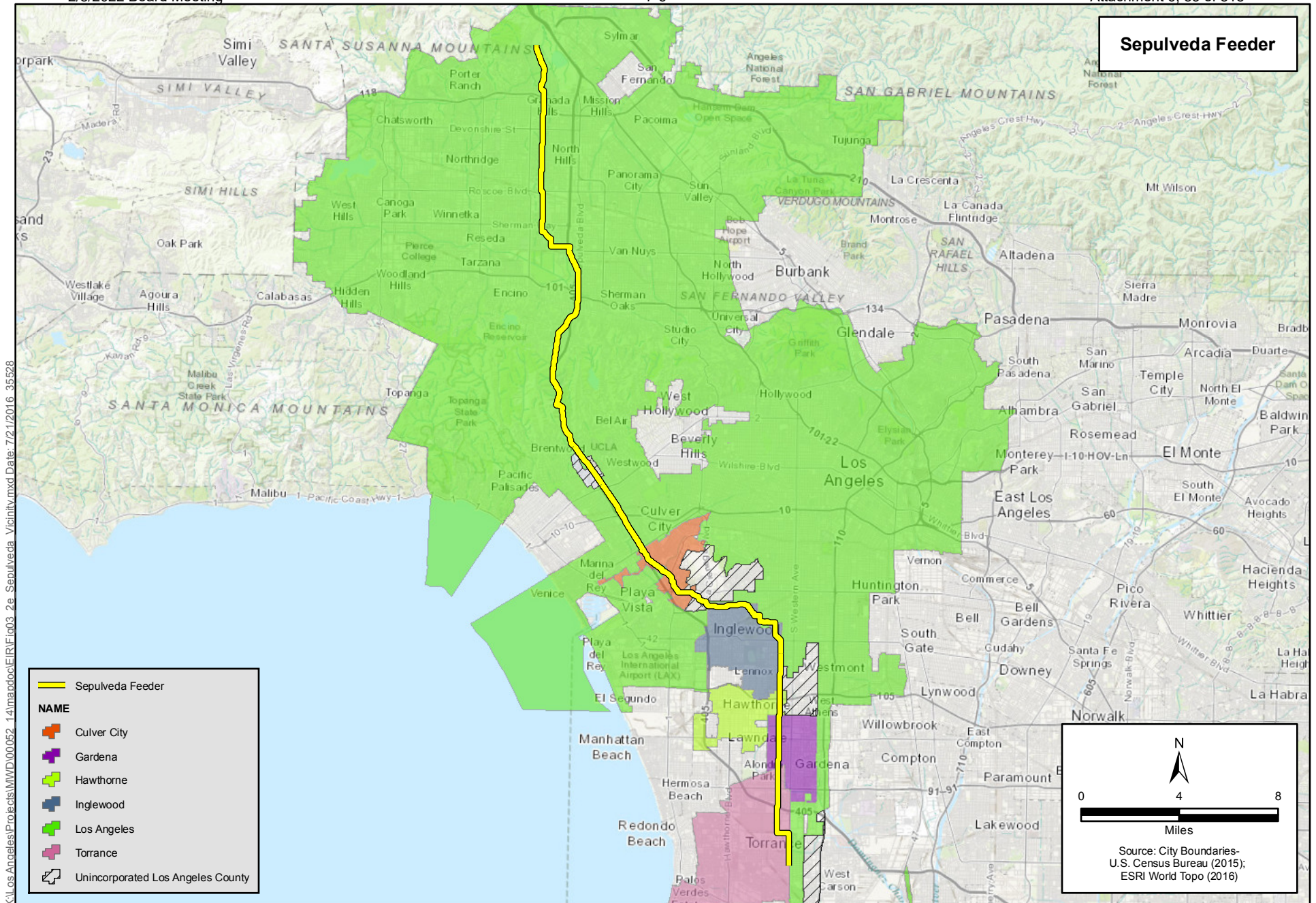


Figure 3-2e
Sepulveda Feeder
Metropolitan Water District PCCP Rehabilitation Program

Table 3-1. Summary of Proposed Program Pipelines

Pipeline	Construction Year	Total Length (miles)	Length of PCCP (miles)	Starting Location	Terminus Location	Counties	Cities
Allen-McColloch Pipeline	1970	26	9	Diemer Water Treatment Plant, City of Yorba Linda	El Toro Water District El Toro Reservoir, City of Mission Viejo	Orange	Anaheim, Irvine, Lake Forest, Mission Viejo, Orange, Tustin, and Yorba Linda
Calabasas Feeder	1975	9.3	9.3	West Valley Feeder No. 2, City of Los Angeles	Las Virgenes Municipal Water District Service Connection, City of Calabasas	Los Angeles	Calabasas, Hidden Hills, and Los Angeles
Rialto Pipeline	1970	30	16	California Department of Water Resources' Devil Canyon Facility, City of San Bernardino	San Dimas Power Plant Control Structure, City of San Dimas	Los Angeles, San Bernardino	Claremont, Fontana, La Verne, Rancho Cucamonga, Rialto, San Bernardino, San Dimas, and Upland
Second Lower Feeder	1966	39	30	Diemer Water Treatment Plant, City of Yorba Linda	Palos Verdes Reservoir, City of Rolling Hills Estates	Orange, Los Angeles	Anaheim, Buena Park, Carson, Cypress, Lakewood, Lomita, Long Beach, Los Alamitos, Los Angeles, Placentia, Rolling Hills Estates, Torrance, and Yorba Linda
Sepulveda Feeder	1970	42	37	Jensen Water Treatment Plant, City of Los Angeles	Second Lower Feeder Interconnection, City of Torrance	Los Angeles	Culver City, Gardena, Hawthorne, Inglewood, Los Angeles, and Torrance

The steel cylinder liner would be designed as a stand-alone pipeline that can accommodate full internal and external pressures on the line. The steel cylinder liner would only be slightly smaller than the existing PCCP line.

This method is best suited for pipe rehabilitation of long pipe reaches with varying pipe diameters resulting from previous repairs. Most of the construction activities occur within the pipe and site impacts occur primarily at the entry and exit portals to the pipeline. **Figures 3-3 and 3-4** show the steel lining that would be inserted into the existing PCCP. All of this work would be done inside the existing pipeline and at excavation sites along the existing pipeline alignment.



Figure 3-3. Collapsed Steel Pipe Section

3.6.1.2 Steel Pipe Sliplining with Non-Collapsed Pipe

Steel pipe sliplining rehabilitation of PCCP with non-collapsed pipe is similar to steel cylinder relining with collapsed pipe, but does not include installing and expanding collapsed pipe. Instead, it involves inserting full sections of cement-mortar-lined welded steel pipe into the existing PCCP line, welding adjoining pipe sections together, filling the annular space between the steel pipe and existing PCCP with concrete grout, and applying a cement mortar of the interior pipe surface at the welded joints. The steel pipe would be designed as a stand-alone pipeline that can accommodate full internal and external pressures on the line. The interior diameter of the steel pipe with sliplining would be smaller than the existing PCCP line and also slightly smaller than pipes relined with collapsed pipe. This method is less labor intensive than steel cylinder relining with collapsed pipe

and best suited for pipe rehabilitation of single pipe segments or shorter pipe reaches. Similar to steel cylinder relining with collapsed pipe, most of the construction activity would occur within the pipe and site impacts would occur primarily at the entry and exit portals to the pipelines.



Figure 3-4. Steel Sliplining with Non-Collapsed Pipe in Progress

3.6.1.3 New Pipe Replacement

New pipe may be constructed to replace an individual pipe segment or a new pipeline alignment in locations where the existing PCCP line cannot be rehabilitated with steel liners due to construction constraints, additional capacity requirements, or operational constraints. The new pipe would be sized to accommodate needed flows. Only two pipelines may require new or parallel pipe replacement.

- Allen-McColloch Pipeline in limited areas of Anaheim, Tustin, Irvine, Lake Forest, and Mission Viejo
- Second Lower Feeder in limited areas of Yorba Linda, Placentia, and Anaheim
- Rialto Pipeline in limited areas of Claremont, Fontana, La Verne, Rancho Cucamonga, Rialto, San Bernardino, San Dimas, and Upland

New pipe would generally be constructed via open trench methods and would involve laying 20- to 40-foot-long full sections of cement-mortar-lined and coated welded steel pipe. The open trench depths would be based on the depth of the existing pipeline (the pipe trenches for the Second Lower Feeder, for example, would be excavated to depths of 20 to 40 feet), and open trench widths would generally be sized to be a few feet wider than the pipe diameter (the additional width allows shoring

installation and proper pipe placement, backfilling, and compaction activities to take place). After installation of the new pipe, the trench is backfilled with soils that were previously removed, and the surface is restored. Due to its higher cost, installation of new pipe would only be considered where other methods are determined to be ineffectual.

Where possible, the existing PCCP line would be kept in service until the new pipe is completely constructed and operational. Upon completion of the tie-ins to the new pipe, pipe flows would be diverted to the newly constructed pipe and the existing PCCP line would likely be abandoned and taken out of service.

3.6.2 Secondary Components

Pipeline systems typically include equipment vaults that house water meters, isolation valves, check valves, bypass valves, back-flow preventer valves, and pressure-reducing valves, pump wells, and blow-offs. Valves are typically used in pipelines to regulate, throttle, and control flow or pressure, to prevent back-flow, and to relieve excess pressure or vacuum or to dewater the pipeline. Meters are typically used to monitor, measure, and control water usage in a water distribution system.

Equipment vaults are buried rectangular concrete structures that can be accessed from street level to perform maintenance and repairs. Vaults sizes would vary; for analysis purposes they are assumed to be 33 feet wide by 57 feet long by 28 feet high to house valves as large as 120 inches in diameter. (Many vaults would be smaller.) The top of the structure is typically several feet below ground surface and the structures are accessed via ladders from street-level hatches or manholes.

Figure 3-5 shows a typical buried equipment vault. Above-ground enclosures housing electrical panels are typically located along the sidewalk within the public right-of-way.

3.6.2.1 Buried Equipment Vaults

Existing vaults and the equipment inside them would be upgraded as part of the rehabilitation work. This could include modifying or enlarging the existing vault structure or building a new adjacent vault structure. Once the new vault is constructed and new equipment is installed, aged and deteriorated vaults may be demolished.

New vaults are planned to be added to the existing pipelines as part of the proposed program. These new vaults would require excavation around the existing pipeline. Once rehabilitation is complete, the excavation site would be backfilled with slurry, originally excavated soils would be properly disposed of off site, and the surface would be restored to existing conditions. This would involve repaving existing roads and replacing existing sidewalks.

3.6.2.2 Manholes and Above-Ground Enclosures

Manholes typically provide access for maintenance and repairs and are spaced at regular intervals along the pipelines. The proposed program would retain the existing manholes and construct new manholes as needed to maintain access to buried vault structures and to the pipeline. Existing manholes would be used for ventilation and for access to the interior of the pipeline for personnel, small equipment, and materials during rehabilitation of other program components (e.g., pipeline relining). New manholes would be installed at other planned locations.

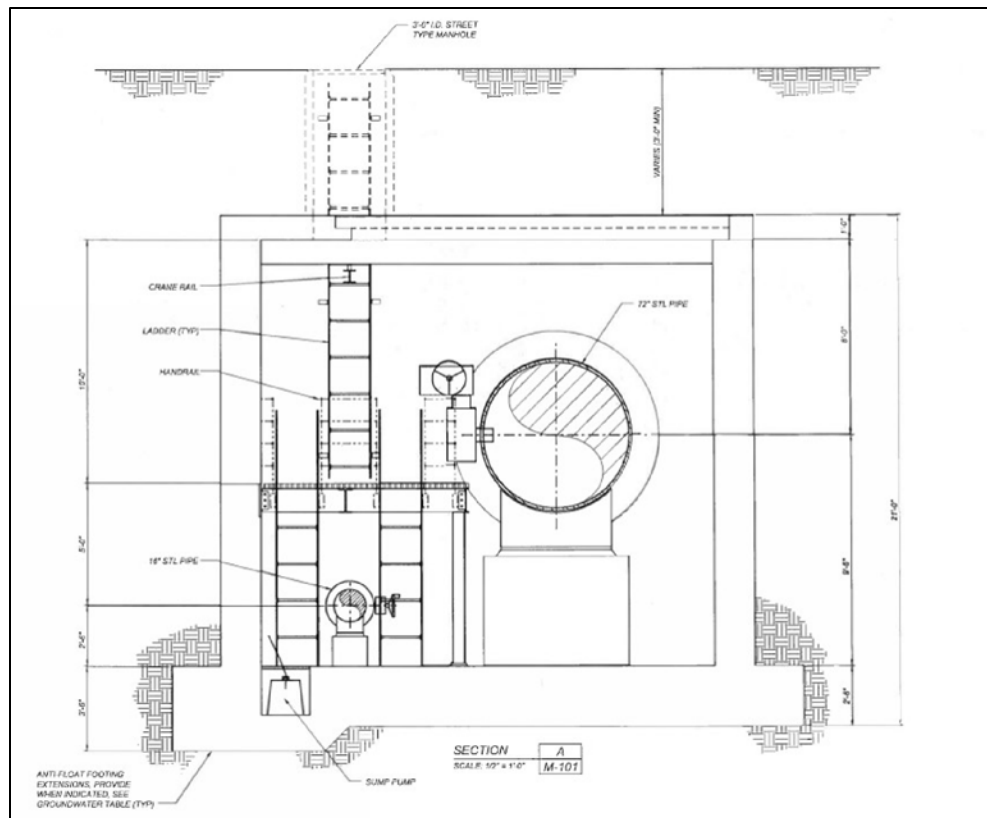


Figure 3-5. Valve Vault

The California Department of Public Health requires that all treated water supply systems be protected from potential contamination through air release and vacuum valves. Air release/vacuum valves allow air into or out of the pipeline during dewatering or filling of pipe to control air pressure in the pipe. These facilities are typically located in above-ground facilities, so any existing below-ground air release/vacuum valve assemblies along the pipeline would be relocated above ground. The relocation from below ground to above ground would require shallow trenching from the existing below-ground vault to a location along the sidewalk. For the purposes of this analysis, the trench is assumed to be approximately 24 inches wide and about 4 feet deep. The length of the trench would vary with the size of the street to be crossed. The new air valves would be located in small enclosures along the sidewalk and within the public-right-of way. **Figure 3-6** shows a typical above-ground valve enclosure.

Electrical panels that provide power to equipment from within the buried equipment vaults would be located within small above-ground enclosures along sidewalks. The size of the electrical panels would vary; for analysis purposes they are assumed to be approximately 8 to 10 feet high and approximately 3 feet wide. New electrical panels would be constructed as needed. In remote areas, telemetry equipment to communicate billing information from meters and information from other monitoring equipment to Metropolitan headquarters may also be installed. Vent stacks to vent air pressure from buried structures would also be rehabilitated or constructed as needed.



Figure 3-6. Typical Above-ground Valve Enclosure

3.6.2.3 Pumpwells and Blow-off Structures

Pumpwells and blow-off structures along pipelines are used to dewater the pipeline quickly into natural creeks, channels, waterways, and storm drains when a shutdown of the pipeline is necessary. Pumpwells allow temporary pumps to be placed to dewater a pipeline. Blow-offs allow gravity to dewater the pipelines. Pumpwells and blow-offs also provide access points for routine maintenance or pipeline inspection. These structures are typically located within the buried equipment vaults. In some cases, additional pumpwells and blow-off structures may be constructed during pipeline rehabilitation.

3.6.3 Temporary Construction Components

The following components would be present during rehabilitation only. After construction, these components would be removed and the sites returned to pre-construction conditions.

3.6.3.1 Contractor's Work Areas

The contractor's work area allows for construction activities to occur safely and efficiently within a construction site. These activities include excavation, shoring, pipe removal, pipeline rehabilitation, electrical panel installation, and construction support activities such as ventilation, dewatering, pipe disinfection, and refilling. The contractor's work area would be defined in the construction contract

drawings and would vary in size depending on existing constraints, such as road width and local traffic, and construction methods and equipment.

3.6.3.2 Excavation Areas

An excavation area is defined as the entry or exit portal that exposes the underground PCCP section of the pipe or equipment vault to be rehabilitated. It is the trench in which new pipe would be installed. Multiple excavation areas would be needed to rehabilitate the pipelines and buried equipment vaults included in the proposed program. Excavation areas would vary in size. For analysis purposes excavation areas are assumed to be approximately 20 feet wide and 50 feet long. Existing surface improvements, such as road pavements, sidewalks, and landscaping, would be removed at each excavation area, and soils would be excavated and temporarily removed from the site to expose the existing pipeline. Excavation areas are assumed to be approximately 15 to 20 feet deep; however, these dimensions would vary site-to-site based upon the size and depth of the pipe or vault to be rehabilitated. Other potential constraints include interferences with existing third-party utilities and soil conditions and depth to groundwater.

Spacing of excavation areas would also vary. For purposes of analysis, excavation areas are assumed to be spaced approximately 1,500 feet apart along the existing pipeline alignment (or approximately three per mile). Actual excavation area spacing would be determined by the number of horizontal and vertical bends within the existing alignment and in many cases would be more than 1,500 feet. Once rehabilitation is complete, the excavation area would be backfilled with soils originally excavated, and the surface of each excavation area and surrounding work zone would be restored to existing conditions. This would involve re-paving existing roads, replacing or repairing existing sidewalks, and replanting landscaping.

3.6.3.3 Staging Areas

Staging areas would be established to provide space to store pipes or liners, construction materials such as shoring boxes and pipe bedding materials, and equipment such as excavators and dump trucks. The staging area would also be used for the contractor trailer and worker parking. Typically, staging areas would be located adjacent to the contractor's work areas; however, potential space limitations could require that they be located farther away. Generally, staging areas would also accommodate existing surface improvements (e.g., trees) and require little modification.

The sizes of a staging area would be dependent upon proximity to the proposed program component, land leasing fees, contractor work methods, land uses in the vicinity, and the services the staging area would provide. Staging areas may be located on Metropolitan fee property or on private or public property. Agreements would be negotiated with the appropriate parties as necessary prior to establishing a staging area. Upon completion of construction work, the staging areas would be returned to their existing condition, as appropriate and pursuant to any agreements. For example, if the staging area was previously paved and the pavement was damaged during staging, Metropolitan would re-pave the area.

3.7 Program Coordination Activities

3.7.1 Construction Activities

Pipeline construction activities can be compared to a moving assembly line. The first step would be dividing the pipeline project into manageable lengths. For a pipeline where certain portions are to remain in service during construction, these lengths would be determined by the locations of existing or new isolation valves and pipeline bulkheads. These isolation valves and bulkheads would be used to isolate or stop water flows in sections of pipeline for repair, maintenance, or safety purposes. Each of the program pipelines has several isolation valves at strategic locations along the pipeline alignments.

The remaining construction activities are listed below. In a typical project, there would be multiple construction contracts, depending on the activity being performed.

- Mobilization of contractor's construction equipment
- Procurement and fabrication of equipment and piping
- Site preparation, including installation of temporary fencing and traffic controls
- Pre-construction survey, including locating and relocating third-party utilities to prevent accidental damage
- Trenching of entry and exit pipe portals and new pipeline alignments
- Pipeline relining and/or installation of new pipe construction
- Site excavation for equipment vaults and equipment vault rehabilitation, including installation of new valves, meters, and other appurtenant equipment
- Backfilling of the excavations and testing
- Site restoration

Most of the PCCP rehabilitation activities would take place along the existing pipeline alignments in urban areas, within Metropolitan-owned and public rights-of-way. Metropolitan would coordinate with its member agencies as needed (identified in sidebar) prior to and during rehabilitation activities, thus reducing the potential for a service interruption. In addition, prior to the commencement of construction activities, Metropolitan would coordinate with each affected local jurisdiction to minimize or mitigate noise and traffic conflicts during construction work hours as they may vary according to jurisdiction. Working with the local jurisdictions, Metropolitan would submit a traffic control plan, which would be approved by the respective jurisdiction.

Metropolitan's Member Water Agencies

City of Anaheim
 City of Beverly Hills
 City of Burbank
 City of Compton
 City of Fullerton
 City of Glendale
 City of Long Beach
 City of Los Angeles
 City of Pasadena
 City of San Fernando
 City of San Marino
 City of Santa Ana
 City of Santa Monica
 City of Torrance
 Calleguas Municipal Water District
 Center Basin Municipal Water District
 Eastern Municipal Water District
 Foothill Municipal Water District
 Inland Empire Utilities Agency
 Las Virgenes Municipal Water District
 Municipal Water District of Orange County
 San Diego County Water Authority
 Three Valleys Municipal Water District
 Upper San Gabriel Valley Municipal Water District
 West Basin Municipal Water District
 Western Municipal Water District of Riverside County

Where possible, construction activities would occur during daytime hours, Monday through Friday and potentially Saturday. However, in order to prevent significant water delivery interruptions, accommodate a request from an affected jurisdiction, or expedite rehabilitation, it is likely that construction activities on some construction reaches would occur outside the hours allowed by local regulations. ~~could proceed outside of the normal daytime hours (i.e., during the nighttime or on Sundays). For this program level analysis, only daytime, Monday through Friday, construction is analyzed, because impacts related to weekend and nighttime work would be site specific. Therefore, any projects requiring work on weekends or at night would require additional environmental analysis and documentation prior to construction.~~

Protection and/or relocation work for existing utilities may be needed in some locations to avoid construction interferences and provide an adequate work area for rehabilitation activities. Metropolitan would work with utility owners to coordinate such activity on a case-by-case basis, depending on the particular circumstances of the program component.

Key construction activities are described below. Metropolitan would implement a number of environmental commitments as part of each activity as referenced below, where appropriate, and as fully described and detailed in Section 3.9, *Environmental Commitments*.

3.7.2 Pre-Construction and Post-Construction Activities

Procurement of valves and piping materials are considered long-lead items that are started prior to issuing a construction contract for pipeline rehabilitation. Some of the custom-designed valves would be procured directly by Metropolitan from valve suppliers, while off-the-shelf catalog valves would be procured by the construction contractor. The valves would be fabricated off site and shipped by truck or rail. Valves fabricated overseas may be shipped by vessel. Steel pipe liner would be procured from pipe suppliers by Metropolitan or by the construction contractor. The steel liner would be fabricated off site and shipped by truck or rail.¹

Pre-construction and post-construction activities include the mobilization and demobilization of the contractor's forces and equipment necessary for performing the required work. Mobilization includes all activities and associated costs for transportation of the contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; and premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable. Demobilization includes all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site, including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this contract.

3.7.3 Site Preparation

Each program component would first require site preparation. This would include establishing specific work zones, placing temporary fencing and signage around the construction work zones, and establishing local and regional staging areas for storing construction equipment and materials. Procedures described in approved Temporary Construction Permits would also be implemented at this time. These would include requirements for directing traffic, establishing traffic detours,

¹ At this time, fabrication is anticipated to occur in Adelanto, California and in Mexico.

establishing and installing signage for new temporary speed limits, and placing traffic control signs to ensure safe vehicular, pedestrian, and bicycle traffic during rehabilitation activities. Traffic control measures would remain in place until site restoration is complete. Because much of the PCCP rehabilitation activities would take place along the existing pipeline alignments in urban areas, within Metropolitan-owned and public rights-of-way, features such as pavements, sidewalks, and vegetation would be removed as part of site preparation work.

3.7.4 Excavation Areas

Excavation to access the existing pipeline would be the first major construction activity for pipeline rehabilitation and for rehabilitation of the equipment vault structures. In most cases, steel shoring would be placed within the excavated area to minimize the size of the excavation area. The depth of the excavation site depends on the program component as detailed in Section 3.6.1, *Primary Components*. Soils removed as part of excavation may be stockpiled within the footprint of the program component and reused or trucked to and stored at one of the staging areas. Soils identified as hazardous or contaminated would be handled, transported, and treated per all federal, state, and local existing hazardous materials regulations.

As part of this activity, third-party utilities would be identified and relocated, if necessary, and groundwater dewatering, if required, would occur. Water removed from the excavation would be tested prior to discharge into either existing stormwater drains or flood control facilities or disposed of off site in accordance with applicable laws and regulations.

3.7.5 Rehabilitation Activities

3.7.5.1 Steel Cylinder Relining with Collapsed Pipe and Steel Pipe Sliplining with Non-Collapsed Pipe

After the pipe has been isolated and dewatered, access to the pipeline would be made through the excavation areas. Within an excavation area, specialized saws would be used to cut out a section of the existing PCCP to create an entry portion that would be used to provide access to the pipe being rehabilitated. The cut portion would be removed from the excavation area by crane.

For all confined space work, blowers and fans would be needed to maintain safe subsurface working conditions. These blowers and fans would be set up around the site of the existing buried structures within the street once site preparation occurred, as described above.

For steel cylinder relining with collapsed pipe, new collapsed steel liners would be lowered into the excavation site, compressed using steel bands, and then inserted into the pipeline entry portal by crane. Customized pipe carrier equipment would be used to slide the steel liner into its final position inside the existing pipeline. Once the liner is placed, the bands would be cut and the steel liner would be expanded into circular pipe and welded in place. (For steel pipe sliplining with non-collapsed pipe, welding is only necessary at pipe section ends.) After welding, grouting would take place by injecting grout into the space between the existing pipeline and the new liner. Mortar lining then occurs by spraying mortar on the inside of the steel liner for protection.

After mortar lining is applied, all construction workers, equipment, and materials would be removed and the pipe cleaned of all debris and rinsed with water. Rinse water would be collected, filtered to remove solids, treated as necessary to meet regulatory requirements, and then discharged from the

pipe to stormwater piping or channels. Once rehabilitation is complete, Metropolitan would restore service to its customers.

3.7.5.2 New Pipeline Replacement

Pipeline replacement would involve removing existing pipe and installing new pipe. New pipe construction is needed in locations where existing pipe cannot be rehabilitated with steel liners due to construction constraints, hydraulic capacity requirements, or operational constraints. The new pipe would be sized to accommodate needed flows and would generally be constructed in a new alignment that is parallel to the existing pipe.

For new pipeline replacement, the pipeline would first be divided into manageable lengths. Pipeline construction would then proceed as follows.

1. Backhoes or excavators would be used to excavate a pipeline trench, with the bottom of the trench extending 2 to 3 feet below the existing pipe.
2. The excavation would be shored with vertical walls in congested urban areas, or sloped without shoring in open areas.
3. The existing pipe would be then demolished and removed.
4. The bottom of the excavation would be prepared with bedding material.
5. The new pipe would be installed using a crane or large excavator.
6. Each pipe section would be welded to each other.
7. After welding, the new pipe may be encased in concrete, as applicable.
8. The trench would be backfilled with cement slurry, sand backfill, native material, or a combination thereof.
9. The line would then be disinfected and put into service.

The site would then be restored to its preconstruction condition, and any excess materials would be removed and hauled off site.

3.7.5.3 Pipeline Isolation for Rehabilitation Activities

Preventing water flow in sections of pipeline for maintenance or safety purposes would be accomplished using isolation valves or temporary bulkheads. Regarding isolation valves, each pipeline has several isolation valves at strategic locations along the pipeline alignment that can be used to isolate or stop water flows. These isolation valves are normally left open; however, when repairs or maintenance of a pipeline are needed, the isolation valves would be shut to stop the flow of water.

In some circumstances, when shorter sections of pipeline need to be isolated to allow continued service to member agencies, temporary pipeline bulkheads would be installed instead. Bulkheads work similarly to isolation valves, but instead of shutting off flow using a mechanical device, a physical structure or partition composed of steel plates welded to the liner interior is installed to stop water flow. Bulkheads may be required along various sections of the pipelines to isolate one section of the pipeline from another and to ensure continued and reliable water supply delivery to member agencies while rehabilitation is being performed on another section of pipe. Bulkheads would be installed temporarily and may be required to stay in place up to 6 months while the

relining work is being completed. Temporary bulkheads would be removed once rehabilitation has been completed.

The actual dimensions of the bulkhead excavation site would be similar to that of an excavation to an access portal for pipe relining or sliplining. Once the bulkhead is installed, the original soil that was removed to access the pipeline and insert the bulkhead would be backfilled. The surface of each bulkhead location and surrounding excavation area would then be restored to its pre-construction conditions. In some locations, temporary site restoration would remain in place until the bulkhead is removed. Thereafter, permanent surface restoration would be completed. A manhole may be installed at some locations to provide access to the pipeline after rehabilitation. Some bulkhead sites would remain open so that other program components could be rehabilitated. At other locations, soils would be backfilled and covered once the bulkhead was in place.

3.7.5.4 Equipment Vaults

Similar to pipe relining and sliplining rehabilitation, access to existing equipment vaults would be accomplished through the excavation areas after the pipe has been isolated and dewatered. Within an excavation area, the concrete lid of the existing vault would be lifted and the existing equipment would be removed and replaced. For rehabilitation of smaller equipment, excavation may not be required and equipment could be replaced by access through existing manholes.

Construction of new equipment vault structures would require larger and deeper excavations in order to shore the excavation and construction vaults using reinforced concrete materials. The vault structure would be constructed first and then the equipment would be installed, using large cranes. In some cases, existing vaults would be demolished.

For demolition of the existing vault structures, Metropolitan would follow standard demolition guidelines, including the following.

- No stockpiling of demolition debris would be allowed on site.
- Removal and disposal of all material would be performed in accordance with federal, state, and local laws governing waste disposal.
- Blasting would not be permitted.
- All demolition requirements (including removal of driveways, pavement, sidewalks, or curbs) would be included in the final design phase.
- A list of salvage items would be prepared and reviewed by Metropolitan during final design.

3.7.5.5 Air Release and Vacuum Valves

In the locations requiring air valves to be relocated above ground, construction workers would remove existing air valves and associated appurtenance structures. They would identify on-site utilities and relocate them during rehabilitation, as required. Trenching would then occur from the location of the existing air valve, across the existing road, to an existing sidewalk. The trench would be covered with large plates at night when construction is not occurring to allow cars to use the existing road. At the location on the sidewalk, a new air valve would be installed and enclosed in a metal box, which would sit on a new concrete pad. The trench would contain a pipeline of less than 12 inches in diameter extending from the existing manhole to the new air valve location on the sidewalk.

3.7.6 Site Restoration

Once rehabilitation of a program component is complete, if excavation was required, the following site restoration activities would be performed.

- The excavation site would be backfilled and compacted and the ground surface would be restored to its prior conditions. Previously excavated materials would be used for backfill, where appropriate.
- Excess excavation materials would be hauled off site nearby to project sites requiring imported fill or to landfills.
- Salvage items would be returned to Metropolitan.
- Remaining items would be removed from the footprint of the program component or the staging areas and disposed of.
- Landscaping would be replaced and restored to pre-construction conditions.
- Traffic control measures would be removed after site restoration activities are complete.

Site restoration would also include restoration of existing roads or sidewalks damaged during rehabilitation activities. This could involve patching discrete locations that were opened to access the pipeline or air valve, or it could involve curb-to-curb pavement of larger sections of existing roads. The decision for the type and size of re-paving would be made during discussions with local jurisdictions about traffic control measures. Once rehabilitation of a specific contract package or section of pipeline is complete, staging areas would also be restored to pre-existing conditions.

3.7.7 Construction Equipment and Hauling

Construction equipment required for various proposed program components is listed in **Table 3-2**.

Program equipment and debris hauling would utilize the pipeline right-of-way to get to adjacent surface streets, and then continue to main arterial routes. Depending on the pipeline, average hauling distance is anticipated to be approximately 20 miles.

The total number of vehicles in use would likely vary. Approximately two daily truck trips would be required for site preparation and excavation and site restoration. Eight daily truck trips would be required for rehabilitation of the pipeline, air valves, and valves. While some variation may occur in actual numbers, types, or frequency of use of vehicles during the work, anticipated truck usage is estimated to be the following.

- Four dump trucks (2 trips per day each for a total of 8 trips per day)
- Six semi-trucks with trailers (2 trips per day each for a total of 12 trips per day)
- Four water trucks (8 trips per day each for a total of 32 trips per day)
- Twenty-four pick-up trucks (4 trips per day each for a total of 96 trips per day)

Table 3-2. Common Construction Equipment Needed for Rehabilitation

Equipment	Program Component					
	Excavation Site for Pipeline Relining	Bulkhead	Staging Area*	Pipeline Replacement/ Parallel Piping	Vault Structure/ Meter Manhole	Air Valve Relocation
Asphalt Paver	X	X	X	X	X	
Backhoe Loader	X		X	X		X
Confined Space Blower/Fan Ventilation Fan		X	X	X		X
Crane	X	X	X	X	X	
Delivery Trucks	X	X	X	X	X	X
Drum Roller Compactor	X		X	X		
Compactor (soils/asphalt)	X	X	X	X	X	X
End Dump Truck	X	X	X	X	X	X
Excavator	X	X	X	X	X	
Flat Bed Truck	X		X	X		
Fork Lift	X		X	X	X	
Front End Loader	X	X	X	X	X	
Maintenance Utility Truck with Mounted Crane			X	X	X	X
Pneumatic Tools	X	X	X	X	X	X
Slip Lining Cart	X		X	X		
Street Sweeper	X	X	X	X	X	X
Water Truck	X	X	X	X	X	
Welding equipment	X	X	X		X	
Concrete Saw	X				X	
Concrete Coring Machine	X				X	X
Transit Mixed Concrete Truck	X				X	
Concrete Pump	X	X	X	X	X	X
Generator	X	X	X	X	X	X
Compressor	X	X	X	X	X	X
<i>* The equipment identified for staging areas would be stored at any one of the staging areas.</i>						

3.8 Rehabilitation Sequence and Phasing

The PCCP rehabilitation program is designed to be completed over an approximately 20-year period. The proposed program would be planned to provide considerable flexibility in the sequence of implementation. Factors such as pipeline risk, water supply availability, regional and local demands, operational restrictions, and individual member agency capabilities would change throughout the life of the planned 20-year program. Flexibility to alter the planned rehabilitation sequence in response to changing factors would be an essential element of the proposed program.

In general, pipelines with the highest risk of a reduced service life would be rehabilitated first. Sections of the pipeline of significant length and without service connections to member agencies would also be prioritized over those that would cause more potential water delivery interruptions. It is anticipated that rehabilitation would be scheduled during months with low water demand (i.e., late fall, winter, early spring). Final prioritization of phasing for rehabilitation activities would consider the following.

- Condition of the PCCP lines: Metropolitan will continue to monitor and assess the condition of its PCCP lines on a yearly basis. Changes in relative risk between pipeline segments may result in the need to alter the planned rehabilitation sequence or timing.
- Metropolitan's available sources of supply: There is a large variation in wet versus dry year water supply availability. Water supply availability has significant impacts on how Metropolitan operates its overall system.
- Operational Restrictions: Metropolitan's water delivery system comprises a number of interconnected pipelines. Operational restrictions or work in some areas will affect the ability to shut down others.
- System Demand: Metropolitan's system demands vary, as its member agencies manage their own water systems and supplies. Rehabilitation sequence or timing may be adjusted due to high or low demands within certain portions of the system.
- Local Disruptions: Coordinating with cities to avoid conflicts with other public improvement projects, moratoriums, community events, and seasonal events as well as local business disruptions.
- Member Agency Considerations: Coordinating with member agencies to determine the length of any required outage to their service connections.

Due to overall system constraints, some feeders cannot be rehabilitated at the same time as others. Multiple pipelines may be rehabilitated concurrently. Rehabilitation can also alternate between pipelines based on their prioritization.

Other factors to improve flexibility would also be considered, including the following.

- Preparing much of the design up-front, so that multiple contract packages would be available for construction at any given time if adjustments are needed.
- Issuing construction contracts that involve multiple excavation sites that may be constructed concurrently or sequentially depending on water supply demands, requirements from jurisdictions, and construction constraints.

- Implementing multiple construction contracts at the same time.
- Reprioritizing construction contracts from different pipelines and making them interchangeable between feeders, depending on the proposed program needs. For example, a construction contract may be implemented on the Second Lower Feeder and a subsequent construction contract may then be completed on the Sepulveda Feeder.

In terms of the specific activities for each pipeline, each pipeline would be divided into sections determined by the location of isolation valves and/or bulkheads. Additional isolation valves and bulkheads may be added to minimize potential interruptions of water delivery to member agencies while the pipeline is being rehabilitated. For example, the Second Lower Feeder is proposed to be divided into multiple segments. These sections can be hydraulically isolated, one at a time, which would allow for rehabilitation activities to take place within one segment of pipeline while water deliveries continue in other sections. The length of the pipeline within each contract package would vary, depending upon the distance between isolation valves and bulkheads. Constructability variables, such as the number and the degree of pipe angles at horizontal and vertical turning point locations, would be adjusted as needed based on other factors such as conflicts with other underground utilities, traffic control, and proximity to sensitive receptors.

In terms of schedule, the length of each pipeline within a contract package would primarily dictate the duration of various rehabilitation activities. Once the pipeline has been divided into sections, the period to complete each section would also vary depending on the length of the section, but generally, all activities on a section would be completed within one shutdown season (fall through spring). Sections may overlap with one another, and several rehabilitation activities within a single contract package could be completed simultaneously. Different sections may also overlap in order to expedite construction and minimize any potential service interruptions. **Table 3-3** summarizes program components, expected range of duration, and considerations associated with the maximum duration. These durations include site preparation and excavation, pipeline isolation and dewatering (including bulkhead construction if needed), rehabilitation of PCCP, isolation valve vault structures, valves, and site restoration. Durations are estimates and timeframes could be shortened or expanded depending on construction constraints, requests from various jurisdictions, and unforeseen impacts.

It is anticipated that approximately 14,300 linear feet of pipeline can be rehabilitated within a 9-month period.

Table 3-3. Program Components Average Durations

Project Component	Approximate Duration	Duration Considerations
Primary Components		
Steel cylinder relining with collapsed pipe	6–9 months	<ul style="list-style-type: none"> • Steel liner segments can be installed at a rate of 200 linear feet per day. • Welding and testing can occur at a rate of 120 linear feet per day. • Grouting can occur at a rate of 600 feet per day. • Cement mortar lining can occur at a rate of 500 feet per day (field applied).
Steel pipe sliplining with non-collapsed pipe	6–9 months	<ul style="list-style-type: none"> • Steel liner segments can be installed at a rate of 200 linear feet per day. • Welding and testing can occur at a rate of 180 linear feet per day. • Grouting can occur at a rate of 600 feet per day. • Cement mortar lining can occur at a rate of 1000 feet per day (shop applied)
New pipe replacement (segment)	12 months	<ul style="list-style-type: none"> • 9,000 feet. • Depends on location and construction constraints.
Secondary Components		
Buried equipment vaults	6 months	<ul style="list-style-type: none"> • Could be concurrent with pipeline relining
Manholes & above-ground enclosures: air release/vacuum valves, vent stacks, meter cabinets/ electrical panels	4 weeks	<ul style="list-style-type: none"> • Rehabilitation of air release valves could occur during the rehabilitation of existing PCCP pipe. However, when necessary, rehabilitation could also be separate and independent in location and time from slip-line or new pipe installation.
Pumpwells & blowoff structures	1 month	<ul style="list-style-type: none"> • Could be concurrent with pipeline relining
Temporary Construction Components		
Contractor's work areas	12 months	<ul style="list-style-type: none"> • Depends on the final start and completion date of a construction package.
Excavation areas	6–9 months	<ul style="list-style-type: none"> • Up to 4 months for each excavation site
Staging areas	12 months	<ul style="list-style-type: none"> • Depends on the final start and completion date of a construction package.
Program Coordination Activities		
Pre-construction activities	3 month	<ul style="list-style-type: none"> • Includes procurement & mobilization
Site Preparation	1 month	<ul style="list-style-type: none"> • Some concurrent activities
Site Restoration & demobilization	3 months	<ul style="list-style-type: none"> • Most sites less; some concurrent activities

3.9 Environmental Commitments

Metropolitan or its contractors would implement the environmental commitments listed below during rehabilitation activities. These commitments are incorporated into the proposed program.

- Rehabilitation activities would generally occur during daytime hours. Construction at night may be necessary to respond to pipeline operational issues, to address traffic related concerns, or to implement shutdown and refill periods, or at the request of the jurisdiction. To expedite construction, as allowed by or in coordination with the local affected jurisdiction(s), construction may occur on Saturdays. Generally construction is not expected to take place on Sundays or on holidays.
- Rehabilitation activities would comply with South Coast Air Management District's Rule 403 to minimize fugitive dust, construction traffic, and particulate matter releases.
- Rehabilitation activities would incorporate water quality Best Management Practices, including a Stormwater Pollution Prevention Plan, as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management.
- A Spill Emergency Response Plan would be prepared prior to the start of construction and be responsible for ensuring that hazardous materials and waste are handled, stored, and disposed of in accordance with applicable federal and state laws and regulations. All materials and fuels within the staging areas and excavation sites/work zones would be stored in a manner that reduces the potential for spills.
- A traffic control plan would be prepared and implemented in coordination with the affected local government jurisdictions. The traffic control plan would include safety measures such as posting of signs identifying excavation sites, work zones, and staging areas and utilizing flagmen to direct vehicle traffic.
- Each of the excavation sites/work areas and staging areas would be fenced and screened.

Chapter 4

Environmental Analysis

4.0.1 Introduction

This chapter introduces the resource sections, which contain the various impact analyses, and discusses the organization of the Programmatic Environmental Impact Report (PEIR) and terminology used throughout the PEIR. It explains the overall methodology used to analyze impacts, along with the methodology for the cumulative analysis. This section also summarizes the permits that may be required for implementation of the program components. Finally, it provides a general regional setting to orient the readers prior to reading the resource-specific sections.

4.0.2 Environmental Analysis Scope and Organization

4.0.2.1 Resource Sections

As previously discussed in Chapter 2, *Introduction*, Sections 4.1 through 4.14 contain a discussion on the potentially significant impacts of the proposed program. Each of these sections corresponds with a specific resource area. To assist the reader in comparing information about the various environmental issues, each resource chapter is organized in the following manner.

- **Existing Conditions.** Describes the existing or baseline conditions in the study areas for the proposed program.
- **Regulatory Framework.** Provides the federal, state, regional, and local regulations that apply to the proposed program.
- **Thresholds and Methodology.** Identifies the thresholds for determining whether a significant impact would occur with implementation of the proposed program, based on California Environmental Quality Act (CEQA) guidance and, in some cases, resource-specific guidance. Describes the methods used for the analysis of impacts and any assumptions that were made in the analysis of impacts.
- **Impacts Analysis.** Presents the evaluation of impacts that would result from implementation of the proposed program, and any mitigation measures that would be necessary to reduce these impacts. Includes the analysis of significant cumulative impacts for each environmental resource area, evaluated by considering the impacts of the proposed program when combined with impacts of other projects and programs within the resource study area.

The impact analysis compares the proposed program to the existing conditions, also known as the CEQA baseline.

When considering the existing conditions and impacts for each resource, enough information is sometimes available to make a determination of whether or not there would be significant impacts and whether there is mitigation available to reduce these impacts to less-than-significant levels. In other cases, however, the lack of specific construction sites and methods means that specific impacts of the proposed program cannot be determined, and supplemental environmental documentation

will be necessary once these projects are further defined. The need for supplemental environmental analysis is identified in the analysis of the proposed program, where appropriate.

In most cases, the analysis of each resource is organized geographically. For the alignments in the proposed program, the analysis is organized starting at the water origin to the alignment termination.

4.0.2.2 Methodology and Terminology Used in the Analysis

In evaluating the potential impacts of the proposed program, the level of significance is determined by applying the thresholds of significance presented in each resource area. The proposed program was initially evaluated through the Initial Study Checklist (Appendix A). Impacts on resources were designated as having no impact, a less-than-significant impact, or a potentially significant impact. The environmental analyses in Sections 4.1 through 4.14 include a detailed discussion and final impact determination for the proposed program that were determined to have a potentially significant impact in the Initial Study Checklist.

To determine significance, the proposed program is compared to a baseline condition. The difference between the proposed program and the baseline is then compared to a threshold to determine if the difference is significant. Section 15125 of the State CEQA Guidelines requires that an EIR include a description of the physical environmental conditions in the vicinity of a proposed action that exists at the time the Notice of Preparation is published. This environmental setting will normally serve as the baseline by which the lead agency determines whether an impact is significant. The lead agency may also consider a baseline condition that better reflects fluctuations resulting from cyclical trends, such as drought and wet weather. The baseline to which the proposed program is compared is described in each resource section to determine the significance of impacts.

The following terms are used to describe each impact in each resource section.

- **No impact.** A designation of no impact is given when no adverse changes in the environment are expected.
- **Less-than-significant impact.** A less-than-significant impact is identified when the proposed project or proposed program would cause no substantial adverse change in the environment (i.e., the impact would not reach the threshold of significance).
- **Significant impact.** A significant (but mitigable or avoidable) impact is identified when the proposed project or proposed program would create a substantial or potentially substantial adverse change in any of the physical conditions within the affected resource area. Such an impact would exceed the applicable significance threshold established by CEQA, but would be reduced to a less-than-significant level by application of one or more mitigation measures.

In some cases this may be described as a potentially significant impact, if the level of impact cannot be known at this program level because insufficient information is available about the location or timing of construction. However, with this level of impact, implementation of the identified mitigation measure would reduce the impact to a less-than-significant level regardless of location or timing, as long as the construction methods used were consistent with the typical construction scenarios described in the analysis.

- **Mitigation.** Mitigation refers to measures that would be implemented to avoid or lessen potentially significant impacts. Mitigation includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing the impact by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures would be required as conditions of plan approval and would be monitored to ensure compliance and implementation.

- **Significant unavoidable impact.** A significant unavoidable impact is identified when an impact that would cause a substantial adverse effect on the environment could not be reduced to a less-than-significant level through any feasible mitigation measure(s).

In some cases this determination is made because there is not sufficient information available at the program level to ensure that mitigation could reduce the impact to a less-than-significant level. In such cases, the impacts are considered to be potentially significant and unavoidable; and additional analysis and CEQA documentation would be required once project-level information is available.

- **Residual impact.** Residual impact is the level of impact after the implementation of mitigation measures. The residual impacts would be expressed as no impact, less-than-significant impact, significant impact reduced to less than significant by mitigation, or significant and unavoidable impact, as defined above.

It should be noted that in most cases, the analysis of impacts is focused on those that would occur during construction only. Because the proposed program includes rehabilitation of existing pipelines, with most of the components located underground, once construction is complete, the rehabilitated pipeline would operate in the same manner as in the existing condition, but with a lower risk of failure and with additional valves and other components that would improve functionality of the system. With the exception of the addition of small utility boxes housing located above ground, generally within public rights-of-way, the post-rehabilitated condition would be identical to the existing (baseline) condition. There would be minimal impacts related to operation of the program.

4.0.3 Cumulative Analysis Methodology

The State CEQA Guidelines define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (State CEQA Guidelines Section 15355). According to State CEQA Guidelines Section 15130, an EIR shall discuss cumulative impacts of a project when the project’s incremental effect is cumulatively significant. A cumulative impact analysis must include either: (1) a list of past, present, and reasonably anticipated future projects (“list approach”); or (2) a summary of projections contained in adopted plans designed to evaluate regional or area-wide conditions (“plan approach”). A cumulative impact analysis considers the collective impacts posed by individual plans and

projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place within a study area and/or over a period of time.

At the program level, the list approach is not possible because the specific location and timing of construction is not known, so the potential for the impacts of the proposed program components to combine with other specific projects is not known. Instead, this document uses a plan approach, looking at ongoing and planned growth patterns in the vicinity of the feeders to identify where there would be the potential for program component impacts to combine with other construction impacts to result in cumulative impacts.

4.0.4 Permits and Approvals

Federal, state, and local agencies may rely on information in this PEIR to inform them in their decision-making regarding issuance of specific permits related to construction or operation. This PEIR identifies federal, state, and local permits and authorizations that would be required prior to construction for future projects in the proposed program, as well as the agencies that the Metropolitan Water District of Southern California (Metropolitan) will likely need to coordinate with regarding these future projects. These may include:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- California Air Resources Board portable equipment registration and/or South Coast Air Quality Management District permit to operate for construction equipment
- California Department of Fish and Wildlife
- California Department of Transportation, Districts 7, 8, and 12 encroachment permits
- California Division of Occupational Safety and Health Tunnel Safety Order compliance
- Permits and traffic control plans from local jurisdictions
- Conformance with applicable State Water Resources Control Board National Pollutant Discharge Elimination System and/or Municipal Separate Storm Sewer System requirements
- Review and approval by Long Beach Airport, Van Nuys Airport, and the Federal Aviation Administration
- Orange County Flood Control District, Los Angeles County Flood Control District, and San Bernardino County Flood Control District permits

4.0.5 Regional Environmental Setting

The proposed program is located in multiple Southern California jurisdictions and topographies. This section provides a brief overview of the regional setting of the various pipelines to orient the reader. Specific characteristics of the environmental setting relevant to the impact analysis are described in the resource sections that follow this chapter.

The proposed program extends through numerous cities and counties. Because these pipelines are located primarily within Metropolitan-owned rights-of-way and public roads, the general plan land use designations are typically related to Public Services, Utilities, or Open Space. However, the general plan land use designations also include, but are not limited to, General Commercial,

Residential, Limited Manufacturing, Business Park, Recreation, and Public Facilities. California Government Code Section 53091 exempts Metropolitan, as a regional public water purveyor and utility, from local zoning and building ordinances. Zoning designations are typically related to Public Services, Utilities, or Open Space. However, the zoning designations also include, but are not limited to, Commercial Recreation, Residential (various densities), Light Manufacturing, Public Facilities, and Office.

4.0.5.1 Allen-McColloch Pipeline

The Allen-McColloch Pipeline was constructed in 1979 by the Municipal Water District of Orange County (MWDOC), and Metropolitan took ownership of the pipeline in 1995. The 26-mile pipeline extends from the Robert Diemer Water Treatment Plant's Finished Water Reservoir to the El Toro Reservoir in the city of Mission Viejo. It serves MWDOC and its retail agencies, including Irvine Ranch Water District, Santa Margarita Water District, El Toro Water District, and Moulton Niguel Water District.

There are two primary portions of the pipeline: the northern 17-mile steel pipe portion, which extends from Yorba Linda to Irvine, and the 9-mile southern prestressed concrete cylinder pipe (PCCP) portion, which extends from Irvine to Mission Viejo. The PCCP portion varies in diameter from 54 to 78 inches. The PCCP portion of the Allen-McColloch Pipeline begins just north of Rattlesnake Reservoir in the city of Irvine and continues in a southeasterly direction for approximately 6 miles. It travels under private extensions of Jeffrey Road, Bee Canyon Access Road, the State Route 133 (SR-133) toll road, ramps connecting to the State Route 241 (SR-241) toll road, and Portola Parkway. The majority of this part of the alignment passes through agricultural or undeveloped foothills of the Santa Ana Mountains within Metropolitan's permanent right-of-way. The nearest residences to this part of the pipeline occur in Irvine to the southeast of the SR-133/SR-241 interchange. These residences are within 0.1 mile of the Allen-McColloch Pipeline alignment and are part of the Portola Springs development. After the pipeline extends under Portola Parkway, it continues in a southeasterly direction through undeveloped land before extending under Alton Parkway and into the city of Lake Forest adjacent to light industrial and commercial land uses. It extends under Bake Parkway, traveling adjacent to residential land uses and under Serrano Creek. The Allen-McColloch Pipeline then bears southwest along Canada Road, through residential land uses, and under Lake Forest Drive, where it continues south under Old Trabuco Road and Trabuco Road adjacent to El Toro Cemetery. It continues along Trabuco Road approximately 1 mile, adjacent to residential land uses, and extends under Aliso Creek and into the city of Mission Viejo. Once in Mission Viejo, the Allen-McColloch Pipeline bears southward adjacent to residences and crosses Los Alisos Boulevard along Metropolitan's right-of-way before entering into the La Gloriela Road public right-of-way. The pipeline alignment then continues until it reaches its terminus at the El Toro Reservoir.

4.0.5.2 Calabasas Feeder

The Calabasas Feeder was constructed in 1975. It is a 9.3-mile-long, 54-inch-diameter pipeline made almost entirely of PCCP. The Calabasas Feeder is located in the western San Fernando Valley almost completely within the city of Los Angeles. It delivers State Water Project supply from the Joseph Jensen Water Treatment Plant to the cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village, as well as to areas of unincorporated western Los Angeles County. The northern connection point for the Calabasas Feeder is the West Valley Feeder No. 2 in the Chatsworth neighborhood of

the city of Los Angeles. The pipeline extends south and west to the Las Virgenes Municipal Water District's service connection LV-02 in the city of Calabasas.

The pipeline alignment begins at West Valley Feeder No. 2 under the intersection of Chatsworth Street and Owensmouth Avenue. Neighboring land uses are primarily residential with light industrial development as the alignment approaches the Canoga Park neighborhood. Once the alignment reaches Chase Street, it bears west within the public right-of-way adjacent to single-family residences and extends under Topanga Canyon Road. Following the Chase Street right-of-way, the pipeline extends in a southwesterly direction until it reaches Shoup Avenue.

The pipeline follows the right-of-way along Shoup Avenue and Roscoe Boulevard. At Strathern Street, the alignment bears west for 0.5 mile, passing adjacent to single-family residences and Capistrano Avenue Elementary School.

As the alignment continues southward, the pipeline extends under the Dayton Creek flood control channel near the Fallbrook Avenue/Saticoy Street intersection. The pipeline continues southbound within the Fallbrook Avenue right-of-way adjacent to residences and a small number of commercial buildings. It extends under Sherman Way and crosses under the Bell Creek flood control channel before continuing southward adjacent to a mix of residential and commercial uses, including the Fallbrook Center commercial development between Vanowen Street and Victory Boulevard.

South of Victory Boulevard, the pipeline alignment remains in the Fallbrook Avenue right-of-way next to residences interspersed with low-intensity commercial development before extending under the Calabasas Creek flood control channel. The alignment ultimately reaches the Ventura Boulevard right-of-way adjacent to commercial development and U.S. Highway 101 (US-101) for approximately 0.5 mile before rejoining Leonora Drive. A steel portion of the Calabasas Feeder crosses under Valley Circle Boulevard. The pipeline is again composed of PCCP where the alignment parallels Long Valley Road and the US-101 northbound on-ramp underneath land occupied by a private nursery. Approximately 0.2 mile west of Valley Circle Boulevard, the Calabasas Feeder crosses under US-101 into the city of Calabasas and the Las Virgenes Municipal Water District's service connection LV-02.

4.0.5.3 Rialto Pipeline

The Rialto Pipeline was placed into service in 1975 and is approximately 30 miles long, approximately 16 miles of which is PCCP. The Rialto Pipeline delivers water from east to west in San Bernardino and Los Angeles counties. From the east, the pipeline alignment begins at the second afterbay of the California Department of Water Resources' Devil Canyon Facility, located in the city of San Bernardino. This pipeline extends to the west and terminates at the San Dimas Power Plant Control Structure.

Within the Rialto Pipeline, the pipeline material and inside diameter changes five times from east to west: 7.8 miles of 96-inch PCCP, 3.8 miles of 120-inch PCCP, 3.2 miles of 120-inch steel pipeline, 1.4 miles of 96-inch steel pipeline, and then 1.9 miles of 96-inch PCCP. From the Devil Canyon Facility, an approximately 8.5-mile welded steel section of the 120-inch pipeline proceeds in a southwesterly direction before bearing due west within the Lytle Creek floodplain, passing by residential uses and light industrial facilities in the cities of Rialto and Fontana. Just beyond the Etiwanda turnout where the Etiwanda Pipeline branches in a southwesterly direction from the Rialto Pipeline, the pipeline changes to PCCP composition as it extends west.

From near the Etiwanda turnout, the Rialto Pipeline extends westward under Interstate 15 (I-15) and follows a utility corridor near the northern edge of a residential subdivision. The Rialto Pipeline then moves in a southwesterly direction across an undeveloped floodplain into the city of Rancho Cucamonga and through a single-family residential area, where it follows a wide pedestrian pathway to the south of Crescenta Way. Once the pipeline reaches Wilson Avenue, it turns west and crosses under the Etiwanda Creek Flood Control Channel adjacent to residences and the Cucamonga Valley Water District Lloyd W. Michaels Water Treatment Plant.

The Rialto Pipeline continues westward along 24th Street under the landscaped parkway on the south side of Wilson Avenue and bears southbound at Bluegrass Avenue before extending west again beneath the school grounds of John L. Golden Elementary. The pipeline alignment continues westward within the Banyan Street public right-of-way, passing adjacent to Day Creek Park, residential subdivisions, the Day Canyon Wash, and Los Osos High School. After crossing underneath the Merlot Court cul-de-sac and Haven Avenue, the alignment follows parallel to the Alta Loma stormwater retention basin. The pipeline alignment bears southbound and remains within the Archibald Avenue right-of-way for 0.1 mile, turning west again along a 0.3-mile undeveloped linear corridor. The alignment bears south at Amethyst Avenue and then west below an undeveloped linear corridor, the north part of Beryl Park, and Highland Avenue. Once the alignment reaches Cucamonga Creek, it moves southwesterly, leaving the city of Rancho Cucamonga's boundaries and entering unincorporated San Bernardino County.

The Rialto Pipeline crosses under Interstate 210 (I-210) in a southwesterly direction and extends under commercial development parking lots before reaching the Campus Avenue right-of-way. From the corner of Campus Avenue and 19th Street, a 4.5-mile westward stretch of welded steel pipeline extends under public rights-of-way, crossing under I-210 at 18th Street and into the city of Claremont. Approximately 1.7 miles into the city of Claremont, a PCCP segment extends under the Thompson Creek Equestrian and Bicycle Trail before crossing under Thompson Creek and extending in a northwesterly direction along the undeveloped hillsides along and extending from Webb Canyon Road. The alignment traverses foothill residential development and reaches the Live Oak Reservoir in the city of La Verne.

Once the alignment goes around the Live Oak Reservoir, it crosses under foothill residential development, Puddingstone Channel, and San Dimas Canyon Road in the city of San Dimas. The Rialto Pipeline alignment follows the San Dimas Canyon Road right-of-way for the remaining 0.8-mile stretch to the San Dimas Power Plant Control Structure.

4.0.5.4 Second Lower Feeder

The Second Lower Feeder was constructed in 1967. The 39-mile pipeline extends from the Robert Diemer Water Treatment Plant's Finished Water Reservoir to the Palos Verdes Reservoir in Rolling Hills Estates. It serves Metropolitan and its retail agencies, including Southern California Water Company, City of La Palma, City of Long Beach, Lakewood Water Department, City of Signal Hill, Cal Water Service Company, Los Angeles Department of Water and Power, Los Angeles County Flood Control, and City of Torrance.

Approximately 30 miles of the Second Lower Feeder was constructed of PCCP, with pipeline diameters ranging from 78 to 84 inches. Nearly 2 miles of the PCCP segment has already been rehabilitated, leaving 28 miles still needing rehabilitation or replacement. Approximately 9 miles of the Second Lower Feeder is composed of 84-inch cement mortar-lined and coated-steel pipe.

The Second Lower Feeder crosses beneath the following major freeways and transportation corridors, from east to west: Imperial Highway, the Alameda Corridor rail lines, Burlington Northern Santa Fe Railway, Metrolink, Interstate 605 (I-605), Long Beach Municipal Airport, the Los Angeles County Metropolitan Transportation Authority's Blue Line (rail), Interstate 710 (I-710), Interstate 405 (I-405), Interstate 110 (I-110), the Union Pacific Railroad, and Western Avenue.

The majority of the land above the Second Lower Feeder alignment is urban, including residential, commercial, industrial, and institutional uses, with several schools, parks, and golf courses located adjacent to the pipeline right-of-way. It also crosses portions of the Long Beach Airport. The pipeline crosses Carbon Canyon Channel (multiple times), Coyote Creek, the San Gabriel River, the Los Angeles River, and the Dominguez Channel.

The Second Lower Feeder alignment begins at the Diemer Plant, crossing Metropolitan property and then the Black Gold Golf Course in Yorba Linda. Through Yorba Linda, the land uses are primarily residential along its alignment under Wabash Avenue, Prospect Avenue, and Bastanchury Road, with some light industrial/warehousing and retail commercial uses present. Along Bastanchury Road the Second Lower Feeder crosses into Placentia. The land uses in Placentia along Bastanchury Road, Brookhaven Avenue, Yorba Linda Boulevard, Angelina Drive, Kramer Boulevard, and Community Drive are a mixture of residential, commercial, and schools.

On entering Anaheim, the existing steel-lined pipe section begins, using easements in alleyways, and then following Miraloma Avenue, Sunkist Street, South Street, State College Boulevard, Vermont Avenue, Disneyland Drive, and Ball Road, with commercial, industrial/warehousing, residential, schools, and parks located adjacent to the alignment.

The PCCP portion of the Second Lower Feeder begins again along Ball Road near Magnolia Street, with a similar mixture of land uses. The alignment continues along Ball Road into Cypress, through a small portion of Los Alamitos, and into Long Beach, past mostly residential, commercial, and park uses. Here, Ball Road becomes Wardlow Road and the alignment passes along the edges of a large regional park and crosses the San Gabriel River. After crossing the river, the alignment passes through an almost entirely residential area, on Keynote Street, Iroquois Avenue, and Conant Street, with limited local commercial uses. At Clark Avenue in Long Beach, the alignment turns south and then quickly west along the edge of Skylinks Golf Course and across a portion of the Long Beach Airport.

On the west side of the airport, the alignment is located in Bixby Road, passing a mixture of commercial, industrial/warehouse, residential, school, and park land uses. The alignment passes north and west around the edge of Los Cerritos Park and then follows Del Mar Avenue for a short distance before crossing the Los Angeles River near Carson Street, with a mix of land uses.

On Carson Street the alignment enters the city of Carson, passing through a mixture of residential, commercial, and industrial/warehousing, turning south on Acarus Avenue and then crossing the Dominguez Channel and I-405, turning west again on 220th Street. Along 220th Street, the land uses are primarily residential, with limited commercial and other uses.

When the alignment on 220th Street crosses I-110, it enters an unincorporated area of Los Angeles County and then the city of Los Angeles, with a wide mix of urban land uses. At Western Avenue, the alignment turns south, with similar mixed uses. At 262nd Street, the Second Lower Feeder turns west and enters the city of Lomita, which is primarily residential along the alignment. The alignment turns south on Oak Street and enters the city of Rolling Hills Estates, continuing on Palos Verdes

Drive. In Rolling Hills Estates, the land uses are primarily residential, parks, and golf courses. The Second Lower Feeder alignment terminates at the Palo Verdes Reservoir.

4.0.5.5 Sepulveda Feeder

The Sepulveda Feeder was constructed in the 1970s and is located in Los Angeles County. It is 42 miles long. Approximately 2 miles of the PCCP segment has already been rehabilitated, leaving 35 miles still needing rehabilitation or replacement. This pipeline begins at the Joseph Jensen Water Treatment Plant in the Granada Hills neighborhood of the city of Los Angeles and ends at the Second Lower Feeder Interconnection in the city of Torrance.

The starting point for the Sepulveda Feeder is the connection to the Jensen Plant effluent conduit. From this point, the pipeline continues southward for approximately 2.1 miles under residences and portions of the Knollwood Golf Course to the interconnection to West Valley Feeder No. 1, located at the intersection of Hayvenhurst Avenue and Rinaldi Street. This portion of the pipeline is a 150-inch-diameter PCCP pipeline and is entirely within the city of Los Angeles neighborhood of Granada Hills.

From the West Valley Feeder No. 1 Interconnection, the pipeline continues south along Hayvenhurst Avenue under the State Route 118 (SR-118) overpass for approximately 1 mile to Chatsworth Street before transitioning to a 96-inch-diameter pipeline. The pipeline then continues south within the Hayvenhurst Avenue right-of-way to a 54-inch sectionalizing valve located near the intersection of Roscoe Boulevard and Hayvenhurst Avenue.

The Sepulveda Feeder continues south in residential neighborhoods within the Hayvenhurst Avenue right-of-way, southeast beneath the south end of Van Nuys Airport, east along Vanowen Street, south along Valjean Avenue, and east along Haynes Street, extending under I-405.

Once across I-405, the pipeline alignment travels south along Blucher Avenue, then southeast along the east side of I-405 to a 54-inch-diameter sectionalizing valve near Peach Avenue and Hatteras Street. The pipeline continues south and follows the Sepulveda Boulevard right-of-way until it reaches Valley Vista Boulevard before crossing to the western side of I-405. It then continues south until it reaches Valley Meadows Road before crossing under residential properties and an undeveloped hillsides area. The alignment parallels the western side of I-405 and transitions to 97-inch-diameter welded steel pipe approximately 340 feet before reaching the Sepulveda Canyon Pressure Control Facility.

From the Sepulveda Canyon Pressure Control Facility, the 97-inch-diameter welded steel pipe travels approximately 520 feet before transitioning to 96-inch-diameter PCCP and continues southeastward to cross to the eastern side of I-405. The pipeline then continues south within the Sepulveda Boulevard right-of-way and crosses to the west side of I-405 near the intersection of Sepulveda Boulevard and Moraga Drive. It continues southeastward, alongside the west side of the I-405 right-of-way, until just north of the West Los Angeles Veterans Administration campus near Chenault Street, where it crosses I-405 again. The pipeline continues in a southeasterly direction on Sepulveda Boulevard to the Santa Monica Feeder Interconnection located near the intersection of Sepulveda Boulevard and Ohio Avenue in West Los Angeles. From the Santa Monica Feeder Interconnection, the pipeline is composed of PCCP until Missouri Avenue, when it changes to a 97-inch-diameter welded steel pipe. The pipeline continues in a southeasterly direction for 3.1 miles to the Venice Pressure Control Structure (PCS) and Hydroelectric Plant in Culver City.

From the Venice PCS, a 94-inch-diameter steel segment of the pipeline continues southeastward to the Ballona Pressure Relief Structure near the intersection of Lucerne Avenue and Sepulveda Boulevard in the city of Los Angeles. It then extends under the Ballona Creek flood control channel, where it crosses back into Culver City. The Sepulveda Feeder continues in a southeasterly direction through Culver City, changing to a 96-inch-diameter PCCP pipeline near the Slauson Avenue/Hannum Avenue intersection. It extends under State Route 90 (SR-90) before bearing eastward adjacent to commercial properties in the Fox Hills neighborhood of Culver City.

The Sepulveda Feeder continues under the public right-of-way adjacent to residences along 61st Street through the unincorporated Ladera Heights area, and it crosses into the city of Inglewood under La Cienega Boulevard near Fairview Boulevard. The alignment follows Fairview Boulevard for approximately 1 mile, passing by primarily residences before reaching a 54-inch sectionalizing valve near the intersection of Fairview Boulevard and Overhill Drive. From the sectionalizing valve, the 96-inch-diameter PCCP section bears east on Fairview Boulevard then southeast on Gay Street until meeting and following Florence Avenue, where the Sepulveda Feeder passes into the city of Los Angeles. The pipeline bears south within the Victoria Avenue right-of-way, then heads east on 76th Street for 0.6 mile.

At 5th Avenue, the Sepulveda Feeder crosses back into the city of Inglewood and bears south, passing adjacent to residences and Freeman Elementary School. The alignment passes under a park before trending southeast on Byrd Avenue and bearing south on Van Ness Avenue. The alignment travels south along Van Ness Avenue, crossing under Interstate 105 (I-105), for approximately 3 miles to a 42-inch sectionalizing valve by El Segundo Boulevard. From the sectionalizing valve, the alignment continues south, crossing within or adjacent to the jurisdictions of Inglewood, the city of Los Angeles, the unincorporated Los Angeles County communities of Westmont and West Athens, and the cities of Hawthorne, Gardena, and Torrance.

The Sepulveda Feeder reduces its size from 96-inch-diameter PCCP to 84-inch-diameter PCCP at the sectionalizing valve near El Segundo Boulevard. At Del Amo Boulevard, the pipeline follows the public right-of-way to the east and bears south on Western Avenue. The alignment travels approximately 1.2 miles on Western Avenue to a 42-inch sectionalizing valve near 219th Street before connecting with the Second Lower Feeder on 220th Street. From this juncture, flows can continue along the Second Lower Feeder, southward through the Oak Street PCS and into the second inlet of the Palos Verdes Reservoir or eastward into the Second Lower Feeder toward the Carbon Creek PCS and toward Orange County.

Section 4.1 Aesthetics

4.1.1 Introduction

This section describes the existing conditions for aesthetics, the regulatory framework associated with aesthetics, the impacts on aesthetics that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant aesthetics impacts.

4.1.2 Existing Conditions

The study area for aesthetics is the area that is visible from the pipeline easements or rights-of-way, called the *viewshed*. The approximate viewsheds for each pipeline are shown in Figures 4.1-1 through 4.1-5. These approximate viewsheds represent the views from the closest adjacent development or areas within 0.5 mile from the pipeline location, whichever is narrower. (Note: The pipelines themselves are underground but, during rehabilitation, construction would be visible above ground; therefore, the surface area above the pipelines and areas that can view this surface area are considered the viewshed or study area for aesthetics. Intervening topography and landscaping were not considered for this program-level analysis.)

The following section describes the aesthetic setting in the areas surrounding the proposed program. Aesthetic elements considered in the discussion include the following.

- In areas with dense development, viewing distances are limited to the immediate surroundings, while in more open areas viewing distances are increased.
- In urban and heavily populated areas, the number of viewers is high, while rural settings have fewer viewers.
- In urban areas, major roadways tend to be well lit at night, while open spaces and/or rural areas are not.

4.1.2.1 Allen-McColloch Pipeline

The existing Allen-McColloch Pipeline travels underground through portions of unincorporated Orange County, and the cities of Yorba Linda, Anaheim, Orange, Tustin, Irvine, Lake Forest, and Mission Viejo. The entire Allen-McColloch Pipeline is underground, with the only components visible being access manhole covers, valve boxes, and other minor elements.

The Allen-McColloch Pipeline alignment originates at Metropolitan's Diemer facility and travels southeast under the Black Gold Golf Club course and the foothills of the Chino State Park. It continues generally south through Anaheim and passes through mostly residential and commercial land uses, with denser residential development north of State Route 91 (SR-91) in Yorba Linda. The pipeline continues in a southeast direction through the city of Orange, with mixed land use to the west (newer residential, commercial, and some industrial buildings) and Santiago Oaks Regional Park to the east. It then continues southeast and runs alongside residential development in Tustin

immediately to the west and under the northern end of Peters Canyon Regional Park. Between Jamboree Road and State Route 133 (SR-133), the Allen-McColloch Pipeline traverses vacant land with varied topography through Limestone Canyon Regional Park and the Loma Ridge foothills. In this stretch, the alignment line runs just east of Rattlesnake Reservoir. It then travels through vacant land with very sparse development between State Route 241 (SR-241) and Alton Parkway, with the exception of newer residential development west of the alignment just north of Portola Parkway. Topography also varies in this area. From Alton Parkway to Bake Parkway, the pipeline passes through an area with industrial land uses for approximately 0.5 mile. Mostly residential land uses surround the Allen-McColloch Pipeline from Bake Parkway until it reaches its southern terminus. Notable non-residential land uses in this stretch include El Toro Memorial Park adjacent to and east of the pipeline's alignment along Trabuco Road and Old Trabuco Road south of Lake Forest Drive. The southern terminus of the Allen-McColloch Pipeline is in Lake Forest at the El Toro Reservoir.

Scenic Resources

Table 4.1-1 describes designated scenic resources within the study area of the Allen-McColloch Pipeline. Designated scenic resources listed below were identified in the general plans for each jurisdiction.

Table 4.1-1. Designated Scenic Resources within the Allen-McColloch Pipeline Study Area

Jurisdiction	Scenic Resource
County of Orange	None (Orange County 2014).
City of Yorba Linda	None (City of Yorba Linda 1993).
City of Anaheim	None (City of Anaheim 2004).
City of Orange	None (City of Orange 2010), but see discussion of Santiago Canyon Road and Jamboree Road as County-designated viewscape corridors in <i>Scenic Highways</i> , below.
Tustin	Jamboree Road is identified as an Existing Landscape Corridor and Scenic Resource from Edinger Avenue to the southwest to the Tustin city limits to the northeast (City of Tustin 2013). The Allen-McColloch Pipeline is under Jamboree Road between Patriot Way and Pioneer Road in this area.
Irvine	Jeffrey Road is classified as a local scenic roadway (City of Irvine 2012). The Allen-McColloch Pipeline alignment crosses under Jeffrey Road between Portola Parkway and SR-241.
Lake Forest	None (City of Lake Forest 1994), but see discussion of El Toro Road as a County-designated landscape corridor in <i>Scenic Highways</i> , below.
Mission Viejo	None (City of Mission Viejo 2013).

Scenic Highways

Scenic highways are designated by the State of California to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment (Caltrans 2016a). A portion of SR-91, from State Route 55 (SR-55) to the Anaheim city limits, is designated as a State Scenic Highway (Caltrans 2016b). The Allen-McColloch Pipeline crosses under the freeway approximately 0.2 mile east of Imperial Highway in this area.

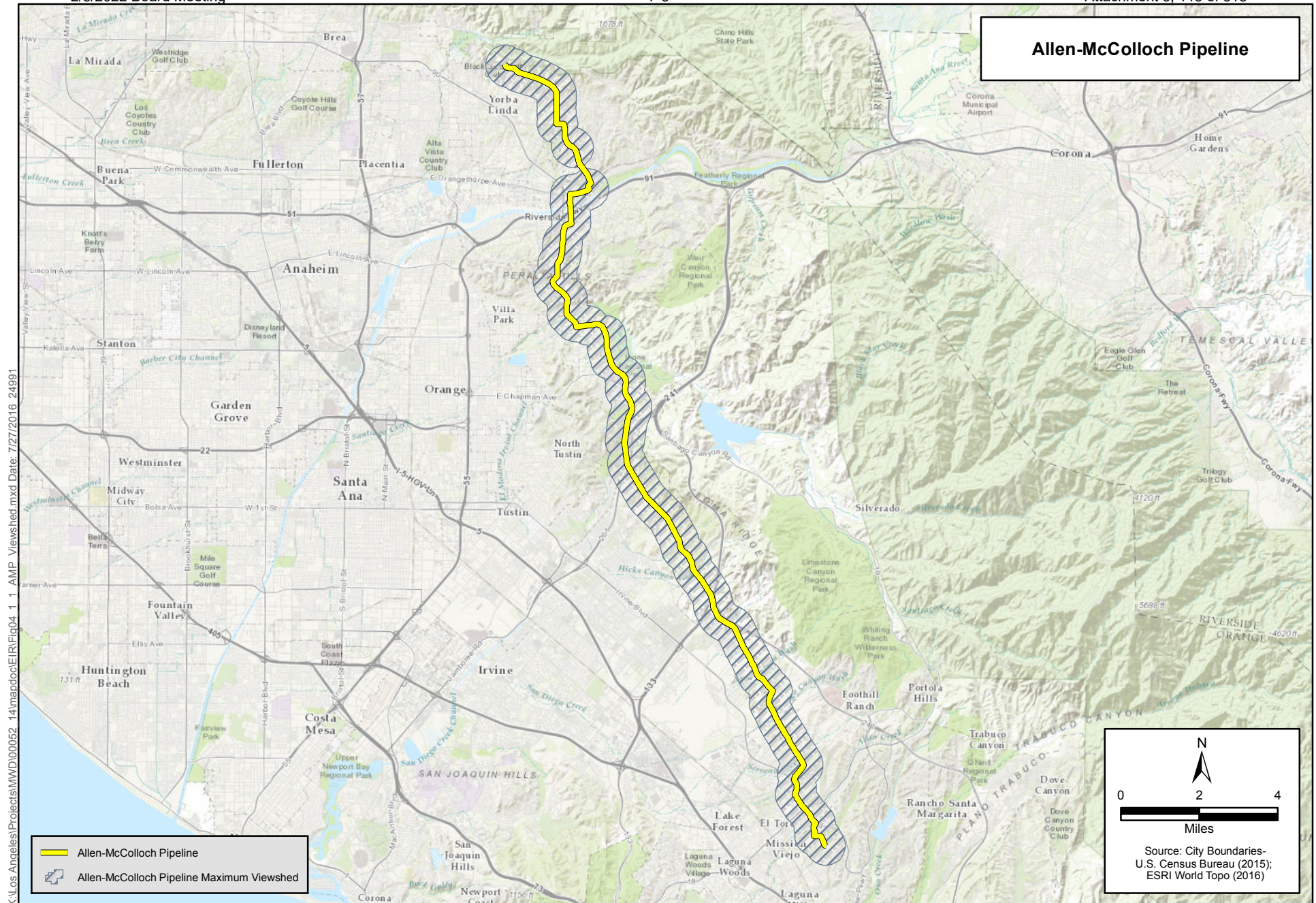


Figure 4.1-1
Allen-McColloch Pipeline Viewshed
Metropolitan Water District PCCP Rehabilitation Program

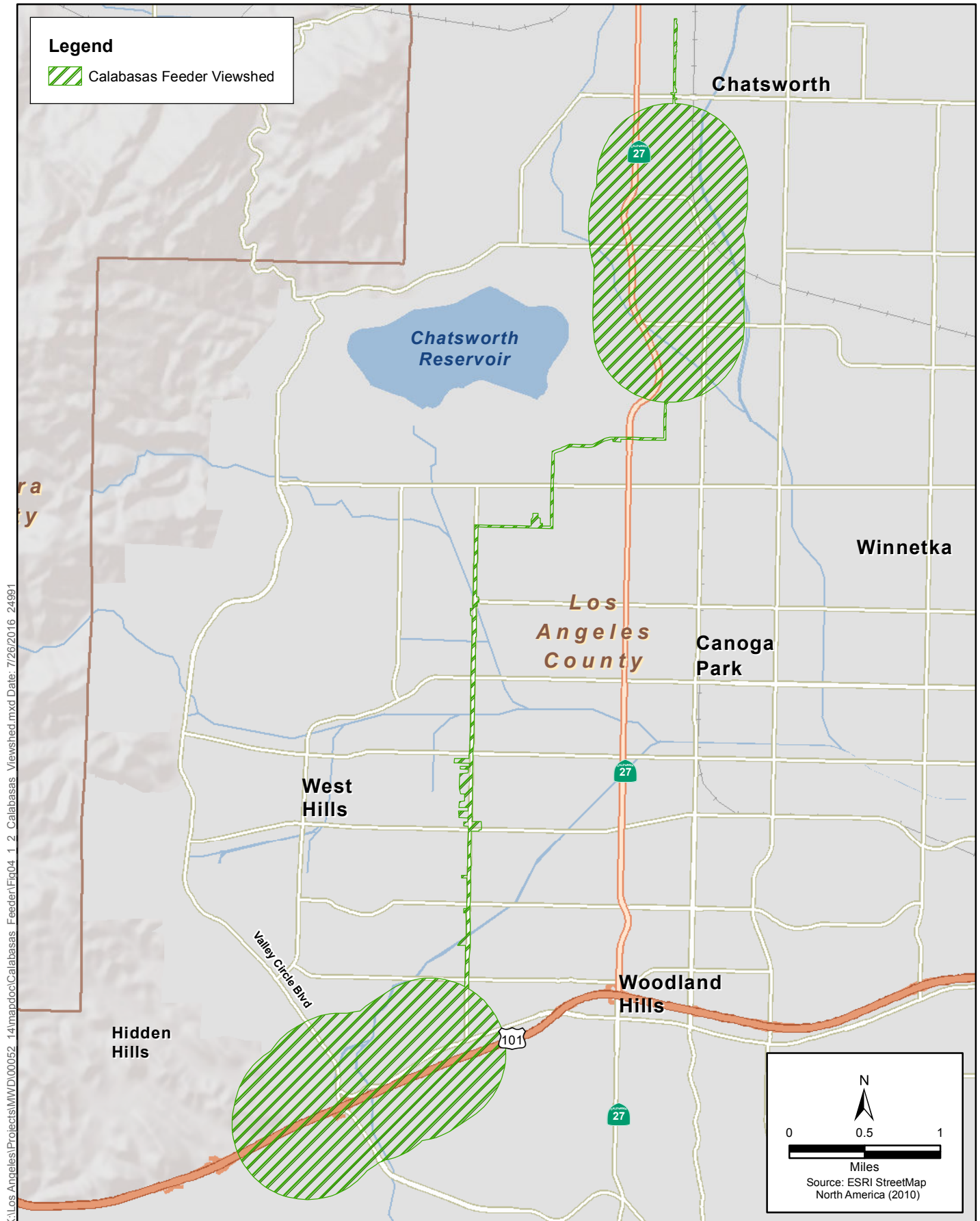


Figure 4.1-2
Calabasas Feeder Viewshed
Metropolitan PCCP Program

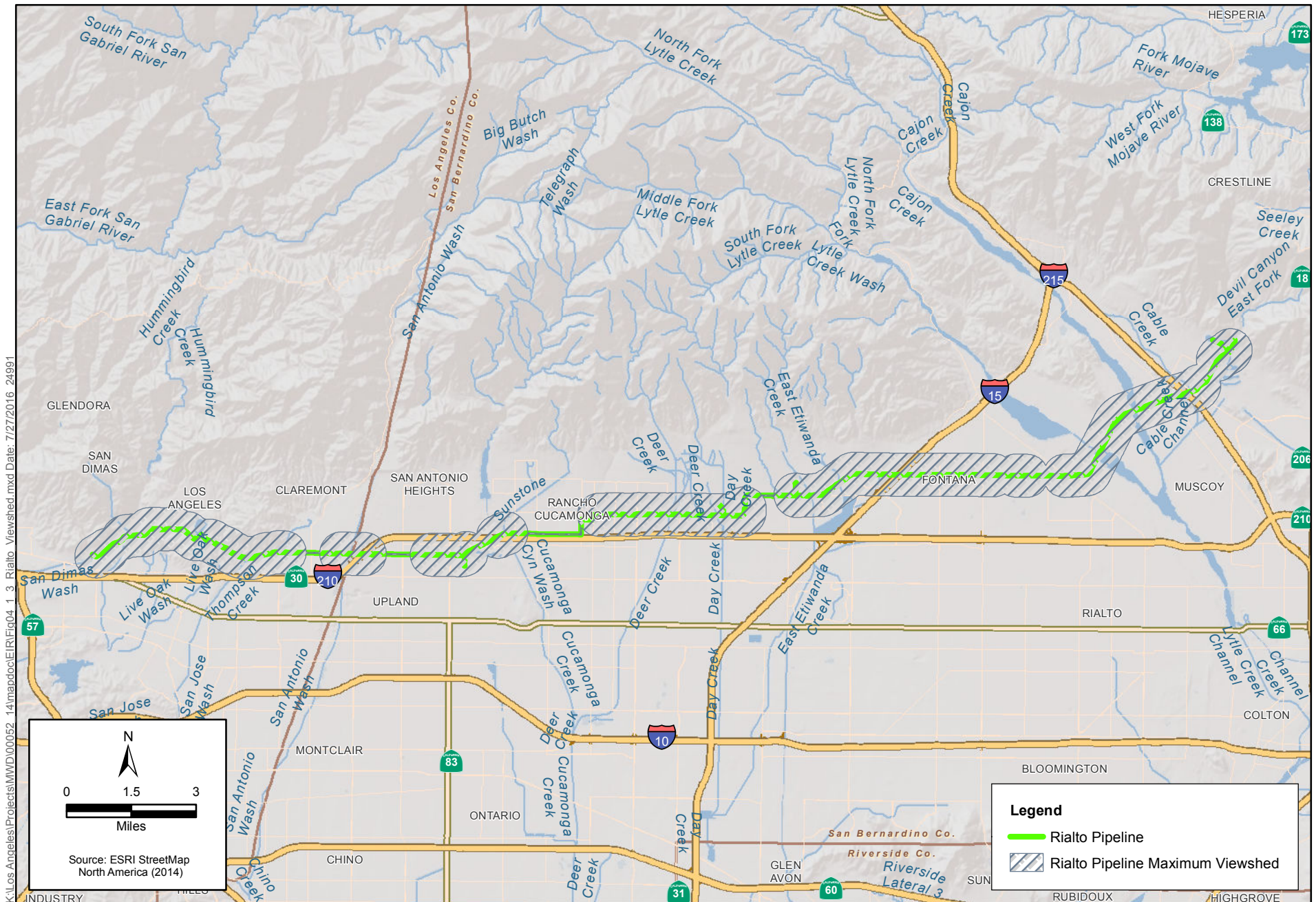


Figure 4.1-3
Rialto Pipeline Viewshed
Metropolitan PCCP Program

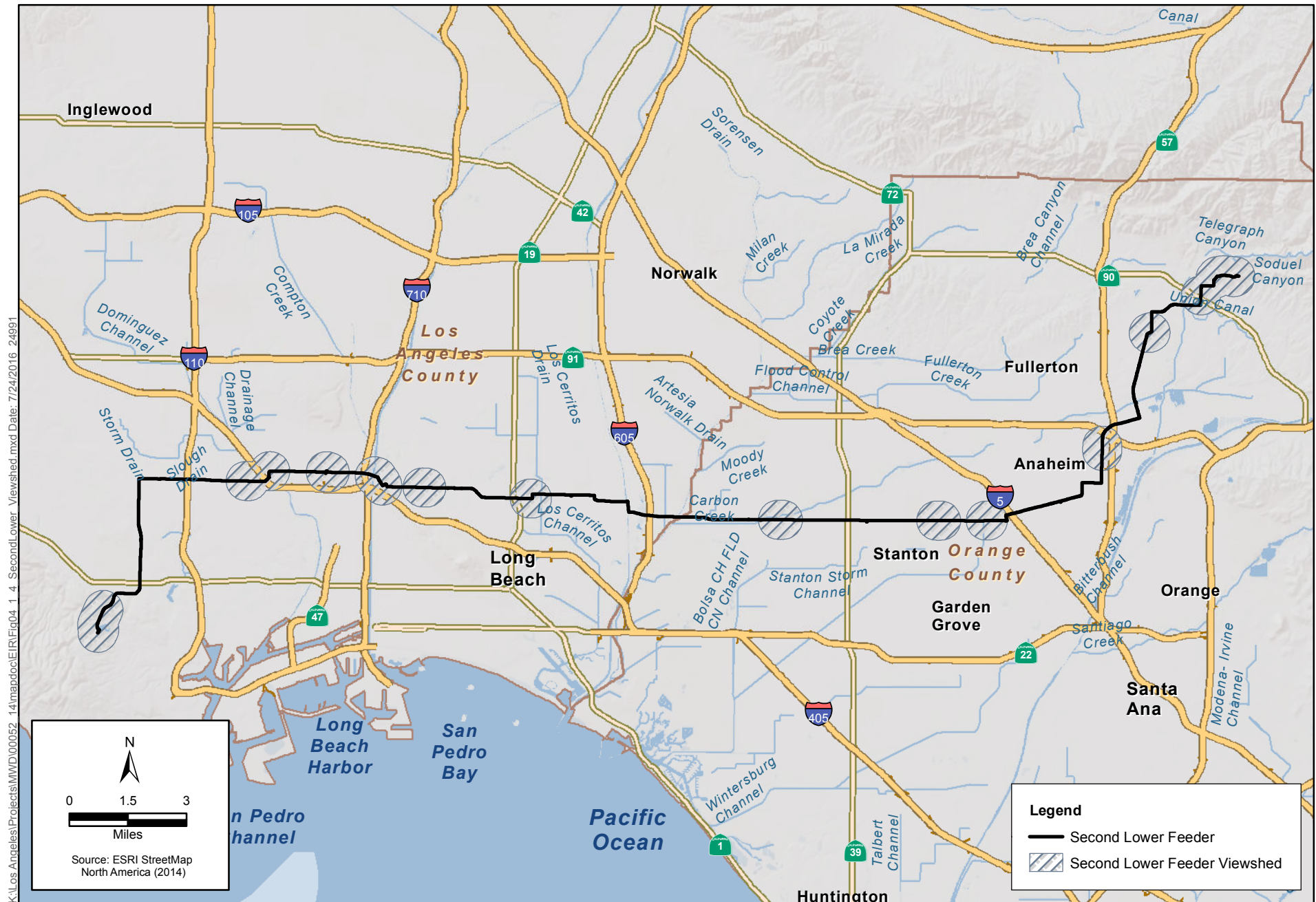


Figure 4.1-4
Second Lower Feeder Viewshed
Metropolitan PCCP Program

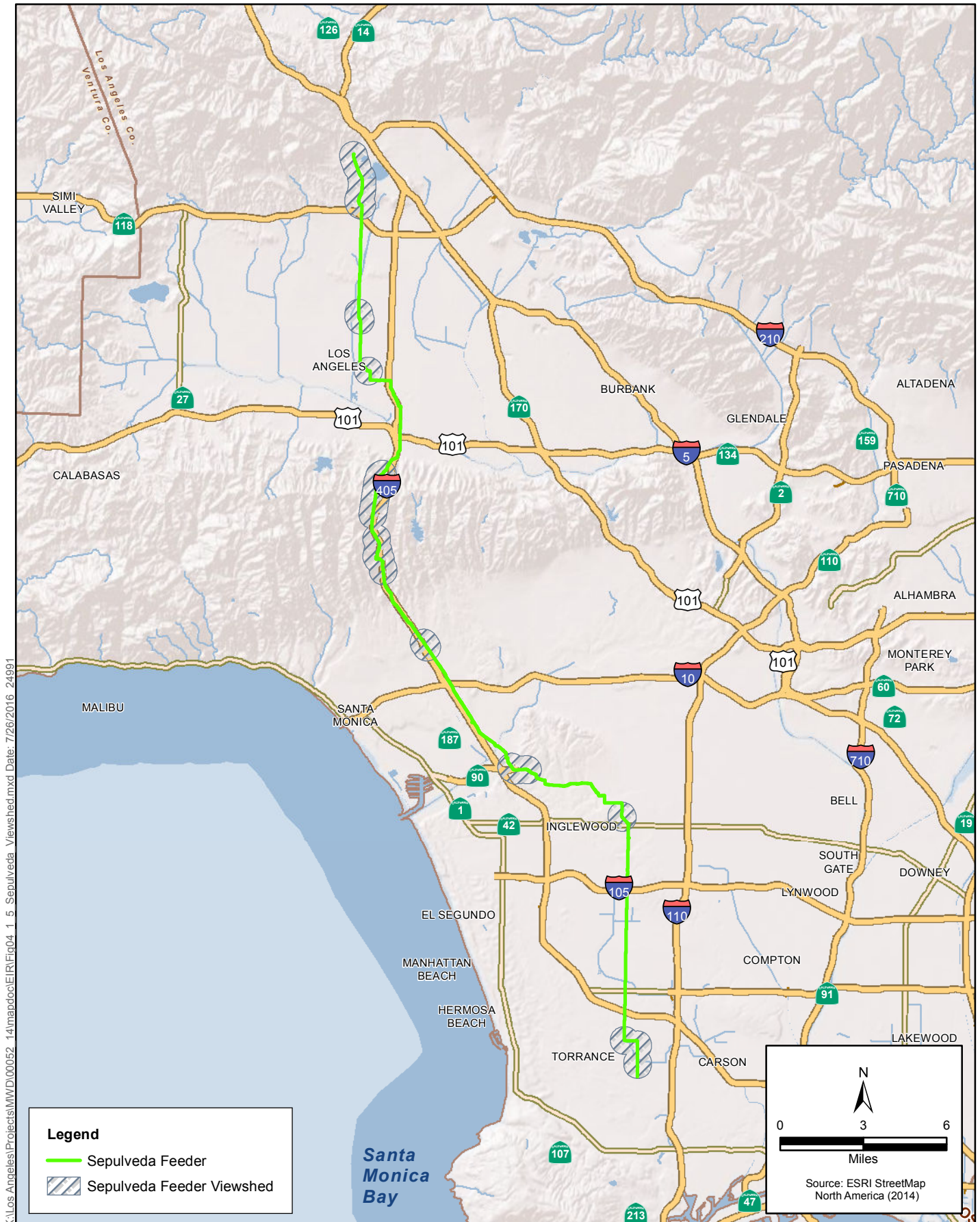


Figure 4.1-5
Sepulveda Feeder Viewshed
Metropolitan PCCP Program

As part of the County of Orange General Plan's Transportation Element, the County has designated scenic highways in two categories: viewscape corridors and landscape corridors. A *viewscape corridor* is defined as having unique or unusual scenic resources and aesthetic values. A *landscape corridor* traverses developed or developing areas and has been designated for special treatment to provide a pleasant driving environment as well as community enhancement (Orange County 2014). Two viewscape corridors intersect at Santiago Canyon Road and Jamboree Road in the city of Orange. The Allen-McColloch Pipeline alignment passes under this intersection. In Lake Forest, El Toro Road is designated as a landscape corridor. The Allen-McColloch Pipeline crosses under El Toro Road (Orange County 2016).

4.1.2.2 Calabasas Feeder

The Calabasas Feeder travels mostly through a portion of the city of Los Angeles, and just barely through portions of Hidden Hills and Calabasas. The entire Calabasas Feeder is underground, with the only components visible being access manhole covers, valve boxes, and other minor elements.

For most of its route, the Calabasas Feeder is under city streets, passing through residential areas. Topography along the pipeline's route is generally flat. It originates in the Chatsworth neighborhood of the city of Los Angeles in a residential area and runs generally south. There are commercial land uses at some intersections and industrial land uses south of Lassen Street. Near the intersection of Fallbrook Avenue and Hatteras Street, the Calabasas Feeder crosses under the Arroyo Calabasas, which is in a concrete channel at this location. Just north of U.S. Highway 101 (US-101), the alignment turns west. There are more commercial land uses in this portion of the alignment, especially along Ventura Boulevard. Near Valley Circle Boulevard just north of US-101, the Calabasas Feeder goes through a densely vegetated area that is occupied by a nursery/tree farm. Here the feeder runs along the north side of US-101 for a short distance, barely entering the city of Hidden Hills, before turning south, under the freeway, ending just inside the boundary of the city of Calabasas.

Scenic Resources

Table 4.1-2 describes designated scenic resources in the study area for the Calabasas Feeder.

Table 4.1-2. Designated Scenic Resources within the Calabasas Feeder Study Area

Jurisdiction	Scenic Resource
City of Los Angeles	US-101 is designated a scenic corridor from Valley Circle Boulevard to the west and Woodlake Avenue to the east (City of Los Angeles 2016). The southern end of the Calabasas Feeder runs parallel to and under US-101.
City of Hidden Hills	None (City of Hidden Hills 1995).
City of Calabasas	US-101 is designated a scenic corridor from Valley Circle Boulevard to the east to the Calabasas city limits to the west (City of Calabasas 2015). The southern terminus of the Calabasas Feeder crosses under US-101 just west of Valley Circle Boulevard.

Scenic Highways

There are no state-designated scenic highways in the study area for the Calabasas Feeder. See Table 4.1-2 for the designation of US-101 as a scenic corridor by local jurisdictions.

4.1.2.3 Rialto Pipeline

The Rialto Pipeline travels through portions of the cities of San Bernardino, Rialto, Fontana, Rancho Cucamonga, Upland, Claremont, La Verne, and San Dimas, and through unincorporated portions of San Bernardino and Los Angeles counties. The pipeline route is near the base of the San Bernardino Mountains, crossing under many of the creeks and washes that drain from these mountains. The topography is relatively flat along the majority of the route, except for the westernmost portion in La Verne and San Dimas, where it is within the foothills. Much of the alignment is near the edge of the expanding urban environment.

The Rialto Pipeline originates in the Devil Canyon area in the foothills of the San Bernardino National Forest in the city of San Bernardino. It runs southwest through a residential area of San Bernardino. Heading west, it crosses under Interstate 215 (I-215) and a small industrial area before traversing the wide Cajon Wash, which is mostly open space with some areas used for mining. This wide wash is in an unincorporated part of San Bernardino County. On the west side of the wash, the Rialto Pipeline enters the city of Rialto and passes under a small industrial area and then an area with a mixture of adjacent land uses, including residential, industrial/warehousing, and a park at the corner of West Casa Grande Drive and Alder Avenue.

After crossing under Mango Avenue, the alignment enters the city of Fontana and traverses an open space area, with small amounts of residential land uses, until it crosses under Interstate 15 (I-15). West of I-15, the Rialto Pipeline follows a corridor of open space with transmission lines. While this corridor is bordered by a few residential neighborhoods, most of the surrounding area is open space created by creeks and washes. Within this stretch of the alignment, the Rialto Pipeline is partially in the city of Rancho Cucamonga and partially in unincorporated San Bernardino County. Eventually, the alignment leaves the transmission line corridor and travels through an area that includes a mix of land uses, including open space, residential neighborhoods, Cucamonga Water District facilities, parks, elementary schools, Los Osos High School, and Chaffey College. When the alignment crosses under Cucamonga Creek, it enters the city of Upland.

The Rialto Pipeline now turns slightly south under the creek and Interstate 210 (I-210), passing by a mining operation and then traveling under a commercial mall. It then turns west again, passing through a mostly residential area, until it again crosses under I-210, and under San Antonio Creek. At this point, it enters the city of Claremont.

West of San Antonio Creek, the Rialto Pipeline alignment is bordered by a mixture of land uses. Although this area is primarily residential, there are other land uses mixed in, including wastewater treatment facilities, small-scale farming, and a park. When the pipeline gets to the western edge of Claremont, it enters an area dominated by open space with a few residences in unincorporated Los Angeles County. It then enters the city of La Verne, passing under residential communities, primarily using open space corridors. It crosses under several golf courses and enters the city of San Dimas, before terminating near the intersection of Sycamore Canyon Road and San Dimas Canyon Road.

Scenic Resources

Table 4.1-3 describes designated scenic resources in the study area for the Rialto Pipeline.

Table 4.1-3. Designated Scenic Resources within the Rialto Pipeline Study Area

Jurisdiction	Scenic Resource
City of San Bernardino	None (City of San Bernardino 2005).
San Bernardino County	None (San Bernardino County 2014).
City of Rialto	None (City of Rialto 2010).
City of Fontana	None (City of Fontana 2003).
City of Rancho Cucamonga	Etiwanda, Haven, and Archibald Avenues are designated as View Corridors (City of Rancho Cucamonga 2010). The Rialto Pipeline crosses under each of these roadways.
City of Upland	None (City of Upland 2015).
City of Claremont	None (City of Claremont 2009).
Los Angeles County	None (Los Angeles County 2015).
City La Verne	Wheeler Avenue is designated as a Scenic Corridor from Baseline Road to Golden Hills Road (City of La Verne 1999). The Rialto Pipeline runs from just north of Birdie Drive to just north of Via Arroyo. San Dimas Canyon Road is designated as a Scenic Corridor from I-210 to the northern city limits (City of La Verne 1999). The Rialto Pipeline runs under San Dimas Canyon Road from just north of Terrebonne Avenue to Sycamore Canyon Road.
San Dimas	None (City of San Dimas 1991).

Scenic Highways

There are no state-designated scenic highways in the study area for the Calabasas Feeder. See Table 4.1-3 for the designation of local view corridors and scenic corridors in Rancho Cucamonga and La Verne.

4.1.2.4 Second Lower Feeder

The Second Lower Feeder travels through portions of the cities of Yorba Linda, Placentia, Anaheim, Buena Park, Cypress, Lomita, Long Beach, Lakewood, Carson, Los Angeles, Torrance, Los Alamitos, and Rolling Hills Estates, and unincorporated areas of Orange and Los Angeles counties.

The Second Lower Feeder originates at Metropolitan's Diemer facility in unincorporated Orange County and travels southwest into Yorba Linda, under the westernmost part of the Black Gold Golf Club. It then travels through mostly residential areas, with some commercial land uses and a large school at the corner of Bastanchury Road and Rose Drive. The pipeline continues generally south and west through the city of Placentia with a similar mixture of mostly residential neighborhoods with some commercial uses. It passes El Dorado High School on Brookhaven Avenue south of Bastanchury Road and Kraemer Middle School on Angelina Drive south of Alta Vista Street.

When the Second Lower Feeder crosses Crowther Avenue, it enters the City of Anaheim, and the land uses become more industrial. The alignment continues south and west, crossing under the State

Route 57 (SR-57) and SR-91 interchange. South of this point, it enters a mostly residential area again with a few commercial uses. The alignment passes by Pioneer Park along Sunkist Street between La Palma Avenue and Underhill Avenue and Boysen Park at the southwest corner of State College Boulevard and Vermont Avenue. After crossing under Interstate 5 (I-5), the pipeline turns west for several miles under Ball Road. This stretch has a mixture of land uses, including residential neighborhoods, commercial uses, Gilbert High School, and Magnolia High School.

The Second Lower Feeder crosses briefly into the city of Buena Park under Ball Road between Fremont Street and Holder Street, where it is bordered by residential uses. The alignment then enters the city of Cypress. Through Cypress the land uses are mostly residential, with a few commercial areas at intersections and small parks and schools. After crossing briefly into the city of Los Alamitos, between Bloomfield Street and Coyote Creek, which is residential and commercial, the pipeline enters the city of Long Beach. At the Coyote Creek channel, the alignment passes under the Coyote Creek Bikeway.

In Long Beach, the Second Lower Feeder alignment is bordered by residential uses west of Coyote Creek, and then passes under the El Dorado Regional Park and the San Gabriel River. It then traverses an area that is almost entirely residential before reaching Clark Avenue, where it passes a small park and the Skylinks Golf Course, and then passes under a portion of the Long Beach Airport (though not under any runways). West of the airport, the land uses are mostly residential again with a small amount of commercial uses and several schools. Near the west edge of Long Beach, the pipeline goes under Los Cerritos Park, the Los Angeles River Bike Path, the Los Angeles River, and I-710 before entering the city of Carson.

In Carson, the Second Lower Feeder passes through a variety of land uses, including commercial, residential, and large-scale warehousing and industrial uses. It also crosses under a railyard, the Wilmington Channel, and Interstate 405 (I-405). Crossing Interstate 110 (I-110), the pipeline crosses briefly into an area of unincorporated Los Angeles County and then into the city of Los Angeles. On the western boundary of the city, the pipeline turns south on Western Avenue and borders the city of Torrance, with mostly residential land uses on the Los Angeles side and large-scale industrial/warehousing on the Torrance side. South of 242nd Place, the pipeline passes by Narbonne High School. Here, the pipeline is bordered by the city of Lomita on the west, though it is still in the city of Los Angeles, in a primarily residential area. The pipeline turns first southwest, and then west on 262nd Street and enters into the city of Lomita, traveling through a residential area. When it turns south again on Oak Street and Palos Verdes Drive East, it enters the city of Rolling Hills Estates. The land uses in this area include residential, surface mining, golf courses, parks, and a reservoir. There are also hiking and equestrian trails along the roadways in this area. The Second Lower Feeder terminates just west of the Palos Verdes Reservoir.

Topography along the Second Lower Feeder is generally flat, with exception of the area immediately surrounding its northeastern and southwestern ends.

Scenic Resources

Table 4.1-4 describes designated scenic resources in the study area for the Second Lower Feeder.

Table 4.1-4. Designated Scenic Resources within the Second Lower Feeder Study Area

Jurisdiction	Scenic Resource
County of Orange	None (Orange County 2014).
City of Yorba Linda	None (City of Yorba Linda 1993).
City of Anaheim	None (City of Anaheim 2004).
City of Buena Park	None (City of Buena Park 2010).
City of Cypress	None (City of Cypress 2001).
City of Los Alamitos	None (City of Los Alamitos 2015).
City of Long Beach	None (City of Long Beach 2013; City of Long Beach 2005).
City of Lakewood	None (City of Lakewood 1996).
City of Carson	None (City of Carson 2006).
County of Los Angeles	None (Los Angeles County 2015).
City of Los Angeles	None (City of Los Angeles 2016).
City of Torrance	None (City of Torrance 2010).
City of Lomita	None (City of Lomita 1998).
City of Placentia	None (City of Placentia 1982).
City of Rolling Hills Estates	Palos Verde Drive East and Palos Verdes Drive North are considered scenic corridors. Near its southwestern terminus, the Second Lower Feeder is under Palos Verdes Drive East and crosses Palos Verdes Drive North (City of Rolling Hills Estates 1992).

Scenic Highways

There are no state-designated scenic highways in the study area for the Second Lower Feeder. See Table 4.1-4 for the designation of local scenic corridors in Rolling Hills Estates.

4.1.2.5 Sepulveda Feeder

The Sepulveda Feeder travels through portions of the cities Los Angeles, Culver City, Inglewood, Hawthorne, Gardena, and Torrance, and unincorporated portions of Los Angeles County.

The Sepulveda Feeder originates at the Metropolitan facility in Granada Hills in the city of Los Angeles and heads south through residential land uses and along the easternmost portion of the Knollwood Golf Course. The feeder line then merges onto Hayvenhurst Avenue heading south and travels along dense residential land uses until it reaches Chase Street in the community of North Hills, where it passes a sparsely developed sod farm, adjacent and to the east, and an industrial area to the west. South of Roscoe Boulevard, the Sepulveda Feeder travels alongside the Van Nuys Airport to the east, with industrial land use to the west. The pipeline then heads southeast under Sepulveda Boulevard on the eastern side of I-405. Residential land use dominates the landscape east of Sepulveda Boulevard with commercial uses on the west. The Sepulveda Feeder crosses under I-405 in the Sherman Oaks community. The feeder line continues south through hills with varying

topography surrounded by residential development until it reaches Mulholland Drive. South of Mulholland Drive, the Sepulveda Feeder travels under the hills of the Westridge-Canyonback Wilderness Park (adjacent to I-405). As it heads southeast beyond the Westridge-Canyonback Wilderness Park, the pipeline passes under mixed land uses with some residential and commercial land uses, as well as the Los Angeles National Cemetery along Sepulveda Boulevard. South of Ohio Avenue, the pipeline is surrounded primarily by commercial land uses until it reaches Exposition Boulevard, where the land uses are a mixture of residential and commercial.

From Venice Boulevard to Canterbury Drive in Culver City, land use is predominantly commercial with small areas of residential land use. Heading southeast beyond Canterbury Drive, the Sepulveda Feeder travels through mostly residential areas with some commercial properties at major intersections in the city of Inglewood. At Florence Avenue and West Boulevard, the pipeline is just north of the Inglewood Park Cemetery and continues briefly to the east and then south through residential areas, with commercial properties at major intersections. South of Interstate 105 (I-105), the pipeline passes through commercial and industrial land uses to the west and the Chester Washington Golf Course to the east along Van Ness Avenue in the city of Hawthorne. South of El Segundo Boulevard, in the cities of Gardena and later Torrance, land uses consist of a mixture of residential, commercial, and industrial until the feeder line reaches the area south of I-405. This area consists of large industrial sites, including a tank farm on the west side of Van Ness Avenue. The Sepulveda Feeder then heads east briefly before traveling under Western Avenue going south until it reaches its terminus under 220th Street. This area consists of residential land uses on the eastern side of Western Avenue and commercial uses on the west.

Topography along the Sepulveda Feeder is generally flat, with the exception of the elevated areas south of Ventura Boulevard and north of Wilshire Boulevard.

Scenic Resources

Table 4.1-5 describes designated scenic resources in the study area for the Sepulveda Feeder.

Table 4.1-5. Designated Scenic Resources within the Sepulveda Feeder Study Area

City	Scenic Resource
City of Los Angeles	None (City of Los Angeles 2016).
County of Los Angeles	None (Los Angeles County 2015).
City of Culver City	None (City of Culver City 1996).
City of Inglewood	None (City of Inglewood 1992).
City of Hawthorne	None (City of Hawthorne 1989).
City of Gardena	None (City of Gardena 2006).
City of Torrance	None (City of Torrance 2010).

Scenic Highways

There are no state-designated scenic highways in the study area for the Sepulveda Feeder.

4.1.3 Regulatory Framework

This section describes the plans, policies, and regulations related to aesthetics that are applicable to the proposed program.

4.1.3.1 Federal

There are no federal regulations related to aesthetics applicable to the program.

4.1.3.2 State

State Scenic Highway Program

The California Department of Transportation (Caltrans) manages the State Scenic Highway Program, providing guidance and assisting local government agencies, community organizations, and citizens with the process to officially designate scenic highways. The State Scenic Highway Program is intended to “establish the State’s responsibility for the protection and enhancement of California’s natural scenic beauty by identifying those portions of the State highway system which, together with adjacent scenic corridors, require special conservation treatment” (Caltrans 2008).

As described in Section 4.1.2.1, the Allen-McColloch Pipeline study area includes one designated state scenic highway. There are no additional state scenic highways in the study areas for any of the other pipelines in the proposed program.

4.1.3.3 Local

Table 4.1-6 lists the applicable aesthetics regulations for the proposed program.

Table 4.1-6. Applicable Aesthetics Regulations for Proposed Program

Title of Plan, Policy, Regulation (date)	Applicable Regulation
Allen-McColloch Pipeline	
Orange County General Plan, Transportation Element (Orange County 2014)	<p>Scenic Highway Plan Goal 1: Preserve and enhance unique or special aesthetic and visual resources through sensitive highway design and the regulation of development within the scenic corridor.</p> <p>Objective 1.3: Preserve established scenic highways in order to protect the existing scenic qualities of these corridors. [Applicable to SR-91]</p> <p>Objective 1.5: Develop the roadway portion of the scenic corridors in a manner that recognizes the natural scenic resources of the corridor and is sensitive to them to the maximum extent feasible. [Applicable to Santiago Canyon Road, Jamboree Road, and El Toro Road]</p> <p><i>None of the policies under these goals and objectives are applicable to the proposed program.</i></p>
City of Tustin General Plan (City of Tustin 2013)	<i>Although the City of Tustin General Plan has identified Jamboree Road as an existing landscape corridor and scenic resource, it does not include any applicable policies related this resource.</i>

Title of Plan, Policy, Regulation (date)	Applicable Regulation
City of Irvine General Plan, Land Use Element, (City of Irvine 2012)	<i>Although the Irvine General Plan has identified Jeffrey Road as a local scenic roadway, it does not include any applicable policies related this resource.</i>
Calabasas Feeder	
City of Los Angeles Mobility Plan 2035 (City of Los Angeles 2016)	Policy 2.16, Scenic Highways: Ensure that future modifications to any scenic highway do not impact the unique identity or characteristic of that scenic highway. [Applicable to US-101] Scenic Highways Guideline 3c: Outstanding specimens of existing trees and plants located within public right-of-way of a scenic highway shall be retained to the maximum extent feasible within the same public right-of-way.
City of Calabasas General Plan, Community Design Element (City of Calabasas 2015)	Policy IX-44: Preserve large areas of natural hillsides and other dominant natural environmental features visible from the Ventura Freeway [US-101].
Rialto Pipeline	
City of Rancho Cucamonga General Plan (City of Rancho Cucamonga 2010)	<i>Although the City of Rancho Cucamonga General Plan has identified Etiwanda, Haven, and Archibald Avenues as designated view corridors, it does not include any applicable policies related to this resource.</i>
City of La Verne General Plan, Resources Element (City of La Verne 1999)	Goal 3: Protect and promote our scenic vistas and routes [applicable to Wheeler Avenue] Policy 3.1: Preserve our scenic vistas. Implementation Measure 3.1c: Encourage the preservation of the existing native plan and heritage resources in our city.
Second Lower Feeder	
City of Rolling Hills Estate General Plan, Conservation Element	Policy 5.3: Preserve the existing rural road character of Palos Verdes Drive North by maintaining the roadway's designation as a scenic corridor/roadway part of a peninsula wide loop.
Sepulveda Feeder	
None	

4.1.4 Thresholds and Methodology

4.1.4.1 Thresholds of Significance

Table 4.1-7 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to aesthetics. These thresholds are addressed in the PEIR.

Table 4.1-7. CEQA Thresholds for Aesthetics

Threshold
<i>Would the proposed program:</i>
a. Have a substantial adverse effect on a scenic vista?
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
c. Substantially degrade the existing visual character or quality of the site and its surroundings?
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

4.1.4.2 Methodology

Scenic Resources

As documented in Section 4.1.2, this PEIR identifies known scenic resources within the study area (viewshed) of the pipeline alignments. (CEQA requires the analysis of adverse effects on “scenic vistas” but does not define the term *scenic vista*. For this analysis, *scenic vistas* are defined as views of scenic resources identified in local planning documents, such as general plans.) For this program-level analysis, the potential for impacts to occur on any of these scenic resources during rehabilitation anywhere along the pipeline is evaluated. Examples of these impacts are removal of street landscaping, blocking of views of a scenic resource, or incompatible nighttime lighting levels during construction. (As part of the program, Metropolitan’s contractors would be required to restore landscaping to pre-construction conditions; see Section 3.7.6, *Site Restoration*.) The only permanent changes to the visible condition would be the addition of above-ground valve boxes and electrical panels. The potential impacts of these permanent changes on identified scenic resources are considered.

The locations of construction staging areas has not been determined at this time, and would depend on the availability of suitable land in proximity to construction sites when individual rehabilitation projects are implemented. In some cases, these staging areas may be outside the study area for this program. The types of impacts on scenic resources that could occur during the time these staging areas are being utilized are identified in this analysis. The need for mitigation and/or further analysis once the locations of staging areas are known is also identified.

As part of the program, Metropolitan has agreed to implement the following environmental commitment related to these aesthetics, and this commitment is considered part of the program for analysis purposes.

- Each of the excavation sites/work zones and staging areas would be fenced and screened.

Scenic Highways

As documented in Section 4.1.2, this PEIR identifies state scenic highways within the study area of the pipeline alignments. For this program-level analysis, the potential for impacts to occur on views from these scenic highways during rehabilitation anywhere along the pipeline is evaluated. Examples of these impacts are removal of street landscaping, blocking of views from scenic highways, or incompatible nighttime lighting levels during construction. (As part of the program,

Metropolitan's contractors would be required to restore landscaping to pre-construction conditions; see Section 3.7.6, *Site Restoration*.) The only permanent changes to the visible condition would be the addition of above-ground valve boxes and electrical panels. The potential impacts of these permanent changes on identified scenic resources are considered.

The locations of construction staging areas have not been determined at this time, as discussed above. The types of impacts on scenic highways that could occur during the time these staging areas are being utilized are identified in this analysis. The need for mitigation and/or further analysis once the locations of staging areas are known is also identified.

As part of the program, Metropolitan has agreed to implement an environmental commitment to fence and screen excavation sites/work zones and staging areas, and this is considered part of the program for analysis purposes.

Visual Character and Quality

Section 4.1.2 describes the general visual character and quality of the study areas along the pipelines. Only minimal permanent changes would be visible along the pipelines after rehabilitation is complete because the pipelines and most of the secondary components are underground. Only new above-ground valve boxes and electrical panels would be visible. The potential for these permanent features to affect visual character and quality are addressed in this analysis, along with the temporary impacts on visual character and quality. The potential for temporary impacts on visual character and quality near construction staging areas is also evaluated.

Light and Glare

Section 4.1.2 identifies general lighting conditions along the pipelines. Although nighttime work may be required for some projects within the PCCP program, this program-level analysis assumes only daytime work (see Section 3.7.1, *Construction Activities*). ~~(Any projects requiring nighttime work would require supplemental environmental analysis and documentation to determine the location and severity of impacts.)~~ The only nighttime lighting assumed to be part of the program for this analysis is temporary security lighting at excavation sites and at construction staging areas. The potential impacts from such lighting are evaluated in this document. No new permanent lighting would be included in the proposed program.

4.1.5 Impacts Analysis

4.1.5.1 Program Analysis

Threshold AES-A: Have a Substantial Adverse Effect on a Scenic Vista

The proposed program pipeline rehabilitation would occur at various locations along approximately 100 miles of the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder combined. As discussed in Section 4.1.2, *Existing Conditions*, the study areas for the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, and Second Lower Feeder all traverse local scenic resources at the specified locations and, in the case of the Allen-McColloch Pipeline, also traverse a State Scenic Highway (as designated by Caltrans). As such, there is potential

for the proposed program to affect scenic resources at these locations and result in aesthetic impacts. (No scenic resources were identified in the Sepulveda Feeder study area.)

Construction

Aesthetic impacts related to the proposed program are most likely to occur only during construction because most program elements are underground and out of public view. Multiple excavation areas would be needed to rehabilitate pipelines and buried equipment vaults. Excavation footprints are expected to be approximately 20 feet wide and 50 feet long, and existing surface improvements, such as road pavements, sidewalks, and landscaping, would be removed at each excavation area to facilitate construction activities. Where new pipeline replacement would occur along portions of the Allen-McColloch Pipeline and the Second Lower Feeder, rehabilitation would involve excavating trenches, installing new pipe, backfilling the trench, and restoring the site to preconstruction conditions. The existing pipeline would either be demolished and removed or abandoned in place. Excavation areas and pipeline replacement areas are expected to be fenced and screened during rehabilitation activities. Excavation and pipeline replacement locations are currently unknown, but if situated within a scenic resource area, the removal of surface improvements and/or fencing (creating a visual obstruction) around work areas could result in potential aesthetic impacts.

In addition to excavation and pipeline replacement locations, staging areas would be established to provide storage space for construction materials and equipment, and to provide space for contractor trailers and parking. Ideally, staging areas would be close to work areas, but space limitations may require them to be located farther away. The size of a staging area would vary depending on several factors, including proximity to the work area, land leasing fees, contractor work methods, land uses in the vicinity, and services the staging area would provide. Staging area locations are also unknown and, if situated within a scenic resource area, could result in potential aesthetic impacts due to potential removal of surface improvements and/or the fencing surrounding the staging area perimeter.

Although rehabilitation and staging areas have the potential to result in aesthetic impacts during construction, these impacts would be temporary (occurring only during the construction phase). Furthermore, site restoration would be required to restore work areas to pre-construction conditions, including backfilling excavation areas, replacing and restoring landscaping, and restoring existing roads or sidewalks damaged during rehabilitation activities. As a result, potential impacts would be less than significant.

Post-Construction

Permanent visible changes after construction would be expected to result in only minimal impacts because only new manhole covers, air release/vacuum valves, and electrical panels would be visible above ground. Air release/vacuum valves would be located in a small enclosure, less than 5 feet tall and 5 feet wide, along the sidewalk and within the public right-of-way. Electrical panels would also be located within small enclosures approximately 8 to 10 feet high and approximately 3 feet wide, with a telemetry pole of a maximum height of 20 feet. As with work and staging areas, locations of valves and electrical panels are unknown. If any of these above-ground structures are located within a scenic resource area, their impacts would be expected to be less than significant on scenic resources or vistas due to their negligible footprint and the fact that they would likely be placed intermittently and not grouped together.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold AES-B: Substantially Damage Scenic Resources, Including, but Not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway

As discussed in the Section 4.1.2.1, the Allen-McColloch Pipeline crosses under SR-91, which is designated as a state scenic highway. Consequently, there is potential for the proposed program to affect scenic resources within this area.

Construction

Although the Allen-McColloch Pipeline crosses under SR-91, it is not expected that rehabilitation activities would result in substantial damage to scenic resources along the highway. Potential work areas and staging areas during construction would only be used temporarily. Furthermore, site restoration would be required to restore work areas to pre-construction conditions, including the replacement and restoration of any landscaping potentially affected by the rehabilitation activities. As such, the proposed program construction activities would not substantially damage a scenic resource within a state scenic highway. Impacts would be less than significant.

Post-Construction

After rehabilitation is complete, only small program components would potentially be visible from SR-91 (manhole covers, valve boxes, and electrical panels). Such small components would not result in substantial damage to scenic resources along a designated state scenic highway. Impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold AES-C: Substantially Degrade the Existing Visual Character or Quality of the Site and Its Surroundings**Construction**

As discussed under Impact AES-A, construction activities have the potential to affect scenic resources and therefore have the potential to contribute to the degradation of the existing visual character and quality of the site and the immediate surroundings. During construction, vehicles,

equipment, stockpiled material, and other elements could be observed by viewers near the proposed program work areas and staging areas. However, potential work and staging area impacts would only be temporary and short term. Therefore, the proposed program construction activities would not substantially degrade the existing visual character or quality of a site or its surroundings. Impacts would be less than significant.

Post-Construction

Permanent visible changes after construction would be expected to result in only minimal impacts related to new manhole covers, valve boxes, and electrical panels. These components are not expected to have a significant impact on visual character or quality due to their negligible footprint and intermittent placement. Impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold AES-D: Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area

Construction

Nighttime lighting may be required in construction work areas and staging areas for safety and security purposes. During construction and at staging areas, lighting may spill over into adjacent light-sensitive areas, especially residential land uses. Though temporary, this spillover light may result in significant impacts.

Post-Construction

No permanent lighting would be included in the program. Therefore, there would be no impacts related to light and glare after construction is complete.

Mitigation Measures

MM AES-1 In order to prevent impacts related to spillover lighting into light-sensitive land uses, all safety and security lighting at construction work areas and staging areas will be directed downward and shielded to avoid light spilling over into residential areas.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM AES-1 would reduce these impacts so that residual impacts would be less than significant.

4.1.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

Impacts of the proposed program related to aesthetics would generally be minimal and/or temporary. Aesthetic impacts usually do not combine with impacts of other projects to result in cumulative impacts unless projects are very near to each other (i.e., in the same viewshed). The less-than-significant impacts related to scenic resources, scenic highways, and visual character and quality would not represent considerable contributions to cumulative impacts. Impacts related to light and glare (spillover lighting) would not result in a significant impact after mitigation. Even this mitigated impact would be temporary. Therefore, the proposed program would not result in a considerable contribution to a cumulative impact related to light and glare.

Section 4.2

Agriculture and Forestry Resources

4.2.1 Introduction

This section describes the existing conditions for agriculture and forestry resources, the regulatory framework associated with agriculture and forestry resources, the impacts on agriculture and forestry resources that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program is not located within proximity to forestry resources; therefore, forestry resources are not discussed in this chapter.

4.2.2 Existing Conditions

The study area for agriculture includes land within 0.25 mile on each side of the pipeline alignments (a 0.5-mile-wide corridor). For this analysis, Important Farmland was identified, which is defined as areas identified in the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance. These Important Farmland categories are defined as follows.

- **Prime Farmland.** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Farmland of lesser-quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. (Note: No Farmland of Local Importance was identified in the study areas for any of the pipelines in the PCCP Rehabilitation Program.)

4.2.2.1 Allen-McColloch Pipeline

The Allen-McColloch Pipeline study area includes Prime Farmland, Unique Farmland, and Farmland of Statewide Importance in the cities of Irvine and Lake Forest and the County of Orange. Figure 4.2-1 shows where the Allen-McColloch Pipeline study area crosses Important Farmland as defined above, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance.

Approximately 142.6 acres of Prime Farmland, 20.8 acres of Farmland of Statewide Importance, and 500.2 acres of Unique Farmland occur within the Allen-McColloch Pipeline study area.

The Allen-McColloch Pipeline crosses the Santiago Hills and Northern Flatlands landforms located in the northeastern portion of the city of Irvine. According to the Conservation and Open Space Element of the City of Irvine General Plan (City of Irvine 2012), the Santiago Hills form the City of Irvine's northern sphere of influence boundary. The Santiago Hills consist of moderately steep to steep, unbuildable slopes, canyons, plateaus, and narrow ridges, which obtain an elevation of 1,700 feet. This area contains limited agricultural activities and grazing lands. The Northern Flatlands extend from the Santiago Hills to Interstate (I) 5. This area, known as the Tustin Plain, is nearly flat and gradually slopes from the northeast to the southeast. Generally, surface soils within the Northern Flatlands consist of fine-grained mixtures of sands, silts, and clay and are classified as "prime" Class I and II agricultural soils by the U.S. Soils Conservation Service. Farmland in this area includes orchards and row crops. Approximately 4.5 acres of Farmland of Statewide Importance and 2.7 acres of Unique Farmland occur within the Allen-McColloch Pipeline study area in the City of Irvine.

The Allen-McColloch Pipeline enters the city of Lake Forest in the northeastern portion of the city. Although this area is designated Low-Medium Density Residential by the City of Lake Forest General Plan, the California Department of Conservation (DOC) has identified this area as Farmland of Statewide Importance and Unique Farmland (City of Lake Forest 2014; DOC 2015a). Approximately 3.8 acres of Unique Farmland occur within the Allen-McColloch Pipeline study area in the city of Lake Forest.

The Allen-McColloch Pipeline study area includes various areas of Important Farmland designated in unincorporated Orange County, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. As shown on Figure 4.2-1, this farmland mainly occurs near State Routes (SR) 261, 241, and 133 near north Tustin and north Irvine. This area is also designated Suburban Residential, Open Space, and Open Space Reserve by the Orange County General Plan (County of Orange 2014).

4.2.2.2 Calabasas Feeder

The Calabasas Feeder study area (0.25 mile on either side of the pipeline) overlaps with Unique Farmland in the cities of Los Angeles and Hidden Hills. Figure 4.2-2 shows where the Calabasas Feeder crosses Important Farmland as designated by the FMMP. Approximately 26.18 acres of Unique Farmland occur within the Calabasas Feeder study area.

Only a few parcels of land in the city of Los Angeles remain designated as Important Farmland. The largest of these is the open space portion of Pierce College in Woodland Hills, which is related to the college's educational curriculum (City of Los Angeles 2001). The study area for the Calabasas Feeder includes approximately 25.5 acres of Unique Farmland in the city of Los Angeles near the southwest portion of Woodland Hills immediately adjacent to Hidden Hills.

The Calabasas Feeder enters the city of Hidden Hills in the east-southeast corner of the city. Although this area is designated Commercial Restricted, Single-Family Residential, and Public/Community Use by the Hidden Hills General Plan, DOC has identified this area as Unique Farmland (City of Hidden Hills 1995; DOC 2015a). Approximately 0.68 acre of Unique Farmland occurs within the Calabasas Feeder study area in the city of Hidden Hills.

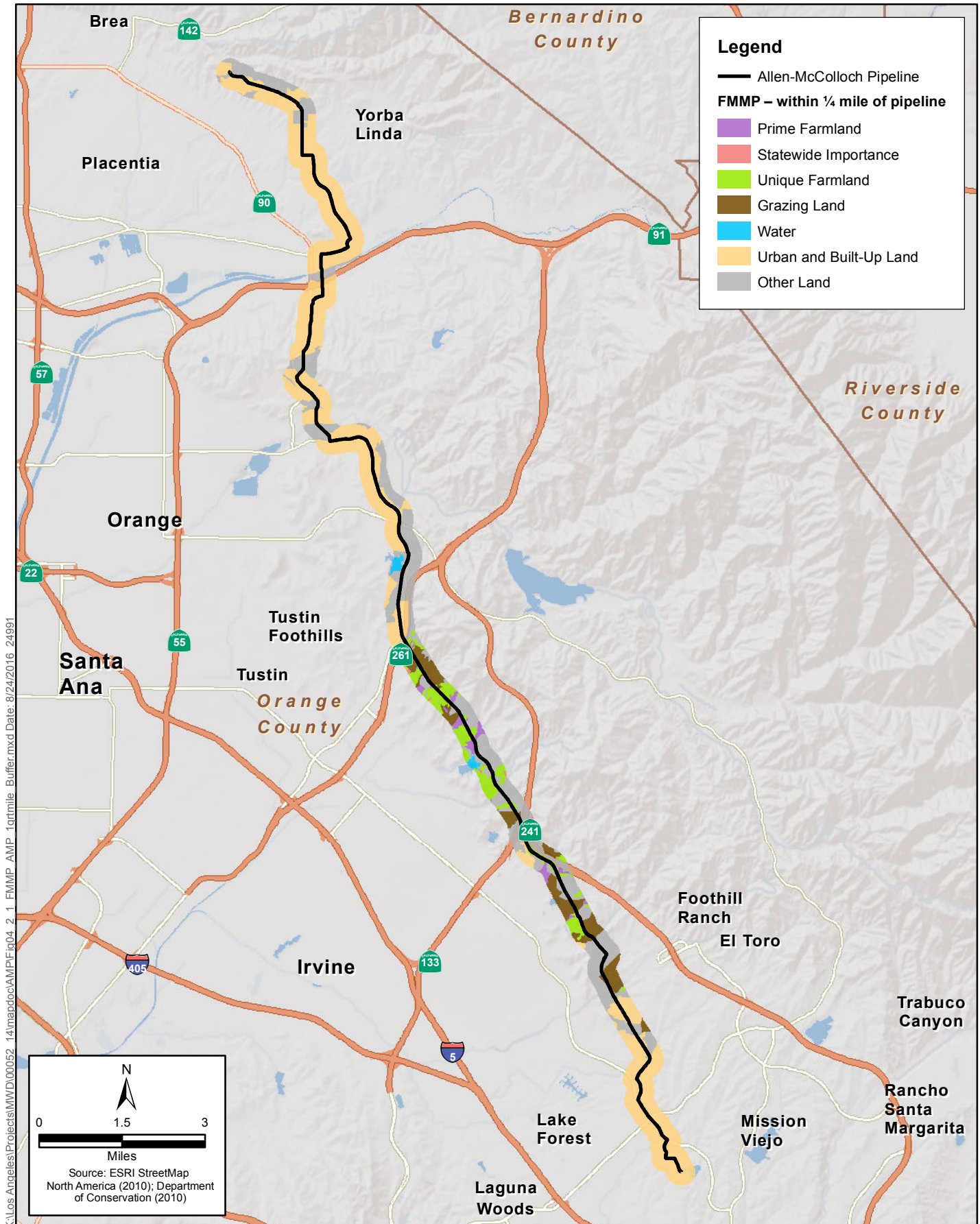


Figure 4.2-1
Important Farmland near the Allen-McColloch Pipeline
Metropolitan PCCP Program

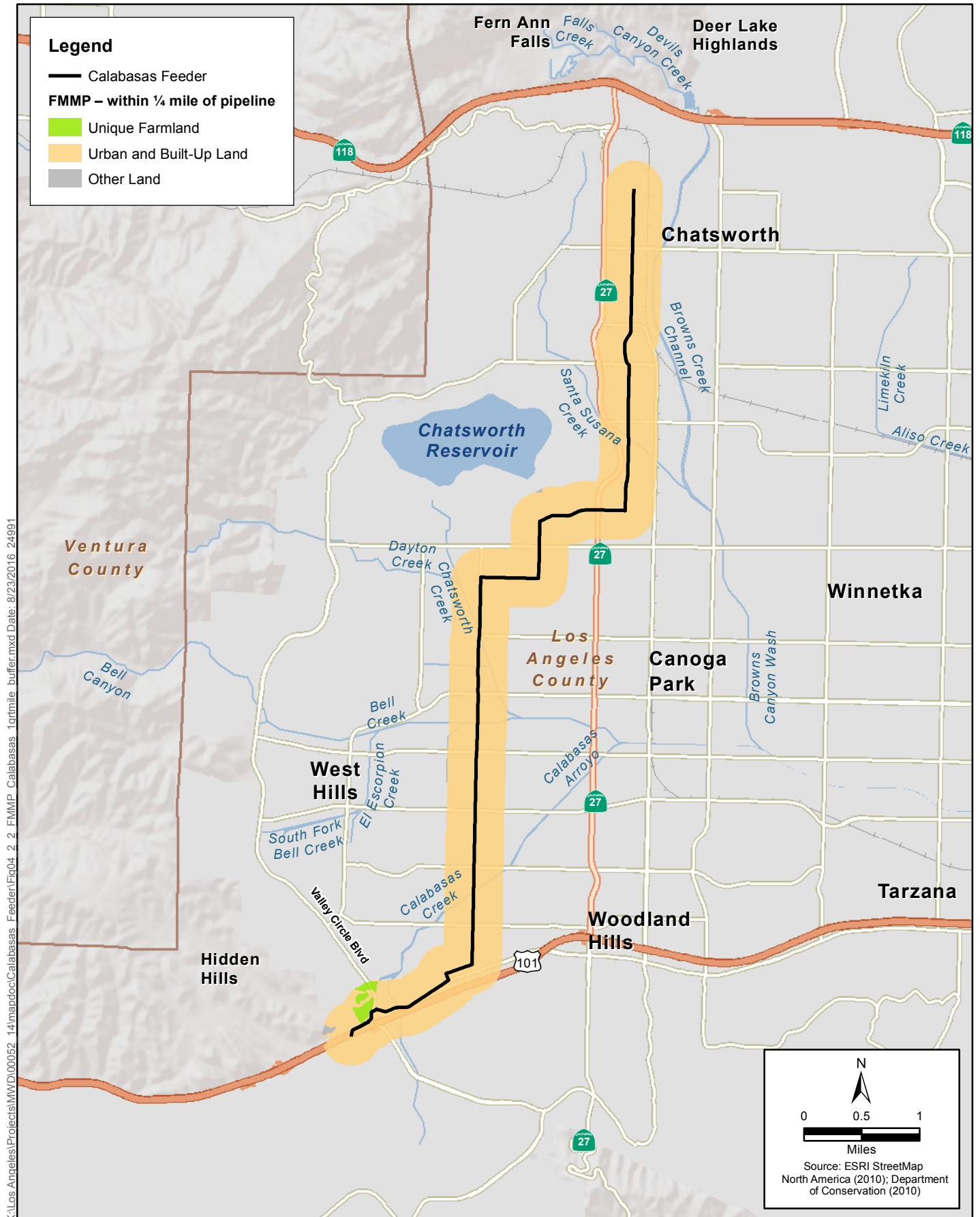


Figure 4.2-2
Important Farmland near the Calabasas Feeder
Metropolitan PCCP Program

4.2.2.3 Rialto Pipeline

The Rialto Pipeline study area (0.25 mile on either side of the pipeline) does not include any Important Farmland designated by the FMMP. See Figure 4.2-3.

4.2.2.4 Second Lower Feeder

The Second Lower Feeder study area (0.25 mile on either side of the pipeline) includes Unique Farmland in the cities of Yorba Linda, Anaheim, and Stanton. Figure 4.2-4 shows where the Second Lower Feeder crosses Important Farmland as designated by the FMMP. Approximately 17.42 acres of Unique Farmland occur within the Second Lower Feeder study area.

The Second Lower Feeder begins at the Diemer Water Treatment Plant in the northern portion of the city of Yorba Linda and terminates at the Palos Verdes Reservoir in the city of Rolling Hills Estates. The city of Yorba Linda is predominantly a residential community with a limited amount of undeveloped land. According to the Recreation and Resources Element of the City of Yorba Linda General Plan (City of Yorba Linda 1993), although some of this undeveloped land is currently used for small-scale agricultural uses, it is unlikely that it will continue as agricultural land in the future. DOC has designated Important Farmland in the northern portion of the city. This is also where the Second Lower Feeder study area overlaps with approximately 7.5 acres of Unique Farmland in the city of Yorba Linda.

The Second Lower Feeder enters the city of Anaheim in the northeast portion of the city and overlaps with Important Farmland designated by the FMMP in the southwest portion of the city near its border with the city of Stanton. This area is also designated Open Space by the city's General Plan (City of Anaheim 2004). According to the Land Use Element of the City of Anaheim General Plan (City of Anaheim 2004), there are nearly 3,400 acres of land in the city of Anaheim vacant or utilized for agricultural purposes; however, very little remains that is not already entitled for future development. The primary exceptions are the many utility easements that are envisioned to serve as trail connections, passive open space, or low-intensity commercial uses. Approximately 9.7 acres of Unique Farmland occur within the Second Lower Feeder study area in the city of Anaheim.

Although the Second Lower Feeder itself does not run through the city of Stanton, a portion of the study area crosses the northern portion of the city. This area is designated Open Space by the City of Stanton General Plan and is also identified as Unique Farmland by the FMMP (City of Stanton 2008; DOC 2015a). Approximately 0.22 acres of Unique Farmland occur within the Second Lower Feeder study area in the city of Stanton.

4.2.2.5 Sepulveda Feeder

The Sepulveda Feeder study area (0.25 mile on either side of the pipeline) does not include any Important Farmland designated by the FMMP. See Figure 4.2-5.

4.2.3 Regulatory Framework

This section describes the plans, policies, and regulations related to agriculture that are applicable to the proposed program.

4.2.3.1 Federal

There are no federal regulations related to agriculture applicable to the program.

4.2.3.2 State

Farmland Mapping and Monitoring Program

DOC administers various programs to conserve California farmland and open space resources, including the FMMP. The goal of the FMMP is to provide consistent, timely, and accurate data to decision makers for use in planning for the present and future of California's agricultural land resources. The FMMP produces maps and statistical data used for analyzing impacts on agricultural resources in the state. Agricultural land is rated according to soil quality and irrigation status. The maps are updated every 2 years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance.

The list below encompasses all categories mapped by DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land are referred to as "agricultural land" (DOC 2015b).

- **Prime Farmland.** Defined in Section 4.2.2, *Existing Conditions*
- **Farmland of Statewide Importance.** Defined in Section 4.2.2, *Existing Conditions*
- **Unique Farmland.** Defined in Section 4.2.2, *Existing Conditions*
- **Farmland of Local Importance.** Defined in Section 4.2.2, *Existing Conditions*
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- **Urban and Built-up Land.** Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- **Other Land.** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
- **Water.** Perennial water bodies with an extent of at least 40 acres.

4.2.3.3 Local

California Government Code Section 53091 exempts Metropolitan, as a regional public water purveyor and utility, from local zoning and building ordinances. Therefore, the PCCP Rehabilitation Program is not subject to local zoning regulations related to agriculture. In addition, there are no

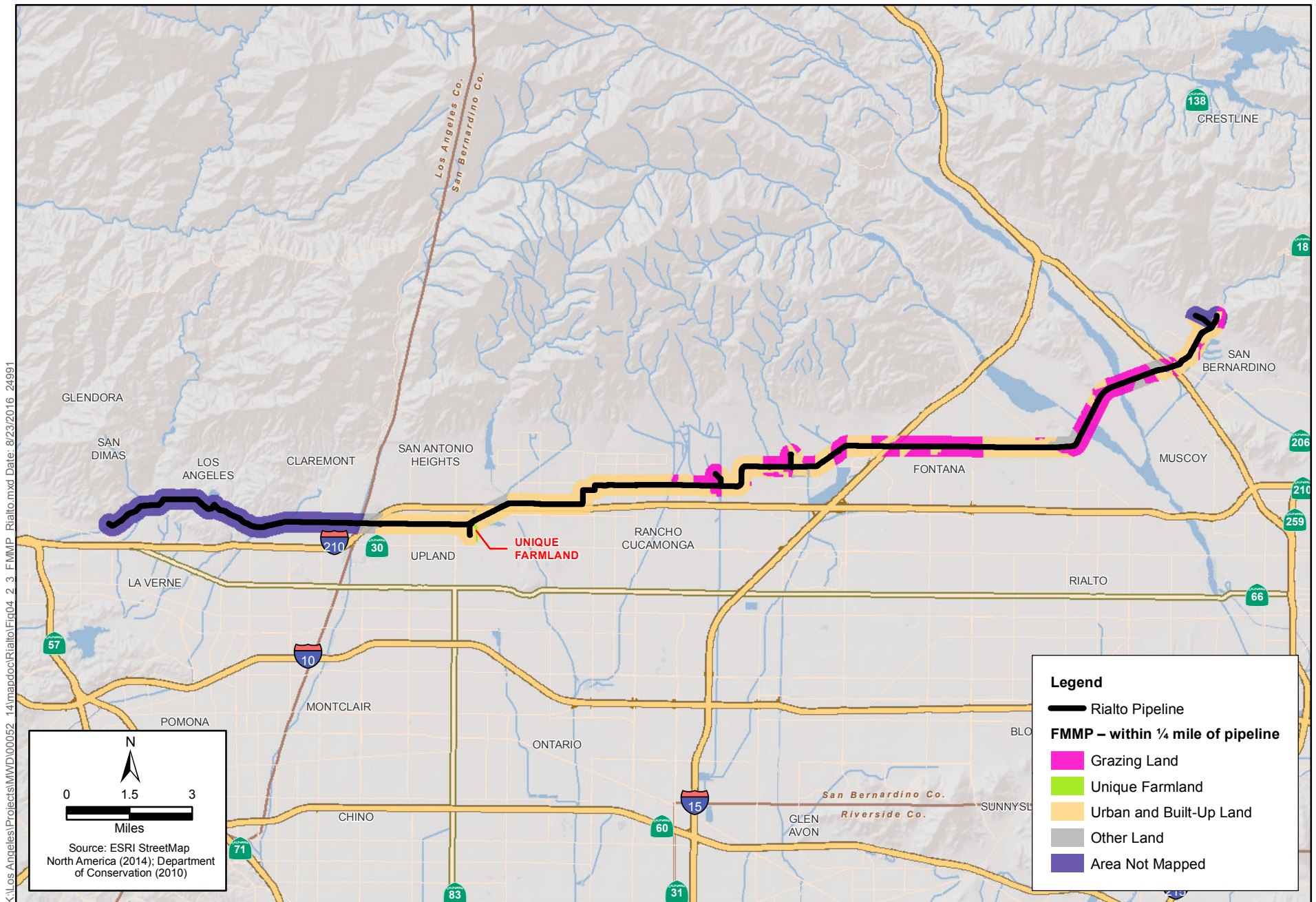


Figure 4.2-3
Important Farmland near the Rialto Pipeline
Metropolitan PCCP Program



Figure 4.2-4
Important Farmland near the Second Lower Feeder
Metropolitan PCCP Program



Figure 4.2-5
Important Farmland near the Sepulveda Feeder
Metropolitan PCCP Program

Farmlands of Local Importance determined by county boards of supervisors and local advisory committees within the study areas for the pipelines in the PCCP Rehabilitation Program.

4.2.4 Thresholds and Methodology

4.2.4.1 Thresholds of Significance

Table 4.2-1 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to agriculture and forestry resources. It also indicates which impacts were determined to be less than significant in the Initial Study and therefore do not require additional analysis, and which impacts must be analyzed in the PEIR for the proposed program.

Table 4.2-1. CEQA Thresholds for Agriculture and Forestry Resources**

Threshold <i>Would the proposed program:</i>	Analysis Required for the Proposed Program
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	X
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	N/A*
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined by 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 551104(g))?	N/A*
d. Result in the loss of forest land or conversion of forest land to non-forest use?	N/A*
e. Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or the conversion of forest land to non-forest use?*	X
* Determined to be less than significant in the Initial Study (Appendix A)	
** Because the Initial Study did not identify any forest land in the study area for the proposed program, that portion of the threshold will not be addressed in this document.	

4.2.4.2 Program Methodology

Direct Farmland Conversion

As documented in Section 4.2.2, *Existing Conditions*, this PEIR identifies Important Farmland within the study area for the pipeline alignments (within 0.25 mile of the pipeline). For this program-level analysis, the potential for impacts on Important Farmlands would occur if the rehabilitation of the pipelines would remove any such land from agricultural production, either permanently or temporarily. Because most of the pipelines are within public rights-of-way, typically under roadways, the pipeline rehabilitation projects discussed in this program would not permanently convert Important Farmland to other uses. During construction, temporary work areas extending

beyond the public rights-of-way or construction staging activities could be located on land designated as Important Farmland. The impacts resulting from this temporary use are evaluated.

Indirect Farmland Conversion

Other changes in the environment can sometimes cause the conversion of Important Farmland to non-agricultural use. Examples of this are pollution impacts on the soil's productivity, impacts on water quality or availability of water used for irrigation, impacts on air quality negatively affecting agricultural productivity, limiting or removing access to Important Farmlands, and increased noise (for confined animal agriculture). The agriculture analysis considers whether the proposed program would result in any impacts that would indirectly lead to the conversion of Important Farmland to non-agricultural use.

As part of the program, Metropolitan has agreed to implement the following environmental commitments that would limit indirect impacts on Important Farmlands; these commitments are considered part of the program for analysis purposes.

- Rehabilitation activities would comply with the South Coast Air Quality Management District's Rule 403 to minimize fugitive dust, construction traffic, and particulate matter releases.
- Rehabilitation activities would incorporate water quality Best Management Practices, including a Stormwater Pollution Prevention Plan, as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management.
- A Spill Emergency Response Plan would be prepared prior to the start of construction to ensure that hazardous materials and waste are handled, stored, and disposed of in accordance with applicable federal and state laws and regulations. All materials and fuels within the staging areas, excavation sites, and work zones would be stored in a manner that reduces the potential for spills.

4.2.5 Impacts Analysis

4.2.5.1 Program Analysis

Threshold AGR-A: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) to Non-Agricultural Use

Although there are designated agricultural lands within the study area for the PCCP program, the proposed program would not permanently convert any farmland to non-agricultural use. The proposed program would rehabilitate existing pipelines, usually located in existing roadway rights-of-way. Even where the pipelines cross agricultural lands, they are existing underground facilities.

During construction, agricultural lands may be temporarily used for access to the pipeline or for staging construction equipment. However, all land would be restored to its pre-construction condition once rehabilitation is completed (see Section 3.7.6, *Site Restoration*). Therefore, the proposed program would not permanently convert Important Farmland to non-agricultural use and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold AGR-E: Involve Other Changes in the Existing Environment that, Because of Their Location or Nature, Could Result in the Conversion of Farmland to Non-Agricultural Use

The proposed program would rehabilitate existing pipelines, usually located in existing roadway rights-of-way. Even where the pipelines cross agricultural lands, they are existing underground facilities. The proposed program could have temporary impacts that could affect agriculture in the study area, such as impacts on access or use of land for construction staging. Contractors for the rehabilitation work are required to maintain access to adjacent land, so while access may be changed during construction, access would not be precluded. If contractors use agricultural land for construction staging, they would be required to return it to pre-construction conditions. Therefore, there would be no changes to the existing environment that could lead to permanent conversion of farmland to non-agricultural use and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.2.5.2 Cumulative Analysis

The proposed program would not permanently convert farmland to non-agricultural use, either directly or indirectly. Therefore, the program would not make a considerable contribution to a cumulative impact on farmland.

Section 4.3 Air Quality

4.3.1 Introduction

This section describes the existing conditions for air quality, the regulatory framework associated with air quality, the impacts on air quality that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant air quality impacts. Impacts related to greenhouse gas emissions are provided in Section 4.7, *Greenhouse Gas Emissions*.

4.3.2 Existing Conditions

The study area for air quality is the South Coast Air Basin (Basin). See Figure 4.3-1.

4.3.2.1 Regional Setting

The proposed program lies within the Los Angeles County portion of the Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD has jurisdiction over an area of approximately 10,743 square miles, including all of Orange County; Los Angeles County, except for the Antelope Valley; the non-desert portion of western San Bernardino County; and the western and Coachella Valley portions of Riverside County. The Basin is a sub-region of SCAQMD's jurisdiction. Although air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

4.3.2.2 Climate and Meteorological Conditions

The proposed program would occur within the Basin, which covers approximately 6,745 square miles and is bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Geronio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography) as well as human-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

4.3.2.3 Regional and Localized Air Quality

Criteria Pollutants

Air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants, which are known as criteria air pollutants, are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and most fine particulate matter (particulate matter 10 microns or less in diameter [PM₁₀], particulate matter 2.5 microns or less in diameter [PM_{2.5}]), including lead (Pb) and fugitive dust, are primary air pollutants. Of these, CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. VOCs and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants. Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects (SCAQMD 2005).

Ozone

Ozone, a colorless toxic gas, is found in two regions of the Earth's atmosphere, at ground level and in the upper regions of the atmosphere. Both types of ozone have the same chemical composition (O₃). Although upper atmospheric O₃ protects the Earth from the sun's harmful rays, ground-level O₃ is the main component of smog (EPA 2016a). It enters the bloodstream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. It also damages vegetation by inhibiting growth. Although O₃ is not directly emitted, it forms in the atmosphere through a photochemical reaction between VOCs and NO_x in the presence of sunlight. O₃ is present in relatively high concentrations within the Basin, and the damaging effects of photochemical smog are generally related to the concentration of O₃. Meteorology and terrain play major roles in O₃ formation. Ideal smog conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies but can also occur during the winter months in high-elevation areas in the western United States with high levels of local VOC and NO_x emissions when snow is on the ground and temperatures are near or below freezing (EPA 2012). The greatest source of smog-producing gases is the automobile (SCAQMD 2012a).

Organic Gases—Precursors to Ozone

There are several subsets of organic gases, including reactive organic gases (ROGs) and VOCs. Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. ROG_s include all hydrocarbons except those exempted by ARB. Therefore, ROG_s are a set of organic gases based on state rules and regulations. VOC_s are similar to ROG_s in that they include all organic gases except those exempted by federal law. Both VOC_s and ROG_s are emitted from incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry-cleaning solutions, and paint. Generally speaking, and in this analysis, ROG_s and VOC_s are used interchangeably to refer to the hydrocarbons that are a precursor to O₃ formation. However, because SCAQMD uses VOC_s in the formulation of its thresholds, VOC_s are presented herein.

The primary health effects of hydrocarbons result from the formation of O₃ and its related health effects. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for VOCs or ROGs (EPA 2012). Carcinogenic forms of VOCs and ROGs are considered to be toxic air contaminants (TACs), which are described below. An example is benzene, which is a carcinogen.

Carbon Monoxide

Carbon monoxide is a colorless, odorless gas that can interfere with the transfer of oxygen to the brain. It can cause dizziness and fatigue and impair central nervous system functions. CO is emitted almost exclusively from incomplete combustion of fossil fuels. In urban areas, CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhaust releases most of the CO in urban areas. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest CO concentrations in Los Angeles County are typically recorded during the winter (SCAQMD 2005).

Nitrogen Dioxide

Nitrogen dioxide is a brownish gas that irritates the lungs. It can cause breathing difficulties at high concentrations. Similar to O₃, NO₂ is not directly emitted but is formed through a reaction between NO and atmospheric oxygen. Nitric oxide (NO) and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation. NO₂ also contributes to the formation of PM₁₀ (see discussion of PM₁₀ below). At atmospheric concentrations, NO₂ is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 to 3 years old) has also been observed at concentrations below 0.3 part per million (ppm) (SCAQMD 2005).

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air. These can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. PM₁₀ and PM_{2.5} represent fractions of particulate matter. PM₁₀ refers to particulate matter less than 10 microns in diameter, about 1/7th the thickness of a human hair. PM_{2.5} refers to particulate matter that is 2.5 microns or less in diameter, roughly 1/28th the diameter of a human hair. Major sources of PM₁₀ include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM_{2.5} results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM₁₀ and PM_{2.5} can be formed in the atmosphere from gases such as SO₂, NO_x, and VOCs.

Both PM₁₀ and PM_{2.5} pose a greater health risk than larger size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM₁₀ and PM_{2.5} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly. These substances can be absorbed into the bloodstream and cause damage elsewhere in the body; they can also transport absorbed gases such as chlorides or ammonium into the lungs and cause injury. Whereas particles measuring 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles measuring 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle and contribute to haze and reduce regional visibility (SCAQMD 2005).

Secondary PM_{2.5} Formation

PM_{2.5} particles are both directly emitted into the atmosphere (i.e., primary particles) and formed through atmospheric chemical reactions from precursor gases (i.e., secondary particles). Primary PM_{2.5} includes diesel soot, combustion products, road dust, and other fine particles. Secondary PM_{2.5}, which includes products such as sulfates, nitrates, and complex carbon compounds, is formed from reactions with directly emitted NO_x, SO_x, VOCs, and ammonia. Secondary formation of smaller particles can lead to elevated PM_{2.5} concentrations in the inland valley areas of the Basin (SCAQMD 2012a). The analysis herein focuses on the effects of direct PM_{2.5} emissions, consistent with the recommendations of SCAQMD (SCAQMD 2006).

Sulfur Dioxide

Sulfur dioxide is a product of high-sulfur-fuel combustion. The main sources of SO₂ are coal and oil used in power stations, industries, and domestic heating. Industrial chemical manufacturing is another source of SO₂. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO₂ can also cause plant leaves to turn yellow and erode iron and steel. In recent years, SO₂ concentrations have been reduced by the increasingly stringent controls placed on stationary-source emissions of SO₂ and limits on the sulfur content of fuels. SO₂ concentrations have been reduced to levels well below the state and national standards, but further reductions are needed to attain compliance with standards for sulfates and PM₁₀, to which SO₂ is a contributor (SCAQMD 2012a).

Lead

Lead is a natural constituent of air, water, and the biosphere and listed as both a criteria pollutant and a carcinogenic TAC. Pb is neither created nor destroyed in the environment, so it essentially persists forever. Pb was used several decades ago to increase the octane rating in automotive fuel. Because gasoline-powered automobile engines were a major source of airborne Pb through the use of leaded fuels and because the use of leaded fuel has been mostly phased out, the ambient concentrations of Pb have dropped dramatically. Short-term exposure to high levels of Pb can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of Pb can be harmful, especially to infants, young children, and pregnant women. Symptoms of long-term exposure to lower Pb levels may be less noticeable but are still serious. Anemia is common, and damage to the nervous system may cause impaired mental function. Other symptoms are appetite

loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys.

Emissions of Pb have dropped substantially over the past 40 years. However, sources of Pb emissions within the Basin remain, primarily the lead-acid battery recycling industry. Emissions from two large battery recycling facilities are responsible for the Basin's recent nonattainment designation under the NAAQS for Pb for Los Angeles County (SCAQMD 2012b).

Toxic Air Contaminants

With respect to criteria pollutants, federal and/or state ambient air quality standards represent the exposure level (with an adequate margin of safety) deemed safe for humans. No ambient air quality standards exist for TACs because no exposure level has been deemed safe for humans. Pollutants are identified as TACs because of their potential to increase the risk of developing cancer or their acute or chronic health risks. For TACs that are known or suspected carcinogens, ARB has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk. In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks (ARB 2010). AB 2588 requires local air districts like SCAQMD to designate high, intermediate, and low priority categories and report on facilities that may pose a risk to the public.

To date, ARB has identified 21 TACs and adopted the U.S. Environmental Protection Agency's (EPA) list of hazardous air pollutants as TACs. In August 1998, ARB identified diesel exhaust particulate matter (DPM) emissions as a TAC (ARB 1998). In September 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan was to reduce DPM emissions and the associated health risk by 75 percent by 2010 and by 85 percent by 2020 (ARB 2000).

Ambient Air Monitoring Stations

SCAQMD maintains a network of air quality monitoring stations throughout the Basin, each of which provides ambient air monitoring data for specific areas of the Basin. The proposed program would occur within numerous monitoring areas of the Basin. Monitoring data from sites near the proposed program are provided below. Although these monitoring locations may not be representative of every location in which program rehabilitation activities would occur, they provide context on the existing air quality at the local level.

Allen-McColloch Pipeline

The Mission Viejo – 26081 Via Pera Monitoring Station (ARB Site Number 30002) is 0.1 mile to the west of the southern end of the Allen-McColloch Pipeline and collects data for O₃, PM₁₀, and PM_{2.5}. Exceedances of the state 1-hour O₃ standard as well as the state and federal 8-hour O₃ standard were recorded at this site over the 3-year monitoring period from 2013 to 2015.

Table 4.3-1. Ambient Background Concentrations for Mission Viejo – 26081 Via Pera Monitoring Station (ARB Site Number 30002)

Pollutant Standards		2013	2014	2015
1-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.104	0.115	0.099
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-hour Standard (> 0.09 ppm)	2	4	2
8-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.082	0.088	0.088
	National Maximum Concentration (ppm)	0.082	0.088	0.088
	National Fourth-Highest Concentration (ppm)	0.074	0.078	0.075
	National Design Value (ppm)	0.072	0.074	0.075
<i>Number of Days Standard Exceeded</i>				
	CAAQS 8-hour Standard (> 0.070 ppm)	5	10	8
	NAAQS 8-hour Standard (> 0.075 ppm)	2	5	3
Carbon Monoxide (CO)				
	Maximum Concentration 8-hour Period (ppm)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 8-hour Standard (≥ 9 ppm)	N/A	N/A	N/A
	CAAQS 8-hour Standard (≥ 9.0 ppm)	N/A	N/A	N/A
Nitrogen Dioxide (NO₂)				
	Maximum National 1-hour Concentration (ppm)	N/A	N/A	N/A
	Maximum State 1-hour Concentration (ppm)	N/A	N/A	N/A
	Annual Average Concentration (ppm)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-Hour Standard (0.18 ppm)	N/A	N/A	N/A
	NAAQS 1-Hour Standard (100 ppb)	N/A	N/A	N/A
Suspended Particulates (PM₁₀)				
	Maximum State 24-hour Concentration (µg/m ³)	50.0	40.0	48.0
	Maximum National 24-hour Concentration (µg/m ³)	51.0	41.0	49.0
	State Annual Average Concentration (µg/m ³)	19.0	19.8	N/A
<i>Number of Days Standard Exceeded</i>				
	CAAQS 24-hour Standard (> 50 µg/m ³)	0	0	0
	NAAQS 24-hour Standard (> 150 µg/m ³)	0	0	0

Pollutant Standards		2013	2014	2015
Suspended Particulates (PM _{2.5})				
	Maximum National 24-hour Concentration (µg/m ³)	28.0	25.5	31.5
	24-hour Standard 98 th Percentile (µg/m ³)	17.5	N/A	15.1
	National Annual Average Concentration (µg/m ³)	8.0	N/A	7.0
	State Annual Average Concentration (µg/m ³)	8.1	N/A	7.0
<i>Number of Days Standard Exceeded</i>				
	NAAQS 24-hour Standard (> 35 µg/m ³)	0	0	0
ppm = parts per million; ppb = parts per billion; µg/m ³ = micrograms per cubic meter; N/A = data not available. Sources: ARB 2016b; EPA 2016b; ICF International 2016 (see Appendix C).				

Calabasas Feeder

The Reseda Monitoring Station (ARB Site Number 70074) is 5.2 miles east of the Calabasas Feeder and 2.3 miles west of Sepulveda Feeder. The station collects data for O₃, NO_x, and PM_{2.5}.

Exceedances of the state 1-hour O₃ standard, the state and federal 8-hour O₃ standard, and the PM_{2.5} federal standard were recorded at this site over the 3-year monitoring period from 2013 to 2015.

Table 4.3-2. Ambient Background Concentrations for Reseda Monitoring Station (ARB Site Number 70074)

Pollutant Standards		2013	2014	2015
1-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.124	0.116	0.119
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-hour Standard (> 0.09 ppm)	7	6	11
8-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.092	0.093	0.095
	National Maximum Concentration (ppm)	0.092	0.092	0.094
	National Fourth-Highest Concentration (ppm)	0.084	0.084	0.087
	National Design Value (ppm)	0.090	0.087	0.084
<i>Number of Days Standard Exceeded</i>				
	CAAQS 8-hour Standard (> 0.070 ppm)	21	31	34
	NAAQS 8-hour Standard (> 0.075 ppm)	11	11	15
Carbon Monoxide (CO)				
	Maximum Concentration 8-hour Period (ppm)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 8-hour Standard (≥ 9 ppm)	N/A	N/A	N/A
	CAAQS 8-hour Standard (≥ 9.0 ppm)	N/A	N/A	N/A
Nitrogen Dioxide (NO₂)				
	Maximum National 1-hour Concentration (ppm)	0.0581	0.0589	0.0725
	Maximum State 1-hour Concentration (ppm)	0.058	0.058	0.072
	Annual Average Concentration (ppm)	N/A	N/A	0.013

Pollutant Standards		2013	2014	2015
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-Hour Standard (0.18 ppm)	0	0	0
	NAAQS 1-Hour Standard (100 ppb)	0	0	0
Suspended Particulates (PM10)				
	Maximum State 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
	Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
	State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	CAAQS 24-hour Standard ($> 50 \mu\text{g}/\text{m}^3$)	0	0	0
	NAAQS 24-hour Standard ($> 150 \mu\text{g}/\text{m}^3$)	0	0	0
Suspended Particulates (PM2.5)				
	Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	41.8	27.2	36.8
	24-hour Standard 98 th Percentile ($\mu\text{g}/\text{m}^3$)	23.0	N/A	28.4
	National Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	9.8	N/A	8.8
	State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	9.9	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 24-hour Standard ($> 35 \mu\text{g}/\text{m}^3$)	1	0	1
ppm = parts per million; ppb = parts per billion; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; N/A = data not available. Sources: ARB 2016b; EPA 2016b; ICF International 2016 (see Appendix C).				

Rialto Pipeline

The Fontana-Arrow Highway Monitoring Station (ARB Site Number 36197) is 3.6 miles south of the Rialto Pipeline. The station collects data for O₃, NO_x, PM10, and PM2.5. Exceedances of the state 1-hour O₃ standard, the state and federal O₃ standard, the state PM10 standard, and the PM2.5 federal standard were recorded at this site over the 3-year monitoring period from 2013 to 2015.

Table 4.3-3. Ambient Background Concentrations for Fontana-Arrow Highway Monitoring Station (ARB Site Number 36197)

Pollutant Standards		2013	2014	2015
1-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.151	0.127	0.133
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-hour Standard (> 0.09 ppm)	34	31	36
8-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.123	0.106	0.111
	National Maximum Concentration (ppm)	0.122	0.105	0.111
	National Fourth-Highest Concentration (ppm)	0.100	0.093	0.100
	National Design Value (ppm)	0.103	0.099	0.097
<i>Number of Days Standard Exceeded</i>				
	CAAQS 8-hour Standard (> 0.070 ppm)	68	52	59
	NAAQS 8-hour Standard (> 0.075 ppm)	42	37	39

Pollutant Standards		2013	2014	2015
Carbon Monoxide (CO)				
	Maximum Concentration 8-hour Period (ppm)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 8-hour Standard (≥ 9 ppm)	N/A	N/A	N/A
	CAAQS 8-hour Standard (≥ 9.0 ppm)	N/A	N/A	N/A
Nitrogen Dioxide (NO₂)				
	Maximum National 1-hour Concentration (ppm)	0.0817	0.0704	0.0891
	Maximum State 1-hour Concentration (ppm)	0.081	0.070	0.089
	Annual Average Concentration (ppm)	0.020	N/A	0.018
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-Hour Standard (0.18 ppm)	0	0	0
	NAAQS 1-Hour Standard (100 ppb)	0	0	0
Suspended Particulates (PM₁₀)				
	Maximum State 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	86.0	65.0	92.0
	Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	90.0	68.0	96.0
	State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	38.8	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	CAAQS 24-hour Standard ($> 50 \mu\text{g}/\text{m}^3$)	15	10	13
	NAAQS 24-hour Standard ($> 150 \mu\text{g}/\text{m}^3$)	0	0	0
Suspended Particulates (PM_{2.5})				
	Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	43.6	34.9	50.5
	24-hour Standard 98 th Percentile ($\mu\text{g}/\text{m}^3$)	33.1	N/A	37.7
	National Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	12.2	N/A	11.0
	State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	12.3	N/A	11.0
<i>Number of Days Standard Exceeded</i>				
	NAAQS 24-hour Standard ($> 35 \mu\text{g}/\text{m}^3$)	1	0	3
ppm = parts per million; ppb = parts per billion; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; N/A = data not available. Sources: ARB 2016b; EPA 2016b; ICF International 2016 (see Appendix C).				

Second Lower Feeder

The Anaheim-Pampas Lane Monitoring Station (ARB Site Number 30178) is 0.9 mile north of the Second Lower Feeder. The station collects data for O₃, NO_x, PM₁₀, and PM_{2.5}. Exceedances of the state 1-hour O₃ standard, the state and federal 8-hour O₃ standard, the state PM₁₀ standard, and the PM_{2.5} federal standard were recorded at this site over the 3-year monitoring period from 2013 to 2015.

Table 4.3-4. Ambient Background Concentrations for Anaheim-Pampas Lane Monitoring Station (ARB Site Number 30178)

Pollutant Standards		2013	2014	2015
1-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.084	0.111	0.100
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-hour Standard (> 0.09 ppm)	0	2	1
8-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.070	0.082	0.081
	National Maximum Concentration (ppm)	0.070	0.081	0.080
	National Fourth-Highest Concentration (ppm)	0.063	0.076	0.065
	National Design Value (ppm)	0.064	0.068	0.068
<i>Number of Days Standard Exceeded</i>				
	CAAQS 8-hour Standard (> 0.070 ppm)	0	6	1
	NAAQS 8-hour Standard (> 0.075 ppm)	0	4	1
Carbon Monoxide (CO)				
	Maximum Concentration 8-hour Period (ppm)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 8-hour Standard (≥ 9 ppm)	N/A	N/A	N/A
	CAAQS 8-hour Standard (≥ 9.0 ppm)	N/A	N/A	N/A
Nitrogen Dioxide (NO₂)				
	Maximum National 1-hour Concentration (ppm)	0.0815	0.0758	0.0591
	Maximum State 1-hour Concentration (ppm)	0.081	0.075	0.059
	Annual Average Concentration (ppm)	N/A	N/A	0.014
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-Hour Standard (0.18 ppm)	0	0	0
	NAAQS 1-Hour Standard (100 ppb)	0	0	0
Suspended Particulates (PM₁₀)				
	Maximum State 24-hour Concentration (µg/m ³)	77.0	84.0	59.0
	Maximum National 24-hour Concentration (µg/m ³)	77.0	85.0	59.0
	State Annual Average Concentration (µg/m ³)	25.2	26.7	25.3
<i>Number of Days Standard Exceeded</i>				
	CAAQS 24-hour Standard (> 50 µg/m ³)	1	2	2
	NAAQS 24-hour Standard (> 150 µg/m ³)	0	0	0
Suspended Particulates (PM_{2.5})				
	Maximum National 24-hour Concentration (µg/m ³)	37.8	45.0	45.8
	24-hour Standard 98 th Percentile (µg/m ³)	22.7	N/A	N/A
	National Annual Average Concentration (µg/m ³)	10.0	N/A	N/A
	State Annual Average Concentration (µg/m ³)	10.1	16.1	14.6
<i>Number of Days Standard Exceeded</i>				
	NAAQS 24-hour Standard (> 35 µg/m ³)	1	4	3
ppm = parts per million; ppb = parts per billion; µg/m ³ = micrograms per cubic meter; N/A = data not available. Sources: ARB 2016b; EPA 2016b; ICF International 2016 (see Appendix C).				

Sepulveda Feeder

The Los Angeles – LAX (Westchester Parkway) Monitoring Station (ARB Site Number 70111) is 2.9 miles southwest of the Sepulveda Feeder. The station collects data for O₃, NO_x, and PM₁₀. Exceedances of the state 1-hour O₃ standard and the state and federal 8-hour O₃ standard were recorded at this site over the 3-year monitoring period from 2013 to 2015.

Table 4.3-5. Ambient Background Concentrations for Los Angeles – LAX (Westchester Parkway) Monitoring Station (ARB Site Number 70111)

Pollutant Standards		2013	2014	2015
1-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.105	0.114	0.096
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-hour Standard (> 0.09 ppm)	1	1	1
8-Hour Ozone (O₃)				
	State Maximum Concentration (ppm)	0.082	0.080	0.078
	National Maximum Concentration (ppm)	0.081	0.080	0.077
	National Fourth-Highest Concentration (ppm)	0.060	0.075	0.069
	National Design Value (ppm)	N/A	0.064	0.68
<i>Number of Days Standard Exceeded</i>				
	CAAQS 8-hour Standard (> 0.070 ppm)	1	6	3
	NAAQS 8-hour Standard (> 0.075 ppm)	1	3	1
Carbon Monoxide (CO)				
	Maximum Concentration 8-hour Period (ppm)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 8-hour Standard (≥ 9 ppm)	N/A	N/A	N/A
	CAAQS 8-hour Standard (≥ 9.0 ppm)	N/A	N/A	N/A
Nitrogen Dioxide (NO₂)				
	Maximum National 1-hour Concentration (ppm)	0.0778	0.0873	0.0870
	Maximum State 1-hour Concentration (ppm)	0.077	0.087	0.087
	Annual Average Concentration (ppm)	N/A	0.012	0.011
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-Hour Standard (0.18 ppm)	0	0	0
	NAAQS 1-Hour Standard (100 ppb)	0	0	0
Suspended Particulates (PM₁₀)				
	Maximum State 24-hour Concentration (µg/m ³)	37.0	45.0	42.0
	Maximum National 24-hour Concentration (µg/m ³)	38.0	46.0	42.0
	State Annual Average Concentration (µg/m ³)	N/A	21.9	N/A
<i>Number of Days Standard Exceeded</i>				
	CAAQS 24-hour Standard (> 50 µg/m ³)	0	0	0
	NAAQS 24-hour Standard (> 150 µg/m ³)	0	0	0

Pollutant Standards		2013	2014	2015
Suspended Particulates (PM_{2.5})				
	Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
	24-hour Standard 98 th Percentile ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
	National Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
	State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
<i>Number of Days Standard Exceeded</i>				
	NAAQS 24-hour Standard ($> 35 \mu\text{g}/\text{m}^3$)	N/A	N/A	N/A
ppm = parts per million; ppb = parts per billion; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; N/A = data not available. Sources: ARB 2016b; EPA 2016b; ICF International 2016 (see Appendix C).				

Sensitive Receptors

SCAQMD defines sensitive receptor locations as residential, commercial, and industrial land use areas as well as other locations where sensitive populations may be present. Other sensitive receptor locations include schools, hospitals, convalescent homes, day care centers, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed (SCAQMD 2005).

Each of the pipelines in the proposed program is within close proximity of residences, schools, and recreational facilities, with such receptor locations occurring adjacent to the roadway or at other locations in the immediate vicinity.

4.3.3 Regulatory Framework

This section describes the plans, policies, and regulations related to air quality that are applicable to the proposed program.

4.3.3.1 Federal

Federal Clean Air Act

The Federal Clean Air Act (CAA) was first enacted in 1963, but has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The CAA establishes the NAAQS and specifies future dates for achieving compliance. The CAA also mandates that the states submit a State Implementation Plan for regions that fail to meet the standards. The plans must include pollution control measures that demonstrate how the standards will be met. The City of Los Angeles is within the Basin, which is designated as a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emissions-reduction goals for areas that fail to meet the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect development of the proposed program include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for criteria

pollutants. Table 4.3-6 shows the NAAQS that are currently in effect for each criteria pollutant. Table 4.3-7 shows the region's attainment status for the NAAQS. The NAAQS were amended in July 1997 to include an 8-hour standard for O₃ and adopt a standard for PM_{2.5}. The 8-hour O₃ NAAQS was further amended in October 2015. EPA will designate O₃ attainment and nonattainment areas in late 2017.

Table 4.3-6. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b
O ₃	1 hour	0.09 ppm ^c	—
	8 hour	0.070 ppm	0.070 ppm
CO	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
NO ₂	1 hour	0.18 ppm	100 ppb
	Annual Arithmetic Mean	0.030 ppm	53 ppb
SO ₂	1 hour	0.25 ppm	75 ppb
	24 hour	0.04 ppm	0.14 ppm
PM ₁₀	24 hour	50 µg/m ³ ^c	150 µg/m ³
	Annual Arithmetic Mean	20 µg/m ³	—
PM _{2.5}	24 hour	—	35 µg/m ³
	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³
Sulfates	24 hour	25 µg/m ³	—
Pb	30 day average	1.5 µg/m ³	—
	Calendar quarter	—	1.5 µg/m ³
	Rolling 3-Month Average	—	0.15 µg/m ³
Hydrogen Sulfide	1 hour	0.03 ppm	—
Vinyl Chloride	24 hour	0.01 ppm	—
Notes: ^a The CAAQS for O ₃ , CO, SO ₂ (1-hour and 24-hour), NO ₂ , PM ₁₀ , and PM _{2.5} are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded. ^b The NAAQS, other than O ₃ and those pollutants using annual arithmetic mean, are not to be exceeded more than once a year. The O ₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1. ^c ppm = parts per million by volume; ppb = parts per billion; µg/m ³ = micrograms per cubic meter. Source: ARB 2016a.			

Table 4.3-7. Federal and State Attainment Status for the South Coast Air Basin

Pollutants	Federal Classification	State Classification
O ₃ (1-hour standard)	—	Nonattainment
O ₃ (8-hour standard)	Nonattainment, Extreme	Nonattainment
PM ₁₀	Attainment/Maintenance	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment/Maintenance	Attainment
NO ₂	Attainment/Maintenance	Attainment
SO ₂	Attainment	Attainment
Pb	Nonattainment	Attainment
Note that only the Los Angeles County portion of the Basin is nonattainment for NAAQS Pb. The remainder of the Basin is in attainment. Sources: ARB 2013b; EPA 2015; Appendix C.		

4.3.3.2 State

California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The Basin is in compliance with the California standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Table 4.3-6 details the current CAAQS, and Table 4.3-7 provides the Los Angeles County portion of the Basin's attainment status with respect to CAAQS.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, ARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the program, including heavy-duty trucks and off-road construction equipment, will be required to comply with the standards.

Toxic Air Contaminants

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

ARB identified DPM as a TAC in 1998 (ARB 1998). Shortly thereafter, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-

fueled engines and vehicles (ARB 2000). The goal of the plan is to reduce DPM (respirable particulate matter) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. The plan identifies 14 measures that ARB will implement over the next several years. Because ARB measures would be enacted before any phase of construction, the proposed program would be required to comply with applicable diesel control measures.

4.3.3.3 Regional

South Coast Air Quality Management District Rules and Regulations

SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources, control programs for area sources and indirect sources, an SCAQMD permitting system that allows no net increase in emissions from any new or modified (i.e., previously permitted) emissions sources, and transportation control measures. The most recent AQMP is the 2012 AQMP. The Final 2012 AQMP was adopted by the SCAQMD Governing Board on December 7, 2012. Control measure IND-01 was approved for adoption and inclusion in the Final 2012 AQMP at the February 1, 2013 Governing Board meeting. ARB approved the 2012 AQMP on January 25, 2013, and the AQMP has been submitted to EPA as a revision to the California State Implementation Plan (ARB 2013a). The 2012 AQMP addresses CAA requirements and includes a 24-hour PM_{2.5} plan; additional 8-hour O₃ measures, with a vehicle-miles-traveled (VMT) offset demonstration; and a 1-hour O₃ attainment demonstration with VMT offset demonstration. SCAQMD is in the process of developing the 2016 AQMP, which will be primarily focused on addressing the O₃ and PM_{2.5} standards. SCAQMD is expected to release the draft 2016 AQMP and environmental review in the spring of 2016 and adopt and submit the final 2016 AQMP by the summer of 2016.

SCAQMD published the *CEQA Air Quality Handbook* in November 1993¹ to help local governments analyze and mitigate project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses as part of CEQA documents prepared within SCAQMD's jurisdiction. In addition, SCAQMD has published two guidance documents: *Localized Significance Threshold Methodology for CEQA Evaluations* (2003, revised 2008) and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* (2006). These publications provide guidance for evaluating localized effects from mass emissions during construction. Both were used in the preparation of this analysis (SCAQMD 2006, 2008).

SCAQMD Rule 402—Nuisance

This rule prohibits the discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health, or safety of any such persons or the public; or cause, or have a natural tendency to cause, injury or damage to business or property. Odors are regulated under this rule.

SCAQMD Rule 403—Fugitive Dust

This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the property line of the emission's source. During construction, best available control measures identified in the rule would be required to

¹ Section updates provided on the SCAQMD website: <http://www.aqmd.gov/ceqa/hdbk.html>

minimize fugitive dust emissions from proposed earthmoving and grading activities. These measures would include site pre-watering and re-watering as necessary to maintain sufficient soil moisture content. Additional requirements apply to construction projects on properties with 50 or more acres of disturbed surface area or any earthmoving operation with a daily earthmoving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintenance of dust control records, and designation of an SCAQMD-certified dust control supervisor.

SCAQMD Rule 1108—Cutback Asphalt

This rule specifies VOC content limits for cutback asphalt.

SCAQMD Rule 1470—Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines

This rule specifies requirements for stationary diesel engines, including emergency standby generators. It requires owners or operators of emergency standby generators to keep monthly logs of usage, limits maintenance and testing to 20 hours per year, and requires emission rates to not exceed 0.40 gram per brake-horsepower hour.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties. SCAG addresses regional issues related to transportation, the economy, community development, and the environment, and is the federally designated metropolitan planning organization for a majority of the region and the largest metropolitan planning organization in the nation. As required by federal and state law, SCAG develops plans pertaining to transportation, growth management, hazardous waste management, housing, and air quality. SCAG data are used in the preparation of air quality forecasts and the consistency analysis included in the AQMP.

4.3.3.4 Local

Although local actions have important implications for air quality, regulation of air quality occurs primarily at the federal, state, and regional levels.

4.3.4 Thresholds and Methodology

4.3.4.1 Thresholds of Significance

Table 4.3-8 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to air quality. These thresholds are addressed in the PEIR.

Table 4.3-8. CEQA Thresholds for Air Quality

Threshold
<i>Would the proposed project or program:</i>
a. Conflict with or obstruct implementation of the applicable air quality plan?
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
c. Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?
d. Expose sensitive receptors to substantial pollutant concentrations?
e. Create objectionable odors that would affect a substantial number of people?

Appendix G of the State CEQA Guidelines further states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the determinations in Table 4.3-8. As such, SCAQMD has established significance thresholds intended to more specifically define CEQA Thresholds A through E.

Under Threshold A, SCAQMD thresholds consider whether the proposed program would:

- Result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards.
- Exceed the assumptions in the AQMP.

SCAQMD's current significance thresholds relative to CEQA Thresholds B through E are presented in Table 4.3-9. This information is used to analyze:

- The daily regional emissions for construction activities.
- Daily local emissions occurring at or around a particular site.
- Maximum incremental carcinogenic risk and hazard indices for TACs.

Both regional and local impact analyses are performed for certain thresholds where appropriate. A regional impact analysis is based on attaining or maintaining regional emissions standards, and a local impact analysis compares the on-site emissions of a pollutant to a health-based standard.

As indicated in the first column of Table 4.3-9, SCAQMD's thresholds are used to determine impacts relative to applicable Appendix G CEQA checklist questions (Questions A through E from Table 4.3-8). Some Appendix G CEQA checklist questions require multiple SCAQMD thresholds to determine impacts. For example, with respect to CEQA Threshold B, both regional emission thresholds (B1) and local emission thresholds (B2) are considered to determine significance. Therefore, a significant impact would occur if the proposed program would exceed SCAQMD's established daily emission rate, risk value, or concentration thresholds identified in Table 4.3-9.

Table 4.3-9. SCAQMD Air Quality Thresholds

CEQA Threshold	Pollutant	Daily Regional Emissions Thresholds (pounds/day)
A1/B1/C1	VOC	75
	NO _x	100
	CO	550
	PM10	150
	PM2.5	55
	SO _x	150
		Daily Local Emissions Thresholds (pounds/day) ¹
B2/C2/D1	NO _x	46
	CO	231
	PM10	4
	PM2.5	3
		Other Thresholds
D2	TACs	Maximum Incremental Carcinogenic Risk \geq 10 in 1 million
D3		Chronic and Acute Hazard Index \geq 1.0 (project increment)
E1	Odor	Project creates an odor nuisance pursuant to Rule 402
Notes: Letter:1 indicates regional emissions Letter:2 indicates local emissions ¹ Program activities would occur in at least 18 of the source receptor areas (SRAs) within the Basin, which include SRAs 2, 3, 4, 6, 10, 11, 16, 17, 20, 21, 23, 24, 25, 30, 32, 33, 34, and 37. Because each SRA has its own localized significance threshold (LST) based on the location, size of the site, and distance to the nearest receptor, the LST for SRA No. 12 (South Central LA County) is being used because it represents the most stringent standard in the Basin. A 1-acre site and 25-meter receptor distance for this location was selected on the basis that it has the most stringent LST. Source: SCAQMD 2008.		

SCAQMD developed localized significance threshold (LST) methodology and mass rate look-up tables in 2003 and updated them in 2008. This information is used to determine whether or not a project may generate significant adverse localized air quality impacts (SCAQMD 2008). LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. They are developed based on the ambient concentrations of that pollutant for each of the 37 source receptor areas (SRAs) within the SCAQMD. It should be noted that use of LSTs is voluntary. LSTs are applicable at the project-specific level and generally are not applicable to regional projects such as local general plans unless specific projects are identified in the general plans (SCAQMD 2008). Applicable SRA Zones for the proposed program include the following: 2, 3, 4, 6, 10, 11, 16, 17, 20, 21, 23, 24, 25, 30, 32, 33, 34, and 37.

4.3.4.2 Methodology

Because the proposed program intends to extend the service life of PCCP and appurtenant structures for these facilities to continue operating as they do at present, there would be no change in the operational characteristics relative to existing conditions once rehabilitation activities are

complete. Therefore, no operational air quality impacts are considered and the following analysis is limited to the construction period.

Construction phasing information, construction equipment that would be used, excavation and paving quantities, and truck trips were obtained from Metropolitan. Pollutant estimates were based on a combination of assumptions based on Metropolitan's experience with similar types of projects, information from Table 3-2 in Chapter 3, *Program Description*, and defaults derived from sources identified herein, as described below and in Table 4.3-10.

- Emission factors for off-road construction equipment (e.g., loaders, cranes) were obtained from the California Emissions Estimator Model (CalEEMod) *User's Guide* (CAPCOA 2013) Appendix D, which provides values per unit of activity (in grams per horsepower-hour) for each calendar year. Equipment load factors and engine horsepower ratings were also obtained from CalEEMod. Emissions from off-road equipment were estimated by multiplying the CalEEMod default data by the equipment inventory in Table 3-2 in Chapter 3, *Program Description*.
- Emission factors for on-road employee commute vehicles were obtained from ARB's EMFAC2011 web tool (ARB 2011). Factors are based on weighted average vehicle speeds for EMFAC's light-duty truck vehicle category. One-way trip lengths are based on CalEEMod defaults, which are 14.7 miles per employee trip (Los Angeles County portion of Basin, home-work trip) (CAPCOA 2013). All employees were conservatively assumed to make two trips to the project site per day. Emissions generated by employee vehicles were estimated by multiplying the number of employee vehicle trips by the EMFAC2011 emission factors and default mileage.
- Emission factors for on-road haul trucks were obtained from ARB's EMFAC2011 web tool (ARB 2011). Factors for on-site trucks are based on EMFAC's T7 Tractor category for vehicles traveling at 5 miles per hour. Emission factors for off-site haul trucks are based on weighted average vehicle speeds for EMFAC's T7 Tractor vehicle category. Criteria pollutants and GHGs generated by on-site and off-site trucks were estimated by multiplying the EMFAC2011 emission factors by vehicle mileage estimates. Because the fleet of on-road haul trucks would use diesel fuel, all emissions would be the result of incomplete diesel fuel combustion.
- Fugitive re-entrained road dust emissions are based on EPA's AP-42 methodology and VMT data (EPA 2011).
- Fugitive PM10 and PM2.5 dust emissions associated with earthwork are based on daily intensity rates (acres graded per day) and fugitive dust calculation methodologies contained in the CalEEMod *User's Guide* (CAPCOA 2013). Unmitigated emissions were reduced by 61 percent from uncontrolled levels to reflect required compliance with SCAQMD Rule 403 (SCAQMD 1993:Table A11-9-A: A11-77). The dust-control methods for the program will be specified in the dust-control plan that would be submitted to the SCAQMD per Rule 403.

Table 4.3-10. Construction Emissions Sources and Quantification Methodology

Emissions Source	Location	Emission Factors	Quantification Method
Off-road Equipment	On site	Engine emission factors from CalEEMod <i>User's Guide</i>	Engine emission factors, horsepower, and load factors multiplied by daily operating activity (hours)
Employee Vehicles	Off site	Engine emission factors from EMFAC2011 (LDA/LDT category)	Engine emission factors multiplied by the number of daily employee trips and default trip mileage (14.7 miles)
Haul Trucks	On and off site	Engine emission factors from EMFAC2011 (T7 Tractor category)	Engine emission factors multiplied by daily vehicle mileage
Re-entrained Dust	On and off site	PM10 and PM2.5 emission factors (0.73 and 0.18 gram per mile, respectively) from ARB 2011	Dust emission factors multiplied by daily VMT
Earthwork and Grading ^a	On site	PM10 and PM2.5 emission factors (0.41 and 0.04 pound per acre, respectively) from CalEEMod	Dust emission factors multiplied by daily graded acres
Paving	On site	ROG emission factor (2.62 pounds per acre) from CalEEMod	ROG emission factor multiplied by daily paved area
^a Accounts for 61 percent from uncontrolled levels to reflect required compliance with SCAQMD Rule 403. LDA = light-duty automobile; LDT = light-duty truck			

Emissions from each of the sources above are presented at the daily scale and compared with the SCAQMD construction thresholds identified above. Peak daily construction emissions were estimated by calculating emissions for the individual construction scenarios and then summing emissions from overlapping activities. For the purposes of this analysis, it was assumed that the phase of each of the following construction/rehabilitation activities with the highest emissions would take place concurrently.

- 10 typical excavation sites for relining and valve replacement
- Two new valves/meter vaults would be constructed and the existing vault would be demolished (the maximum size of the vault was assumed, as identified in Chapter 3)
- Three below-grade air-release/vacuum valves relocated to above ground
- A 1,000-foot segment of new pipeline would be installed parallel to the existing PCCP

The combination of sequences across all locations that produce the highest daily emissions in each construction year was selected as the peak day for analysis purposes. This approach is meant to convey a worst-case scenario, and is therefore not necessarily representative of emissions that would occur on a daily basis throughout the construction period.

Due to the consistent improvements in the emissions of construction equipment and vehicles and the fact that older, less efficient equipment and vehicles are phased out over time, the greatest emissions would occur in the near future as opposed to the more distant future. As such, the first 5 years of the program are quantified to show the greatest impacts. Although there would continue to be impacts in the more distant future, emissions would be lower.

All emissions calculation worksheets and modeling output files are provided in Appendix C, *Air Quality Calculations*.

Applicable Air Quality Plan

As discussed in Section 4.3.3.3 above, the Final 2012 AQMP is the most recently adopted AQMP. SCAQMD rules and guidance documents, such as the CEQA Air Quality Handbook and the *Localized Significance Threshold Methodology for CEQA Evaluations*, provide the means by which projects demonstrate their consistency with the AQMP.

Criteria for determining consistency for the AQMP is defined in the CEQA Air Quality Handbook. There are two key indicators of consistency:

- **Consistency Criterion No. 1:** Whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- **Consistency Criterion No. 2:** Whether the project will exceed the assumptions in the AQMP or increments based on the year of project build-out and phase.

Air Quality Standards and Criteria Pollutants

The significance thresholds identified above are the project-level air quality standards that are used to evaluate program impacts.

Sensitive Receptors

The LST methodology identified above is used as the project-level air quality standard to evaluate localized impacts on sensitive receptors. The LST analysis, which addresses pollutant proximity to sensitive receptors, was performed using the closest receptor distance (25 meters) and most conservative site size (1 acre) in the lowest LST-thresholds area within the Basin (SRA No. 12).²

Objectionable Odors

The Initial Study for the proposed program determined that impacts related to objectionable odors would not occur as a result of program rehabilitation activities. Therefore, there is no discussion of odor impacts in this section.

² LST standards increase as the distance from emissions source increases, and as site acreage increases. As such, it is most conservative to assume the closest receptor distance and smallest construction site acreage.

4.3.5 Impacts Analysis

4.3.5.1 Program Analysis

Threshold AQ-A: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

Criteria for determining consistency for the AQMP is defined in the CEQA Air Quality Handbook. There are two key indicators of consistency:

- **Consistency Criterion No. 1:** Whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- **Consistency Criterion No. 2:** Whether the project will exceed the assumptions in the AQMP or increments based on the year of project build-out and phase.

Consistency Criterion No. 1 refers to violations of NAAQS and CAAQS. SCAQMD recommends an air quality modeling analysis be performed to identify project impacts. In order to be found consistent with Consistency Criterion No. 1, the analysis needs to demonstrate that project emissions would not increase the frequency or severity of existing violations or cause or contribute to new violations. Although there would be no changes in land use or pollutant emissions associated with operation of the proposed program, construction-period emissions would exceed regional mass emissions thresholds developed to aid the Basin in achieving attainment for those pollutants for which it is nonattainment (see the discussion for Threshold AQ-B). Mitigation Measure MM AIR-1 would reduce the exceedances of regional mass emissions, but impacts would remain significant. Therefore, the proposed program would conflict with Consistency Criterion No. 1. This would be a significant and unavoidable impact.

For Criterion No. 2, SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Basin is in nonattainment status. SCAQMD's most recent plan to achieve air quality standards is the 2012 AQMP, adopted by the SCAQMD Governing Board on December 7, 2012. The 2012 AQMP outlines a comprehensive control strategy to meet the requirement for expeditious progress toward attainment of the 24-hour PM_{2.5} NAAQS in 2014 through all feasible control measures. The 2012 AQMP also includes specific measures for implementing the O₃ strategy from the 2007 AQMP and attaining the 8-hour O₃ standard by 2023 (SCAQMD 2012a).

These strategies are based, in part, on regional population, housing, and employment projections prepared by the region's cities and counties and incorporated by SCAG. As such, projects that propose development that is consistent with the growth anticipated in the relevant land use plans used in the formulation of the AQMP are considered to be consistent with the AQMP.

Given that the proposed program would not involve changes to land use and would allow Metropolitan to extend the life of its facilities, the proposed program is considered consistent with the assumptions used in the development of the AQMP. Therefore, the proposed program would not conflict with Consistency Criterion No. 2.

Mitigation Measures

MM AIR-1 All off-road diesel-powered construction equipment greater than 50 horsepower will meet Tier 4 emission standards. All construction equipment will be outfitted with ARB best available control technology devices. Any emissions-control device used by the contractor will achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. A copy of each unit's certified tier specification, best available control technology documentation, and ARB or SCAQMD operating permit will be provided to Metropolitan's Construction Inspector at the time of mobilization of each applicable unit of equipment.

Residual Impacts

Impacts that would result from the proposed program would be significant. Implementation of MM AIR-1 would reduce these impacts; however, residual impacts would still be significant and unavoidable.

Threshold AQ-B: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation

Regional Mass Emissions

Pollutants would be emitted as a result of rehabilitation activities stemming from the use of construction equipment (primarily diesel-powered), haul and materials vehicle trips, and fugitive dust. Table 4.3-11 shows expected 2018 emissions for a single site associated with each of the modeled construction types. No exceedances of regional mass thresholds would occur when an individual site is considered.

Table 4.3-11. 2018 Daily Regional Mass Emissions for Single Sites (pounds per day)

	VOC	CO	NO _x	SO _x	PM10	PM2.5
Typical Excavation Site	7	37	60	<1	3	3
Typical New Valve/Meter Vault Structure	8	42	63	<1	3	3
Typical Below Grade Air-release/Vacuum Valve Relocation	7	32	58	<1	3	2
Pipeline Replacement/Parallel Piping	8	40	77	<1	3	3
<i>Single-Site Maximum</i>	8	42	77	<1	3	3
<i>Regional Mass Emissions Threshold</i>	75	550	100	150	150	55
<i>Single Site Exceeds Threshold?</i>	No	No	No	No	No	No
Source: Calculations by ICF International 2016 (see Appendix C).						

However, as shown in Table 4.3-12, the 2018 emissions for the full construction scenario of 10 relining sites, two new valve/meter vaults, three relocations of air-release/vacuum valves, and a 1,000-foot section of parallel piping occurring at the same time with the phases with the greatest emissions overlapping would result in exceedances of regional mass emissions thresholds for VOC, CO, and NO_x. This would be a significant air quality impact.

Table 4.3-12. 2018 Daily Regional Mass Emissions for Full Construction Scenario (pounds per day)

	VOC	CO	NO_x	SO_x	PM10	PM2.5
Typical Excavation Site	74	372	604	1	31	30
Typical New Valve/Meter Vault Structure	16	85	127	<1	7	6
Typical Below Grade Air-release/Vacuum Valve Relocation	21	96	175	<1	8	7
Pipeline Replacement/Parallel Piping	8	40	77	<1	3	3
<i>Single-Site Maximum</i>	118	593	983	1	48	47
<i>Regional Mass Emissions Threshold</i>	75	550	100	150	150	55
<i>Single Site Exceeds Threshold?</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Source: Calculations by ICF International 2016 (see Appendix C).						

With the implementation of MM AIR-1, impacts would be reduced to the levels shown in Table 4.3-13, but exceedances of the thresholds would occur for CO and NO_x.

Table 4.3-13. Mitigated Daily 2018 Regional Mass Emissions for Full Construction Scenario (pounds per day)

	VOC	CO	NO_x	SO_x	PM10	PM2.5
Typical Excavation Site (10)	43	372	129	1	5	5
Typical New Valve/Meter Vault Structure (2)	9	85	27	<1	1	1
Typical Below Grade Air-release/Vacuum Valve Relocation (3)	10	96	22	<1	1	1
Pipeline Replacement/ Parallel Piping (1,000 feet)	5	40	30	<1	1	1
<i>Total for All Sites</i>	68	593	208	1	9	8
<i>Regional Mass Emissions Threshold</i>	75	550	100	150	150	55
<i>Total Exceeds Threshold?</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Source: Calculations by ICF International 2016 (see Appendix C).						

As shown in Table 4.3-14, regional mass emissions would be reduced in each modeled year after 2018, but would remain significant through 2022 for CO and NO_x.

Table 4.3-14. Mitigated Daily Regional Mass Emissions for Full Construction Scenario (pounds per day)

	VOC	CO	NO _x	SO _x	PM10	PM2.5
2018 Total for All Sites	68	593	208	1	9	8
2019 Total for All Sites	62	584	193	1	8	7
2020 Total for All Sites	57	578	179	1	7	6
2021 Total for All Sites	53	572	164	1	7	6
2022 Total for All Sites	50	568	153	1	6	5
<i>Regional Mass Emissions Threshold</i>	75	550	100	150	150	55
<i>Single Site Exceeds Threshold?</i>	No	Yes	Yes	No	No	No
Source: Calculations by ICF International 2016 (see Appendix C).						

Localized Emissions

Localized emissions would result from those activities that would occur at a given site and in the immediate vicinity. Only on-site construction equipment and idling of truck trips required for hauling are considered, as all but a few of the emissions of on-road vehicles would occur away from the site. Due to the linear nature of the proposed program and the fact that sites would be spread out along the alignment, the emissions of single sites are considered in isolation of one another. Table 4.3-15 shows the on-site emissions for each of the modeled elements of the proposed program, which indicates that the LSTs would be exceeded for NO_x and PM2.5. This would be a significant impact.

Table 4.3-15. 2018 Daily Localized Emissions for Single Sites (pounds per day)

	VOC	CO	NO _x	SO _x	PM10	PM2.5
Typical Excavation Site	7	37	58	<1	3	3
Typical New Valve/Meter Vault Structure	8	42	61	<1	3	3
Typical Below Grade Air-release/Vacuum Valve Relocation	7	32	57	<1	2	2
Pipeline Replacement/Parallel Piping	7	36	57	<1	3	3
<i>Single-Site Maximum</i>	8	42	61	<1	3	3
<i>Regional Mass Emissions Threshold</i>	N/A	231	46	N/A	4	3
<i>Single Site Exceeds Threshold?</i>	N/A	No	Yes	N/A	No	Yes
Notes: 1-acre site and 25-meter receptor distances in SRA No. 12 South Central LA County are used, which have the most stringent LSTs; no LSTs have been established for VOC and SO _x .						
Source: Calculations by ICF International 2016 (see Appendix XXC).						

As shown in Table 4.3-16, with implementation of MM AIR-1, no exceedances of the LSTs would occur. Because no exceedances of the LSTs would occur in the mitigated 2018 condition, construction in the years following 2018 would also not exceed the LSTs, as newer, cleaner equipment would replace older, higher-emitting equipment.

Table 4.3-16. 2018 Mitigated Daily Localized Emissions for Single Sites (pounds per day)

	VOC	CO	NO _x	SO _x	PM10	PM2.5
Typical Excavation Site	4	37	10	<1	<1	<1
Typical New Valve/Meter Vault Structure	4	42	11	<1	1	1
Typical Below Grade Air-release/Vacuum Valve Relocation	3	32	6	<1	<1	<1
Pipeline Replacement/Parallel Piping	4	36	10	<1	<1	<1
<i>Single-Site Maximum</i>	4	42	11	<1	1	1
<i>Regional Mass Emissions Threshold</i>	N/A	231	46	N/A	4	3
<i>Single Site Exceeds Threshold?</i>	N/A	No	No	N/A	No	No
Notes: 1-acre site and 25-meter receptor distances in SRA No. 12 South Central LA County are used, which have the most stringent LSTs; no LSTs have been established for VOC and SO _x . Source: Calculations by ICF International 2016 (see Appendix C).						

Mitigation Measures

Implementation of MM AIR-1.

Residual Impacts

Impacts that would result from the proposed program would be significant. Implementation of MM AIR-1 would reduce these impacts; however, residual impacts would still be significant and unavoidable.

Threshold AQ-C: Result in a Cumulatively Considerable Net Increase in Any Criteria Pollutant for Which the Region Is in Non-Attainment under an Applicable Federal or State Ambient Air Quality Standard

As discussed under Threshold AQ-B above, implementation of the proposed program would result in exceedances of the regional mass emission thresholds for CO and NO_x. With implementation of mitigation, these impacts would be reduced, but would remain significant and unavoidable.

Mitigation Measures

Implementation of MM AIR-1.

Residual Impacts

Impacts that would result from the proposed program would be significant. Implementation of MM AIR-1 would reduce these impacts; however, residual impacts would still be significant and unavoidable.

Threshold AQ-D: Expose Sensitive Receptors to Substantial Pollutant Concentrations

With regard to criteria pollutant emissions, the localized significance threshold analysis shown in Table 4.3-16 demonstrates that impacts would be significant with the implementation of MM AIR-1.

Mitigation Measures

Implementation of MM AIR-1.

Residual Impacts

Impacts that would result from the proposed program would be significant. Implementation of MM AIR-1 would reduce these impacts; however, residual impacts would still be significant and unavoidable.

Threshold AQ-F: Create Objectionable Odors that Would Affect a Substantial Number of People

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. Rehabilitation includes none of these land uses. During the rehabilitation process, some limited odor may result from asphalt paving activities, which may be detectable by people immediately adjacent to work sites. However, asphalt paving would occur for a limited time period at each excavation site (less than 1 week), and the locations of paving activities would be distributed over several excavation sites along the entire alignment. Furthermore, SCAQMD Rule 402 prohibits the discharge of air contaminants that cause nuisance or annoyance to the public, including odors. Also SCAQMD maintains both a toll-free phone line (1-800-CUT-SMOG) and a web-based platform (<http://www.aqmd.gov/contact/complaints>) for reporting complaints related to air quality, including odors. Given the limited duration and location of asphalt paving, mandatory compliance with SCAQMD Rule 402, and ability for the public to report complaints to SCAQMD, rehabilitation would not create a significant level of objectionable odors. Impacts would be less than significant

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.3.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

Because the proposed program would exceed regional mass thresholds that have been developed to bring the Basin into attainment for all criteria pollutants and emissions would remain in excess of those thresholds with implementation MM AIR-1, impacts would be cumulatively considerable. The proposed program would comply with all applicable SCAQMD rules and regulations, including Rule 403 (Fugitive Dust Control) and Rule 1108 (Cutback Asphalt), during construction as well as all

other adopted AQMP emissions control measures to minimize emissions and impacts on nearby sensitive receptors.

Section 4.4

Biological Resources

4.4.1 Introduction

This section describes the existing conditions for biological resources, the regulatory framework associated with biological resources, the impacts on biological resources that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant biological resources impacts.

4.4.2 Existing Conditions

The study area for biological resources is the pipeline easements or rights-of-way and 0.25 mile on either side of the alignments (a half-mile corridor). Figures 4.4-1 through 4.4-5 show the biological resources study area and areas with potential for significant biological resources within these study areas.

4.4.2.1 Allen-McColloch Pipeline

The Allen-McColloch Pipeline alignment begins near the east side of the Robert B. Diemer Water Treatment Plant (Diemer Plant) and travels eastward and southward through an area of open space, a golf course, and undeveloped utility easements until it reaches Yorba Linda Boulevard. From this point until it crosses under the Santa Ana River, the pipeline is below street rights-of-way. Where the Allen-McColloch Pipeline crosses under the Santa Ana River, the river is a managed soft-bottomed channel used for flood control and groundwater recharge. After crossing the river, the alignment is again within street rights-of-way and developed areas until it crosses State Route 91 (SR-91). South of SR-91, the alignment is under increasingly larger areas of open space, first just small, isolated undeveloped areas and then mostly undeveloped open space between approximately State Route 261 (SR-261) and Alton Parkway. Past Alton Parkway, the alignment is within some open space areas, but also street rights-of-way. Once it reaches Trabuco Road, it is mostly in street rights-of-way until its southern terminus.

Special-status Species

Special-status species are plants or animals that are legally protected under the federal Endangered Species Act (FESA), California Endangered Species Act (CESA), California Native Plant Protection Act, or other regulations; for example, species that meet the definitions of rare, threatened, or endangered under State CEQA Guidelines Sections 15380 and 15125. Special-status species may also include species considered sufficiently rare by the scientific community.

Appendix D contains a list of the potential special-status species for Orange County from the California Natural Diversity Database. It is likely that a few of these species are found in the Allen-McColloch Pipeline study area. For example, California black walnut (*Juglans californica*), coastal cactus wren (*Campylorhynchus brunneicapillus couesi*), and coastal California gnatcatcher (*Poliophtila californica californica*) are known to occur at the Diemer Plant (Metropolitan 2015). Special-status

species may also exist in open space areas in Orange, Tustin, Irvine, Lake Forest, and Mission Viejo. However, most of the species on this list would have low potential to occur and are not expected due to the lack of suitable habitat or other factors.

Riparian Habitat and Other Sensitive Natural Communities

A riparian area consists of the transitional habitat between terrestrial and aquatic ecosystems. Specifically, riparian areas are the vegetated areas between a seasonal riverine feature and the outer drip line of the adjacent vegetation. Riparian vegetation supports a unique set of physical and biological processes, including temperature regulation and wildlife habitat, and provides valuable aquatic food web services (inputs for nutrient cycling and food availability) to adjacent aquatic ecosystems. Riparian areas can be wetlands or nonwetland areas.

Special-status plant communities (also referred to as sensitive natural communities) are plant communities that are of limited distribution statewide or within a county or region, and that are often vulnerable to the environmental impacts of projects.

The Allen-McColloch Pipeline crosses under the Santa Ana River, Santiago Creek, Borrego Canyon Wash, Serrano Creek, Aliso Creek, and smaller unnamed washes (see Figure 4.4-1). It also passes near Peters Canyon Reservoir. Most of these drainages have soft bottoms at the point where the pipeline crosses under them, though riparian vegetation is very limited because the channels are managed for flood control and groundwater recharge. Other sensitive natural communities are known to exist within the Allen-McColloch Pipeline study area. For example, there are areas of coastal sage scrub, southern cactus scrub, California walnut woodland, mulefat scrub, and southern willow scrub known to occur at the Diemer Plant property (Metropolitan 2015). These and other sensitive natural communities may also occur elsewhere in the Allen-McColloch Pipeline study area, especially where the pipeline crosses under large areas of open space, south and east of SR-261.

Wetlands

Wetlands and other waters are regulated by the federal government (U.S. Army Corps of Engineers) and the State of California (State Water Resources Control Board and California Department of Fish and Wildlife [CDFW]).

The federal Clean Water Act (CWA) (33 U.S.C. § 1251 et seq.) defines *waters of the U.S.* as follows: (1) all waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce; (4) all impoundments of waters otherwise defined as waters of the U.S.; (5) tributaries to the foregoing types of waters; and (6) wetlands adjacent to the foregoing waters (33 C.F.R. § 328.3(a)). Wetlands are a sub-classification of waters of the U.S. The term *other waters of the U.S.* is used to describe waters of the U.S. exclusive of wetlands.

According to the *Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008), three criteria must be satisfied to classify an area as a jurisdictional wetland. These criteria are: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to

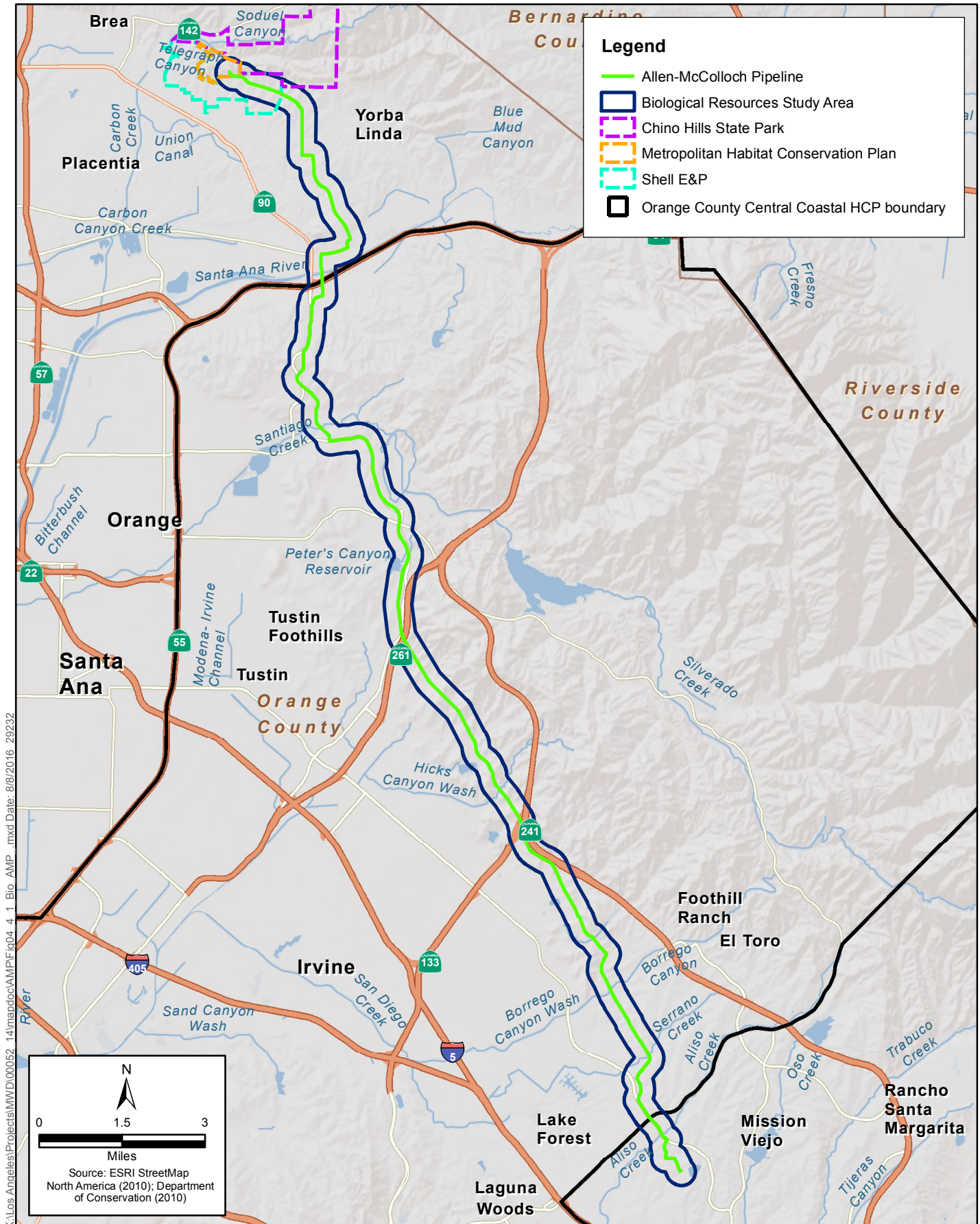


Figure 4.4-1
Allen-McColloch Pipeline Biological Resources
Metropolitan PCCP Program

develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

Waters of the state are broadly defined by the Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13050(e)) to mean any surface water or groundwater, including saline waters within the boundaries of the state. Under this definition, isolated wetlands that may not be subject to regulation under federal law are considered waters of the state and regulated accordingly.

Wetlands and other waters occur along the alignment of the Allen-McColloch Pipeline, particularly where it crosses under the Santa Ana River, Santiago Creek, Borrego Canyon Wash, Serrano Creek, Aliso Creek, and smaller unnamed washes and at the adjacent Peters Canyon Reservoir (see Figure 4.4-1). Each of these channels and the reservoir are blue-line streams. Other wetlands may also occur in the Allen-McColloch Pipeline study area, especially in the undeveloped areas.

Wildlife Movement

Wildlife movement corridors are areas that are used by wildlife for movement on varying scales (e.g., daily foraging, seasonal migration, dispersal) and include areas that have been modeled for specific species based on different physical and biological parameters. Habitat linkages are areas of land used for a variety of purposes that potentially serve as a corridor for movement or migration of wildlife. Habitat linkages aid in the dispersal and distribution of wildlife and are crucial for maintaining healthy populations of multiple species. For the purposes of this section, the term *habitat linkage* is used synonymously with *wildlife movement corridor*.

Wildlife movement corridors are likely to occur at many locations along the Allen-McColloch Pipeline due to its route along the urban edges in Orange County. Wildlife movement often occurs along streams and channels. Wildlife movement and dispersal corridors may exist anywhere the Allen-McColloch Pipeline is located in open space areas, such as golf courses and in undeveloped areas.

Habitat Conservation Plans/Natural Community Conservation Plans

Portions of the Allen-McColloch Pipeline study area are within the Shell E&P and Metropolitan Habitat Conservation Plan (HCP), covering areas on and near the Diemer Plant, and the Central and Coastal Natural Community Conservation Plan (NCCP)/HCP covering areas near the southeastern portion of the Allen-McColloch Pipeline study area (see Figure 4.4-1). Metropolitan is a participant in both these HCPs/NCCPs.

4.4.2.2 Calabasas Feeder

The Calabasas Feeder is in street rights-of-way through developed areas for its entire length, with the exception of a small, isolated area in Hidden Hills where the alignment crosses under and adjacent to a commercial nursery/growing yard.

Special-status Species

Appendix D contains a list of the potential special-status species for Los Angeles County from the California Natural Diversity Database. It is unlikely that any of these species would be found in the Calabasas Feeder study area due to the high level of development throughout the study area.

Riparian Habitat and Other Sensitive Natural Communities

The Calabasas Feeder crosses under Santa Susana Creek, Chatsworth Creek, Bell Creek, and Calabasas Creek. All of these creeks are within concrete channels and there is no riparian habitat associated with these creeks in the study area. No other riparian habitat or other sensitive natural communities are known to exist within the Calabasas Feeder study area (see Figure 4.4-2).

Wetlands

Waters of the U.S./state occur along the alignment of the Calabasas Feeder where the alignment crosses under Santa Susana Creek, Chatsworth Creek, Bell Creek, and Calabasas Creek. However, because these are concrete-lined channels in the study area, there is no possibility that they include wetlands. It is unlikely that other wetlands occur in the Calabasas Feeder study area due to the high level of development.

Wildlife Movement

Wildlife movement corridors are not likely to occur within the Calabasas Feeder study area due to the high level of development.

Habitat Conservation Plans/Natural Community Conservation Plans

There are no HCPs or NCCPs applicable to the Calabasas Feeder study area.

4.4.2.3 Rialto Pipeline

The Rialto Pipeline alignment travels near the base of the San Bernardino Mountains, crossing under many creeks and washes that drain from these mountains. Much of the alignment is near the edge of the expanding urban environment.

The Rialto Pipeline begins in the Devils Canyon area, where it crosses under the edge of the Devils Canyon Percolation Basins. It passes under developed areas before crossing Cable Creek, Cajon Wash, and Lytle Creek, which are natural soft bottom in the Rialto Pipeline study area (see Figure 4.4-3). The alignment then runs under developed areas before crossing under East Etiwanda Creek, Day Creek, and Deer Creek. East Etiwanda Creek is concrete lined in the study area, but Day Creek and Deer Creek are partially natural soft bottom (and partially concrete lined). The alignment then continues under developed areas until it crosses under Cucamonga Creek and San Antonio Creek, which are both concrete lined in the study area. The Rialto Pipeline is again under developed areas until it crosses under Marshall Creek and San Dimas Wash, both of which are natural soft bottom. Near the western end of the Rialto Pipeline, the alignment is under or adjacent to undeveloped foothill areas and golf courses, such as along Webb Canyon Road and San Dimas Canyon Road.

Special-status Species

Appendix D contains a list of the potential special-status species for San Bernardino County and Los Angeles County from the California Natural Diversity Database. It is possible that a few of these species are found in the Rialto Pipeline study area, mainly in the undeveloped areas at the edges of the development and where the alignment crosses creeks and washes. For example, the following species are known to occur within the proposed North Fontana Multi-species Habitat Conservation Plan (MSHCP) (City of Fontana 2004) (see Figure 4.4-3):

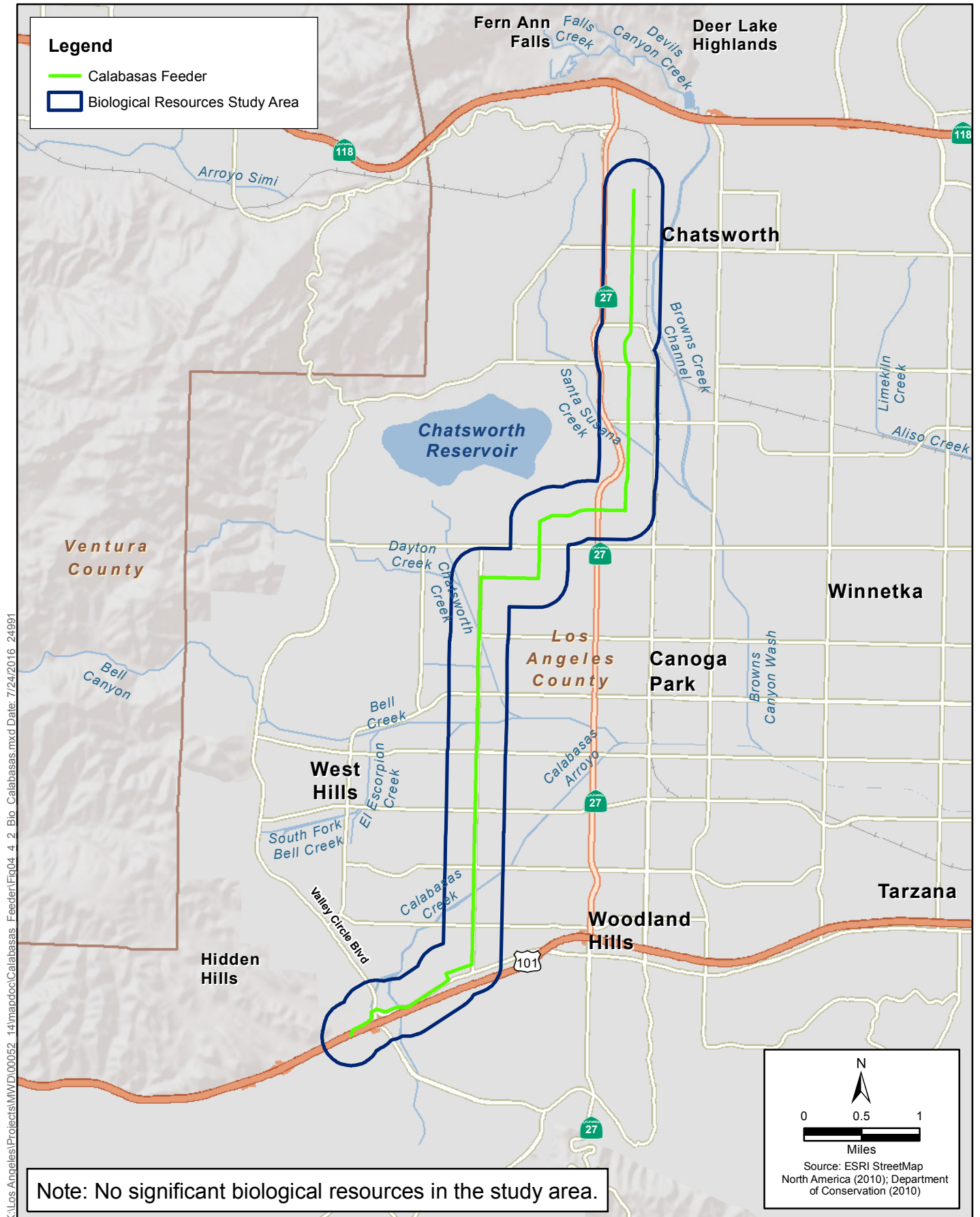


Figure 4.4-2
Calabasas Feeder Biological Resources
Metropolitan PCCP Program

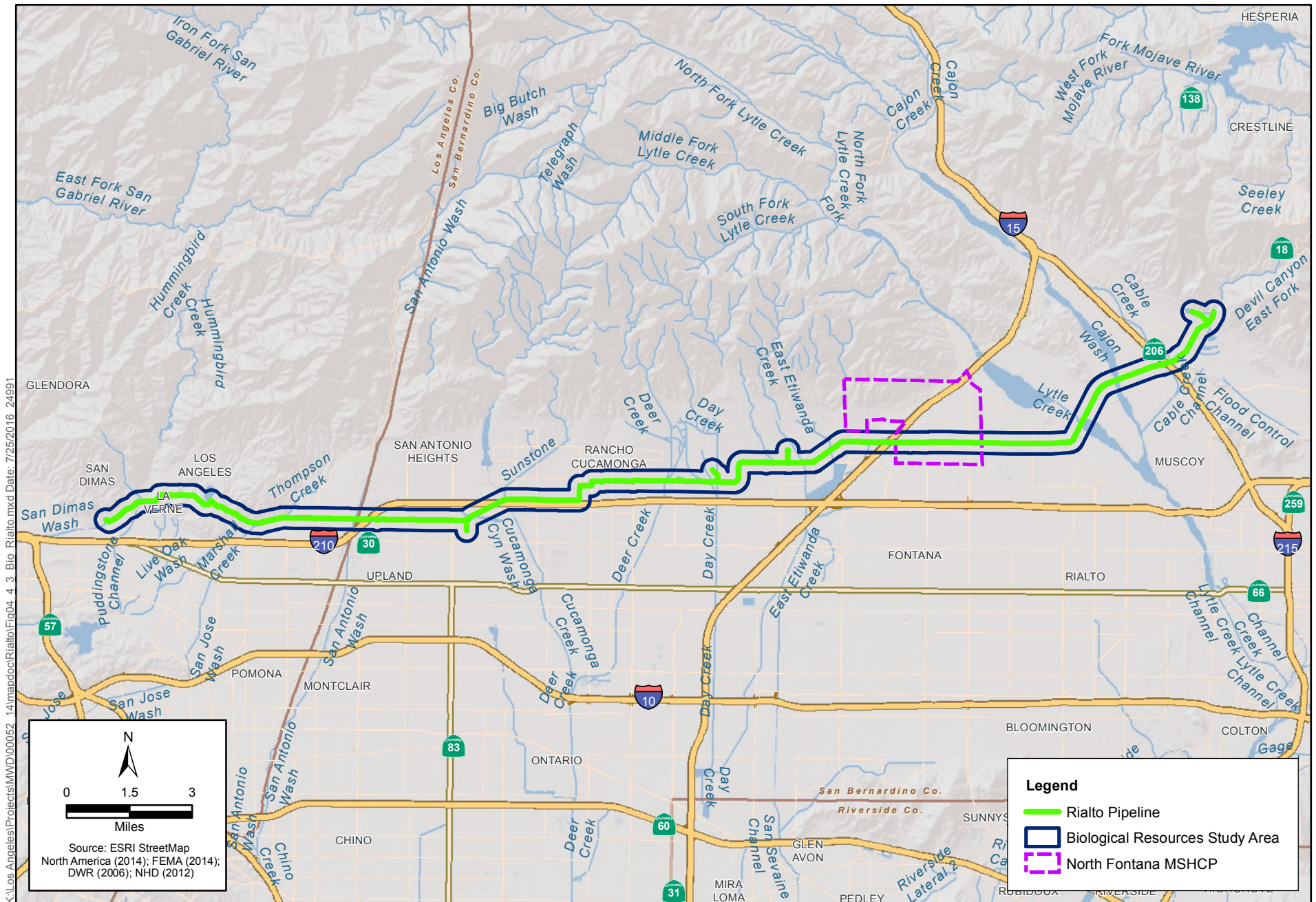


Figure 4.4-3
Rialto Pipeline Biological Resources
Metropolitan PCCP Program

- Slender-horned spineflower (*Dodecahema leptoceras*)
- Plummer's mariposa lily (*Calochortus plummerae*)
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*)
- Lemon lily (*Lilium parryi*)
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*)
- Coastal California gnatcatcher (*Polioptila californica californica*)
- Golden eagle (*Aquila chrysaetos*)
- Cooper's hawk (*Accipiter cooperii*)
- Northern harrier (*Circus cyaneus*)
- Burrowing owl (*Athene cunicularia hypoleuca*)
- Loggerhead shrike (*Lanius ludovicianus*)
- San Diego horned lizard (*Phrynosoma coronatum blainvillii*)
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)

Riparian Habitat and Other Sensitive Natural Communities

The Rialto Pipeline crosses under several soft-bottomed (or partially soft-bottomed) creeks and washes, including Cable Creek, Cajon Wash, Lytle Creek, Day Creek, Deer Creek, Marshall Creek, and San Dimas Wash. Each of these has the potential to have riparian habitat along their channels. The Rialto Pipeline also crosses channels that are concrete lined, including East Etiwanda Creek, Cucamonga Creek, and San Antonio Creek. These channels do not host riparian habitat in the study area. Other sensitive natural communities may also exist in the Rialto Pipeline study area, especially in the areas that have not been subject to development. For example, Riversidian alluvial fan scrub and Riversidian sage scrub are known to occur in several areas in the study area, such as the northern portion of Fontana (City of Fontana 2004). These and other sensitive natural communities may also occur elsewhere in the Rialto Pipeline study area, especially where the pipeline crosses under large areas of open space, south and east of SR-261.

Wetlands

Wetlands and other waters occur along the alignment of the Rialto Pipeline, particularly where it crosses under Cable Creek, Cajon Wash, Lytle Creek, Day Creek, Deer Creek, Marshall Creek, and San Dimas Wash, all of which are partially or fully natural, soft-bottom channels through the study area. Other wetlands may also occur in the Rialto Pipeline study area, especially in the undeveloped areas.

Wildlife Movement

Wildlife movement corridors are likely to occur at many locations along the Rialto Pipeline due to its route along the urban edges in San Bernardino and Los Angeles counties. Wildlife movement often occurs along streams and channels. Wildlife movement and dispersal corridors may exist anywhere the Rialto Pipeline is located in open space areas, such as golf courses and in undeveloped areas.

Habitat Conservation Plans/Natural Community Conservation Plans

Portions of the Rialto Pipeline study area are within the proposed North Fontana MSHCP. The City of Fontana has prepared and submitted an MSHCP. While the MSHCP is being processed, the City of Fontana has issued the North Fontana Interim MSHCP Policy that is consistent with the intent and direction of the proposed MSHCP (City of Fontana 2004). The Rialto Pipeline travels through portions of the lands covered by the interim policy and the proposed MSHCP between approximately Sierra Avenue and Cherry Avenue in the city of Fontana. Metropolitan is not a participant in the MSHCP.

4.4.2.4 Second Lower Feeder

The Second Lower Feeder is in mostly urban areas, in street rights-of-way and other developed areas. It does, however, cross short distances of undeveloped or natural areas especially near the northeastern and southwestern termini, as described below.

The Second Lower Feeder begins on the southern side of the Diemer Plant and travels westward and southward through a golf course before entering a developed area in Yorba Linda and other cities in Orange and Los Angeles counties. In Anaheim, it crosses under the Anaheim Union Channel. This channel is concrete lined in the Second Lower Feeder study area. Also in Anaheim, it crosses under Carbon Creek twice, which is riprap lined or riprap and concrete lined in the study area. Near the Los Angeles County line, the pipeline crosses under the concrete-lined Coyote Creek. In Los Angeles County, the alignment crosses under Artesia-Norwalk Drain, San Gabriel River, an unnamed drainage, Los Angeles River, and Dominguez Channel Estuary, all of which are concrete-lined channels in the study area.

Just east of its San Gabriel River crossing, the Second Lower Feeder alignment passes adjacent to and through a large urban park, El Dorado Regional Park, a landscape with mostly nonnative plants. In Long Beach, the alignment is adjacent to a small urban park and the Skylinks Golf Course. Just east of the Los Angeles River, the Second Lower Feeder passes near and under a small urban park. Near its southwestern terminus, the pipeline is adjacent to golf courses and open space, including a small nature park in Rolling Hills Estates.

Special-status Species

Appendix D contains a list of the potential special-status species for Orange and Los Angeles counties from the California Natural Diversity Database. It is likely that a few of these species are found in the Second Lower Feeder study area. For example, California black walnut, coastal cactus wren, and coastal California gnatcatcher are known to occur at the Diemer Plant (Metropolitan 2015) (see Figure 4.4-4). However, most of the species on this list would have low potential to occur and are not expected due to the lack of suitable habitat or other factors.

Riparian Habitat and Other Sensitive Natural Communities

The Second Lower Feeder crosses under creeks, rivers, and channels. All of these water features are within concrete and/or riprap channels and there is no riparian habitat associated with the water features in the study area. Other sensitive natural communities are known to exist within the Second Lower Feeder study area. For example, there are areas of coastal sage scrub, southern

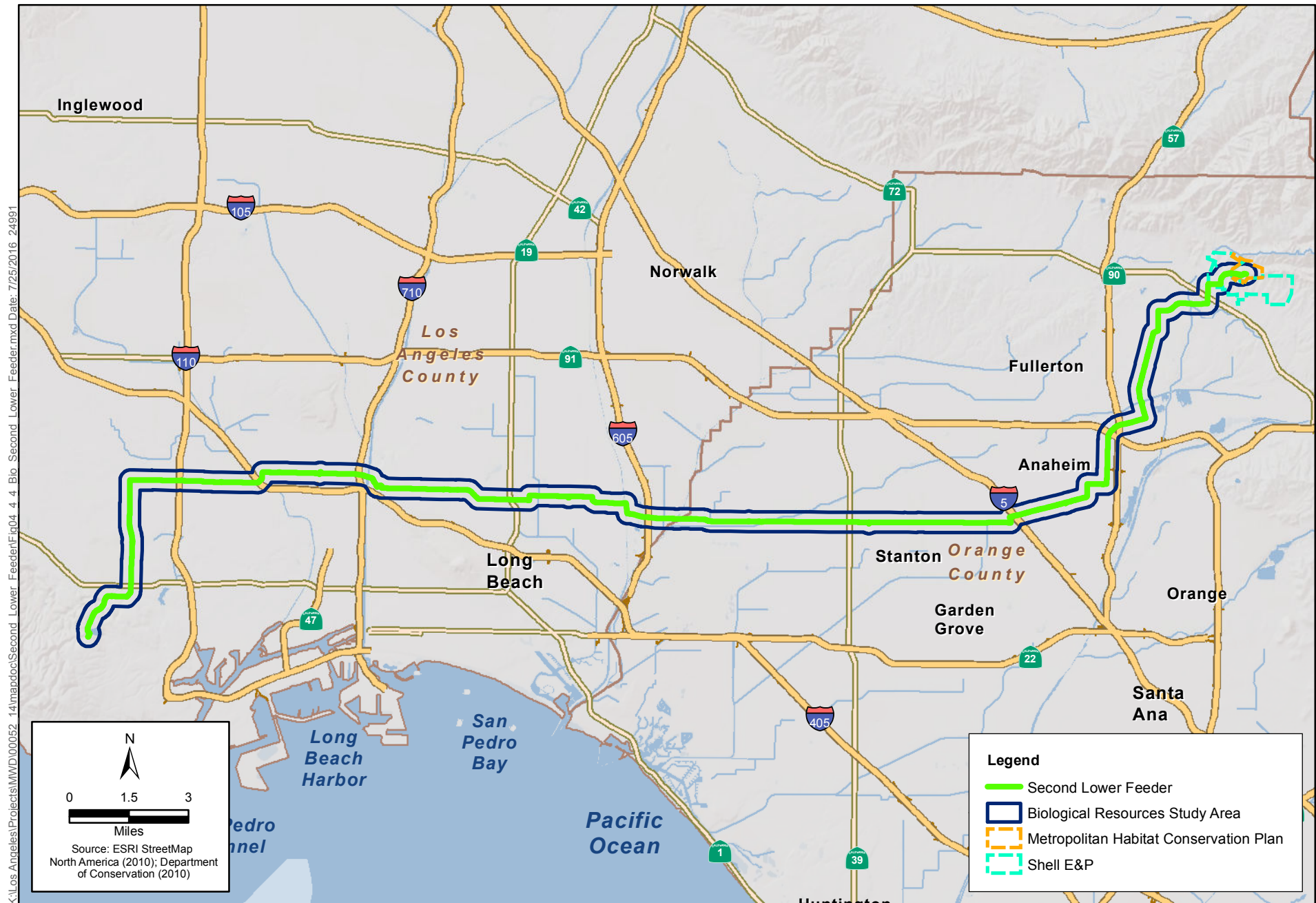


Figure 4.4-4
Second Lower Feeder Biological Resources
Metropolitan PCCP Program

cactus scrub, California walnut woodland, mulefat scrub, and southern willow scrub known to occur at the Diemer Plant property (Metropolitan 2015).

Wetlands

Waters of the U.S./state occur along the alignment of the Second Lower Feeder where it crosses under several creeks, rivers, and other channels. However, because these are concrete-lined and/or riprap-lined channels in the study area, there is no possibility that they include wetlands. It is possible that isolated wetlands may occur in the limited open spaces in the study area.

Wildlife Movement

The potential for wildlife movement corridors to occur in the Second Lower Feeder study area is limited. Only at the northeastern end, on the Diemer Plant property and the adjacent golf course, and near the southwestern end where the alignment is adjacent to somewhat connected open spaces, is there much opportunity for wildlife movement or dispersion. Elsewhere, the small amounts of open space are too isolated for wildlife movement. Creeks and rivers within this corridor are all concrete and/or riprap lined, making them ineffective for wildlife movement.

Habitat Conservation Plans/Natural Community Conservation Plans

Portions of the Second Lower Feeder study area are within the Shell E&P and Metropolitan HCP, covering areas on and near the Diemer Plant. Metropolitan is a participant in this HCP.

4.4.2.5 Sepulveda Feeder

The majority of the study area for the Sepulveda Feeder is in urbanized areas with few biological resources. However, there are exceptions, as discussed below.

Near its northern end, the Sepulveda Feeder passes under portions of the Knollwood Golf Course. It also passes by a sod farm, just north of State Route 118 (SR-118). Farther south, after crossing under Interstate 405 (I-405), the Sepulveda Feeder crosses under a portion of the Westridge-Canyonback Wilderness Park (see Figure 4.4-5). After crossing I-405 again, the alignment is adjacent to Los Angeles National Cemetery. In the city of Hawthorne, the Sepulveda Feeder runs under Van Ness Avenue, adjacent to the Chester Washington Golf Course.

The Sepulveda Feeder crosses the Los Angeles River and the Dominguez Channel. Both waterways are concrete lined in the Sepulveda Feeder study area. Another waterway in the study area, Bull Creek, is channelized underground in the study area.

Special-status Species

Appendix D contains a list of the potential special-status species for Los Angeles County from the California Natural Diversity Database. It is unlikely that any of these species would be found through most of the alignment in the Sepulveda Feeder study area due to the high level of development throughout the study area. However, the large Westridge-Canyonback Wilderness Park in the middle of the alignment has over 1,500 acres in which special-status species could occur.

Riparian Habitat and Other Sensitive Natural Communities

Except in the large Westridge-Canyonback Wilderness Park in the middle of the alignment, there is little opportunity for sensitive natural communities to occur in the Sepulveda Feeder study area. The remainder of the alignment is urbanized, with the alignment being usually in street rights-of-way. The only other location where the alignment is not in street rights-of-way is in the Knollwood Golf Course, which is a heavily managed nonnative landscape, with little opportunity for riparian or sensitive natural communities.

Wetlands

Except in the Knollwood Golf Course near the northern end of the Sepulveda Feeder and the large Westridge-Canyonback Wilderness Park in the middle of the alignment, wetlands are not likely to occur in the Sepulveda Feeder study area. The alignment does cross waters of the U.S./state (Bull Creek, Los Angeles River, and Dominguez Channel), but there are no wetlands associated with these concrete channels.

Wildlife Movement

Except in the large Westridge-Canyonback Wilderness Park and possibly the Knollwood Golf Course, there is little opportunity for wildlife movement to occur in the Sepulveda Feeder study area. However, these two locations may provide valuable wildlife movement and dispersal corridors in the otherwise urbanized environment.

4.4.3 Regulatory Framework

This section describes the plans, policies, and regulations related to biological resources that are applicable to the proposed program.

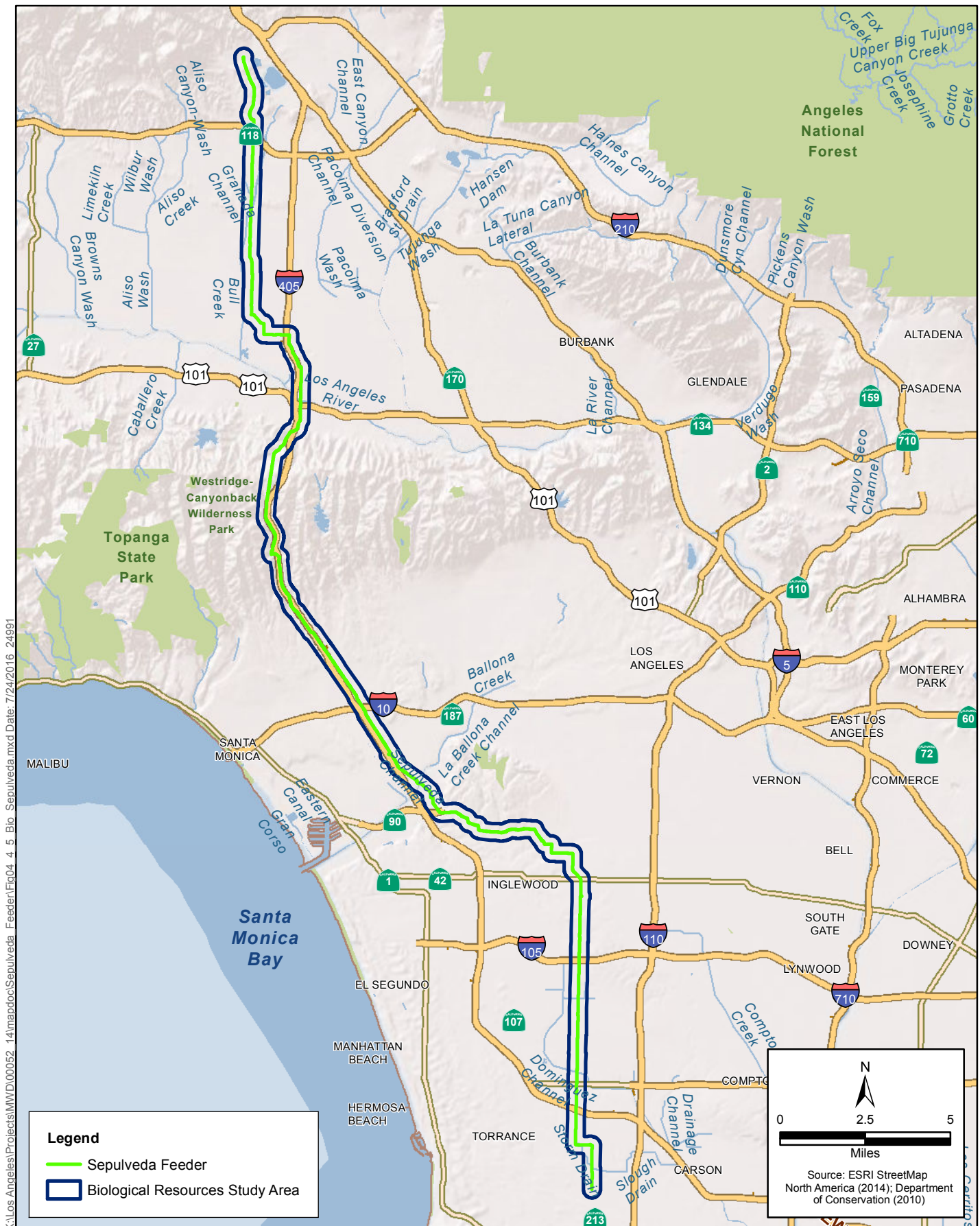
4.4.3.1 Federal

Federal Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.)

The FESA of 1973 provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The FESA regulates federally listed endangered or threatened wildlife and plant species, proposed listed species, and critical habitat. A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future.

Clean Water Act (33 U.S.C. § 1251 et seq.)

The federal CWA of 1977, which amended the federal Water Pollution Control Act of 1972, establishes the basic structure for regulating discharges of pollutants into waters of the U.S. (not including groundwater). The CWA delegates authority to the U.S. Environmental Protection Agency to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System permit is obtained and implemented within compliance. In addition, the CWA



**Figure 4.4-5
Sepulveda Feeder Biological Resources
Metropolitan PCCP Program**

requires the states to adopt water quality standards for receiving water bodies and to have those standards approved by the U.S. Environmental Protection Agency. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses.

Migratory Bird Treaty Act (16 U.S.C. §§ 703–712)

The Migratory Bird Treaty Act (MBTA) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The regulatory definition of “migratory bird” is broad and includes any mutation or hybrid of a listed species, as well as any part, egg, or nest of such bird. Migratory birds are not necessarily federally listed as endangered or threatened birds under the FESA. The MBTA makes it unlawful “by any means or in any manner, to pursue, hunt, take, capture, [or] kill” any migratory bird or attempt such actions, except as permitted by regulation.

4.4.3.2 State

California Fish and Game Code

Several sections of the California Fish and Game Code are applicable to the proposed program, as described below.

California Endangered Species Act (Cal. Fish and Game Code, §§ 2050–2085)

The CESA is similar to the main provisions of the FESA and is administered by CDFW. Under the CESA, the term *endangered species* is defined as a species of plant, fish, or wildlife that is “in serious danger of becoming extinct throughout all, or a significant portion of, its range,” and is limited to species or subspecies native to California. The CESA prohibits the take (hunt, pursuit, catch, capture, kill, or attempt to hunt, pursue, catch, capture, or kill) of listed species except as otherwise provided in state law. Unlike its federal counterpart, the CESA also applies the take prohibitions to species petitioned for listing (state candidates).

Fully Protected Species Act (Cal. Fish and Game Code, §§ 3511, 4700, 5050, and 5515)

The classification of “fully protected” was the state’s initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles, and birds. Fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Bird Protections (Cal. Fish and Game Code, § 3503, 3503.5, and 3513)

California Fish and Game Code Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy their nests or eggs. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the federal MBTA or any part of such migratory nongame bird.

Lake and Streambed Alteration (Cal. Fish and Game Code, § 1600 et seq.)

Under California Fish and Game Code Section 1602, CDFW has authority to regulate work that will substantially divert or obstruct the natural flow of or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake. CDFW also has authority to regulate work that will deposit or dispose of debris, water, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to any person, state or local governmental agency, or public utility. CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of definable bed and banks and existing fish or wildlife resources.

California Native Plant Protection Act (Cal. Fish and Game Code, §§ 1900–1913)

The Native Plant Protection Act of 1977 gave the California Fish and Game Commission the power to designate native plants as “endangered” or “rare” and to protect endangered and rare plants from take. The CESA expanded on the original Native Plant Protection Act and enhanced legal protection for plants, but the Native Plant Protection Act remains part of the California Fish and Game Code. To align with federal regulations, the CESA created the categories of “threatened” and “endangered” species. It converted all “rare” animals to threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered.

4.4.3.3 Local

Many cities and counties in the biological resources study area have land codes requiring protection of trees and other vegetation in their jurisdictions (Appendix X). Most call for tree removal permits and replacement.

4.4.4 Thresholds and Methodology

4.4.4.1 Thresholds of Significance

Table 4.4-2 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to biological resources. It indicates which impacts must be analyzed in the PEIR for the proposed program.

Table 4.4-1. CEQA Thresholds for Biological Resources

Threshold	
<i>Would the proposed program:</i>	
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 Wildlife or U.S. Fish and Wildlife Service?
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Threshold	
<i>Would the proposed program:</i>	
c.	Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal areas, etc.), through direct removal, filling, hydrological interruption, or other means?
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites?
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

4.4.4.2 Methodology

Special-status Species

Potential for special-status species and habitat for special-status species to occur is identified in Section 4.4.2. Potential impacts on special-status species from rehabilitations projects in the proposed program are identified in this analysis. Mitigation measures are included as necessary to reduce impacts and/or require further analysis when specific project locations and activities are known.

Riparian Habitat and Other Sensitive Natural Communities

Potential for riparian habitat and other sensitive natural communities to occur is identified in Section 4.4.2. Potential impacts on these habitats and communities from rehabilitation projects in the proposed program are identified in this analysis. Mitigation measures are included as necessary to reduce impacts and/or require further analysis when specific project locations and activities are known.

Wetlands

Potential for wetlands to occur is identified in Section 4.4.2. Potential impacts on wetlands from rehabilitation projects in the proposed program are identified in this analysis. Mitigation measures are included as necessary to reduce impacts and/or require further analysis when specific project locations and activities are known.

Wildlife Movement

Potential for wildlife movement corridors to occur within or be crossed by the study area is identified in Section 4.4.2. This biological analysis addresses whether rehabilitation projects in the proposed program could result in impacts on wildlife movement in these corridors or elsewhere. Mitigation measures are included as necessary to reduce impacts and/or require further analysis when specific project locations and activities are known.

Local Policies Protecting Biological Resources

The biological analysis addresses the proposed program's consistency with local policies, in particular local tree ordinances, and includes any mitigation required to reduce impacts and/or require further analysis when specific project locations and activities are known.

It should be noted that California Government Code Section 53091 exempts Metropolitan, as a regional public water purveyor and utility, from local zoning and building ordinances. This exemption applies to the pipeline infrastructure included in the proposed program because they are water transmission pipelines and a direct component of Metropolitan's treatment, storage, and transmission system. Despite this exemption from local land use planning jurisdiction, for purposes of full disclosure of potential impacts on the environment, this PEIR evaluates proposed program compatibility with relevant general plan policies of the cities along the pipeline alignments.

HCPs and NCCPs

HCPs or NCCPs potentially applicable to the study area are identified in Section 4.4.2. Impacts that may occur during rehabilitation projects under the proposed program are identified in this analysis. Mitigation measures are included as necessary to reduce impacts and/or require further analysis when specific project locations and activities are known.

4.4.5 Impacts Analysis

4.4.5.1 Program Analysis

Threshold BIO-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 Wildlife or U.S. Fish and Wildlife Service

Special-status species have the potential to occur in certain locations in the study areas for most of the pipelines. The areas most likely to include special-status species are listed below, but there is also potential for special-status species to occur in other areas along the pipelines.

- **Allen-McColloch Pipeline:** Diemer Plant and Black Hills Golf Course, especially within covered areas of the Shell E&P and Metropolitan HCP; open space areas in Orange, Tustin, Irvine, Lake Forest, and Mission Viejo, especially within covered areas of the Central Coastal NCCP/HCP.
- **Calabasas Feeder:** low potential throughout.
- **Rialto Pipeline:** Within undeveloped areas throughout, especially in the North Fontana MSHCP area.
- **Second Lower Feeder:** Diemer Plant and Black Hills Golf Course, especially within covered areas of the Shell E&P and Metropolitan HCP; open space areas near the southwestern terminus of the Second Lower Feeder.
- **Sepulveda Feeder:** Knollwood Golf Course; Westridge-Canyonback Wilderness Park.

Various rehabilitation activities could affect special-status species or their habitats. Vegetation clearing and excavation could remove habitat or individuals. Excavation, ground clearing, equipment and materials storage, access routes, and other activities could result in impacts on runoff and/or water quality, potentially affecting habitat. Excavation, ground clearing, and access routes could result in air quality impacts (dust, exhaust) that could affect adjacent individuals. Equipment or construction-related traffic could introduce hazardous materials into habitats. Equipment and construction-related traffic could result in noise impacts affecting noise-sensitive species. Equipment and construction personnel could also introduce harmful, noxious, and/or invasive species that could damage habitats (such as by tracking in weed seeds). Any of these effects could result in significant impacts on special-status species, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-1 may reduce these impacts, but potentially not to less-than-significant levels.

Even in fully developed areas, rehabilitation activities have the potential to result in impacts on protected species. Migratory birds, including most birds that nest in the study area, are protected by the federal MBTA, which forbids most forms of harm to birds, including to their active nests. In addition, California Fish and Game Code Section 3503 makes it unlawful to destroy nests or eggs of any bird. Where vegetation, and especially trees, is removed as part of construction, there is the potential for violations under the MBTA and Section 3503 of the California Fish and Game Code, which would be a significant impact, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of MM BIO-2 may reduce this impact, but potentially not to a less-than-significant level.

Mitigation Measures

MM BIO-1 Take of Special-Status Species.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas) and that contain special-status species, a qualified biologist will visit the site ~~to determine if any special-status species have the potential to occur on the site.~~ If the biologist determines that special-status species may occur, preconstruction surveys for special-status plants and/or wildlife will be completed prior to any construction and consultation with the appropriate resource agency will occur (U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife), if necessary, to determine measures to address impacts such as avoidance, minimization, restoration, or compensation.

MM BIO-2 Impacts on Nesting Birds.

For any projects within the program that require vegetation removal during the nesting season for sensitive species protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3513, including street trees and other landscaping, a qualified biologist will inspect the vegetation to be removed no more than 10 days prior to tree/vegetation removal to determine whether nesting birds are present. If a nest is found, the biologist will determine the site-specific measures necessary to avoid disturbing the nest until nesting activity has ceased, ~~including avoidance of the nest and establishment of an adequate buffer. Construction within the buffer area will not occur until the biologist has verified that nesting activity has ceased.~~

Nothing in this mitigation measure precludes the use of deterrent measures to prevent bird nesting.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. Implementation of MM BIO-1 and MM BIO-2 may reduce any potential significant impacts; however, residual impacts may still be significant and unavoidable. Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.

Threshold BIO-B: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Riparian habitats and other sensitive natural communities are limited in the study area for the proposed program. The areas most likely to include riparian habitats or other sensitive natural communities are listed below, but there is also the potential for isolated areas of riparian habitat to occur in other areas along the pipelines.

- **Allen-McColloch Pipeline:** Diemer Plant and Black Hills Golf Course, especially within covered areas of the Shell E&P and Metropolitan HCP; open space areas in Orange, Tustin, Irvine, Lake Forest, and Mission Viejo, especially within covered areas of the Central Coastal NCCP/HCP.
- **Calabajas Feeder:** low potential throughout.
- **Rialto Pipeline:** Within undeveloped areas throughout.
- **Second Lower Feeder:** Diemer Plant and Black Hills Golf Course, especially within covered areas of the Shell E&P and Metropolitan HCP; open space areas near the southwestern terminus of the Second Lower Feeder.
- **Sepulveda Feeder:** Westridge-Canyonback Wilderness Park.

Various rehabilitation activities could affect riparian habitats and other sensitive natural communities. Vegetation clearing and excavation could remove habitat. Excavation, ground clearing, equipment and materials storage, access routes, and other activities could result in impacts on runoff and/or water quality, potentially affecting habitat. Excavation, ground clearing, and access routes could result in air quality impacts (dust, exhaust) that could affect adjacent habitat. Equipment or construction-related traffic could introduce hazardous materials into habitats. Equipment and construction personnel could also introduce harmful, noxious, and/or invasive species that could damage habitats (such as by tracking in weed seeds). Any of these effects could result in significant impacts on riparian habitats or sensitive natural communities, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measures MM BIO-3 and MM BIO-4 may reduce these impacts, but potentially not to less-than-significant levels.

Mitigation Measures

MM BIO-3 Adverse Impacts on Riparian Habitat.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) which contain riparian vegetation, a qualified biologist will visit the site to conduct pre-construction surveys ~~determine if any riparian habitat is present at the site~~. If the biologist determines that riparian vegetation is present, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken, including applying for appropriate regulatory permits, as required ~~to protect the habitat, as appropriate~~.

MM BIO-4 Adverse Impacts on Sensitive Natural Communities.

Removal of or adverse impacts on sensitive natural communities will be minimized for rehabilitation projects in the program, except in accordance with adopted HCPs/NCCPs to which Metropolitan is a party for covered areas and covered activities. For such covered activities, Metropolitan will coordinate with the appropriate resource agencies, and Metropolitan's contractors will adhere to all requirements in the applicable plan. For any activities not covered by an adopted HCP/NCCP, the following shall apply:

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) and that contain sensitive natural communities, a qualified biologist will conduct pre-construction surveys ~~visit the site to determine if any sensitive natural communities may be present at the site~~. If the biologist determines that such communities may be present, preconstruction surveys ~~for sensitive natural communities will be required~~ prior to any construction. These surveys will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. If sensitive natural communities are located during the surveys, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken including applying for appropriate regulatory permits, as required ~~to protect the habitat~~.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. Implementation of MM BIO-3 and MM BIO-4 may reduce any potential significant impacts; however, residual impacts may still be significant and unavoidable. Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.

Threshold BIO-C: Have a Substantial Adverse Effect on Federally Protected Wetlands, as Defined by Section 404 of the Clean Water Act, through Direct Removal, Filling, Hydrological Interruption, or Other Means

Wetlands are limited in the study area for the proposed program. The areas most likely to include wetlands are listed below, but there is also the potential for wetlands to occur in other areas along the pipelines.

- **Allen-McColloch Pipeline:** Diemer Plant and Black Hills Golf Course; open space areas in Orange, Tustin, Irvine, Lake Forest, and Mission Viejo.
- **Calabasas Feeder:** low potential throughout.
- **Rialto Pipeline:** Within undeveloped areas throughout.
- **Second Lower Feeder:** Diemer Plant and Black Hills Golf Course; open space areas near the southwestern terminus of the pipeline.
- **Sepulveda Feeder:** Knollwood Golf Course; Westridge-Canyonback Wilderness Park.

Various rehabilitation activities could affect wetlands if present near work areas. Excavation or ground clearing could remove wetlands or place fill in the wetlands, either temporarily or permanently. Excavation, ground clearing, equipment and materials storage, access routes, and other activities could result in impacts on runoff and/or water quality, potentially affecting wetlands. Equipment or construction-related traffic could introduce hazardous materials into wetlands. Equipment and construction personnel could also introduce harmful, noxious, and/or invasive species that could damage wetlands (such as by tracking in weed seeds). Any of these effects could result in significant impacts on wetlands, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-5 may reduce these impacts, but potentially not to less-than-significant levels.

Mitigation Measures

MM BIO-5 Adverse Impacts on Wetlands.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (including large landscaped areas, parks, and golf courses), which contain wetlands, a qualified biologist will visit the site to conduct pre-construction surveys ~~determine if wetlands may be present at the site~~. If the biologist determines that wetlands may be present, preconstruction wetlands jurisdictional delineations will be ~~required~~ performed prior to any construction. These delineations will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. Any jurisdictional wetlands located during the delineations will be mapped and flagged for avoidance or other measures may be taken, including applying for appropriate regulatory permits, as required ~~or other measures will be taken to protect the habitat, as necessary~~.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. Implementation of MM BIO-5 may reduce any potential significant impacts; however, residual impacts may still be significant and unavoidable. Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.

Threshold BIO-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

Wildlife movement corridors and wildlife dispersal routes have the potential to occur in certain locations in the study areas for most of the pipelines. The areas most likely to include wildlife movement corridors are listed below, but there is also potential for wildlife movement to occur in other areas along the pipelines.

- **Allen-McColloch Pipeline:** Diemer Plant and Black Hills Golf Course; along soft-bottom waterways (but not those lined with concrete); open space areas in Orange, Tustin, Irvine, Lake Forest, and Mission Viejo.
- **Calabasas Feeder:** low potential throughout.
- **Rialto Pipeline:** Within undeveloped areas throughout; along soft-bottom waterways (but not those lined with concrete).
- **Second Lower Feeder:** Diemer Plant and Black Hills Golf Course; El Dorado Regional Park and the adjacent San Gabriel River area; Skylinks Golf Course; open space areas near the southwestern terminus of the Second Lower Feeder.
- **Sepulveda Feeder:** Knollwood Golf Course; sod farm north of SR-118; Los Angeles National Cemetery; Westridge-Canyonback Wilderness Park; Chester Washington Golf Course.

Various rehabilitation activities could affect wildlife movement and dispersal in the vicinity of construction. Vegetation clearing and excavation could remove habitat used by wildlife for safe passage. Excavation, ground clearing, equipment and materials storage, access routes, and other activities could result in impacts on runoff and/or water quality, potentially affecting habitat used for wildlife movement. Excavation, ground clearing, and access routes could result in air quality impacts (dust, exhaust) that could affect habitat used for wildlife movement. Equipment or construction-related traffic could introduce hazardous materials into habitats used for wildlife movement. Equipment and construction-related traffic could result in noise impacts affecting noise-sensitive species, causing them to avoid or divert movement through the affected area. Equipment and construction personnel could also introduce harmful, noxious, and/or invasive species that could damage habitats used for wildlife movement. Nighttime lighting for security or safety could result in impacts on nighttime wildlife movement. Any of these effects could result in significant impacts on wildlife movement, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-6 may reduce these impacts, but potentially not to less-than-significant levels.

Mitigation Measures

MM BIO-6 Impacts on Wildlife Movement.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas), a qualified biologist will visit the site to determine if any identifiable wildlife movement corridors are present at the site. If the biologist determines that such corridors are present, then wildlife movement corridors will be mapped, flagged, and avoided, or other measures will be taken to protect wildlife movement, as appropriate.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. Implementation of MM BIO-6 may reduce any potential significant impacts; however, residual impacts may still be significant and unavoidable. Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.

Threshold BIO-E: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance

Many of the cities and counties along the pipelines in the proposed program have tree preservation policies or ordinances requiring permits for removal of trees, replacement of trees, or other protection for vegetation within their jurisdictions. Rehabilitation activities would require removal of some trees and other vegetation throughout the pipelines, including street trees and other landscaping. Although the program would require contractors to restore construction areas to pre-construction conditions after rehabilitation activities are completed, in some cases this restoration may not be consistent with local tree preservation policies or ordinances, which would be a significant impact. Implementation of Mitigation Measure MM BIO-7 would reduce these impacts to less-than-significant levels.

Mitigation Measures

MM BIO-7 Conflicts with Local Policies Related to Biological Resources.

For any projects within the program that require vegetation removal, Metropolitan will determine if there are any applicable local policies related to biological resources and, if so, coordinate ~~consult~~ with the affected jurisdiction, as necessary, to determine appropriate requirements for vegetation removal and replacement. The contractor will be required to comply with any applicable requirements. Nothing in this mitigation will require the contractor to make improvements beyond the existing condition prior to construction.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM BIO-7 would reduce these impacts so that residual impacts would be less than significant.

Threshold BIO-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

Portions of the existing Allen-McColloch Pipeline and Second Lower Feeder are within the covered area for the Shell E&P and Metropolitan HCP. Metropolitan is a participant in this HCP. Portions of the existing Allen-McColloch Pipeline are in the Central and Coastal NCCP/HCP. Metropolitan is a participant in this NCCP/HCP. Portions of the Rialto Pipeline are within the proposed North Fontana MSHCP, and within the lands addressed by the North Fontana Interim MSHCP Policy. Metropolitan is not a participant in this proposed MSHCP.

Certain construction and maintenance activities are allowed under the Shell E&P and Metropolitan HCP and Central and Coastal NCCP/HCP, and would be allowed under the proposed North Fontana MSHCP (covered activities). However, the types of construction for the proposed program that would occur within the covered lands are not known at this time. Therefore, construction could potentially be inconsistent with the requirements of these plans, which would be a significant impact. Without knowing the location or type of rehabilitation activities in the covered lands, the level of impact and mitigation measures to address these impacts cannot be determined at this time. Also, it cannot be determined if impacts could be reduced to less-than-significant levels with mitigation. Therefore, impacts related to conflicts with the adopted Shell E&P and Metropolitan HCP and Central and Coastal NCCP/HCP and the proposed North Fontana MSHCP may be potentially significant and unavoidable. Additional project-specific analysis will be required for rehabilitation activities within the covered lands for these plans.

Mitigation Measures

No feasible mitigation can be identified at the program level.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. Therefore, these impacts are assumed to be significant and unavoidable. Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.

4.4.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

Impacts of projects in the proposed program related to special-status species, riparian habitats and other sensitive natural communities, wetlands, wildlife movement, and conflicts with local policies protecting biological resources would be avoided through implementation of Mitigation Measures MM BIO-1 through MM BIO-7. Therefore, the impacts of the proposed program on these resources would not represent a considerable contribution to cumulative impacts. Impacts related to conflicts with adopted HCPs and NCCPs cannot be determined at this time because the location and types of

construction are not known. Therefore, projects in the program would potentially result in impacts that would contribute significantly to cumulative impacts related to conflicts with HCPs and NCCPs. Further environmental analysis and documentation is necessary prior to construction to determine if a considerable contribution to a cumulative impact would occur.

Section 4.5

Cultural Resources

4.5.1 Introduction

This section describes the existing conditions for cultural resources, the regulatory framework associated with cultural resources, the impacts on cultural resources that would result from the proposed program, and the mitigation measures that would reduce these impacts. Under CEQA, cultural resources include archaeological sites, built environment resources, and paleontological resources. Paleontological resources are provided protection as historical resources, as discussed in State CEQA Guidelines Section 15064.5(a)(3). As noted in the Initial Study, the proposed program would have potentially significant cultural resources impacts.

4.5.2 Existing Conditions

The study area for archaeological and paleontological resources is the pipeline alignment corridors, plus 0.25 mile on either side (i.e., a half-mile-wide corridor). Figures 4.5-1 through 4.5-5 show this study area. For built environment resources (historic architecture), the study area is the pipeline alignment corridors and immediately adjacent properties.

The National Register of Historic Places (NRHP) is the official list of the historic places worthy of preservation under the National Historic Preservation Act of 1966. To be placed on the NRHP, the district, site, building, structure, or object must possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- Be associated with events that have made a significant contribution to the broad patterns of our history (criterion A); or
- Be associated with the lives of significant persons in our past (criterion B); or
- Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (criterion C); or
- Yield or be likely to yield information important in history or prehistory (criterion D).

The California Register of Historical Resources (CRHR) is the State's program to identify, evaluate, register, and protect California's historical resources. The criteria for designation are similar to the NRHP criteria, as follows:

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (criterion 1); or
- Associated with the lives of significant persons to local, California, or national history (criterion 2); or
- Embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master or possesses high artistic values (criterion 3); or

- Has yielded, or has the potential to yield, information important to the history or prehistory of the local area, California, or the nation (criterion 4).

The National Park Service is responsible for maintaining the NRHP. The California Office of Historic Preservation, an office of the California Department of Parks and Recreation, maintains the CRHR. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State's jurisdiction.

Between October 2014 and February 2015, reviews of cultural resource records housed at the California Historical Resources Information System for the PCCP Program were conducted by Metropolitan staff. The record searches took place at the South Central Coastal Information Center at California State University, Fullerton, for program pipelines in Los Angeles and Orange counties, and the San Bernardino Archaeological Information Center at the San Bernardino County Museum for program pipelines in San Bernardino County. The record searches were conducted to identify all previously conducted cultural resource survey work and any previously recorded cultural resources within 0.25 mile of each PCCP Program line and included a review of the following.

- NRHP
- CRHR
- California Points of Historical Interest
- The California Landmarks list
- Archaeological Determinations of Eligibility list
- California State Historic Resources Inventory list
- All available historic United States Geological Survey 7.5-minute and 15-minute topographic quadrangle maps

Tables in the pipeline-specific discussions below document all recorded historic-period and prehistoric archaeological sites and built environment resources that occur on or immediately adjacent to the existing pipeline.

- Paleontological resources consist of fossils of plants and animals, and paleontology is the study of life in past geologic time based on fossil evidence.
- Archaeological resources consist of the physical remains of past human activity that have been preserved below or above ground, but no longer take the form of a standing structure (e.g., a house or building). Archaeological remains may occur in the same place as standing structures but are considered a distinct element (called a component) of the larger resource.
- Built environment resources consist of buildings, structures, objects, or districts. Typically, built environment resources must be 50 years of age or older to qualify as cultural resources. Where these resources form a landscape unified by a coherent historical or design theme, they may qualify as a rural historic landscape (U.S. Department of the Interior 1999:1).

Between March 26, 2015 and April 22, 2015, a fossil locality search was requested from the Los Angeles County Museum of Natural History, Vertebrate Paleontology section, for the PCCP Program. Results of a locality search and an assessment of paleontological sensitivity was provided for each PCCP Program line. These results were provided in five letter reports prepared by Dr. Sam A. McLeod of the Vertebrate Paleontology section.

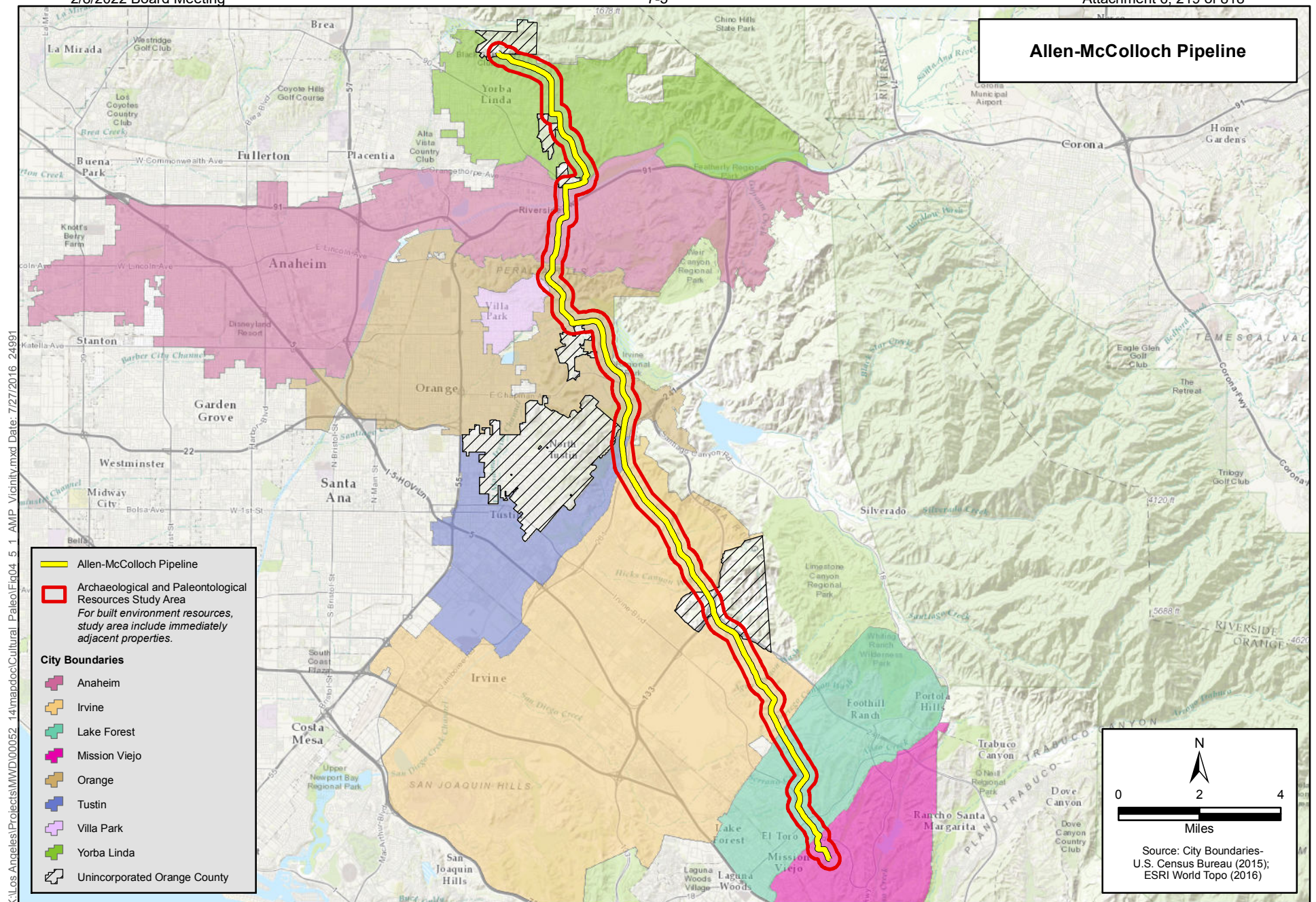


Figure 4.5-1
Allen-McColloch Pipeline Cultural Resources Study Area
Metropolitan Water District PCCP Rehabilitation Program

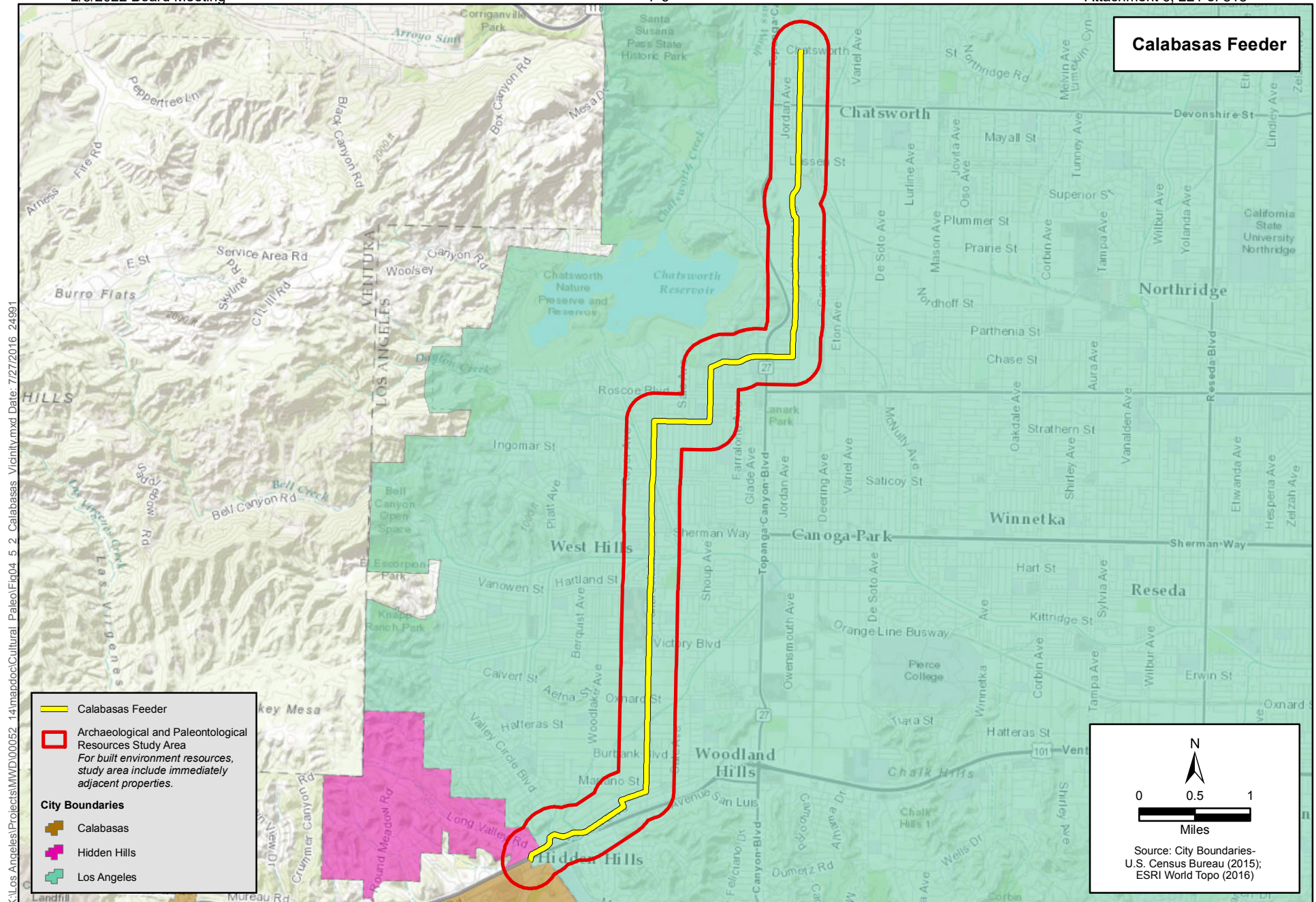


Figure 4.5-2
Calabasas Feeder Cultural Resources Study Area
Metropolitan Water District PCCP Rehabilitation Program

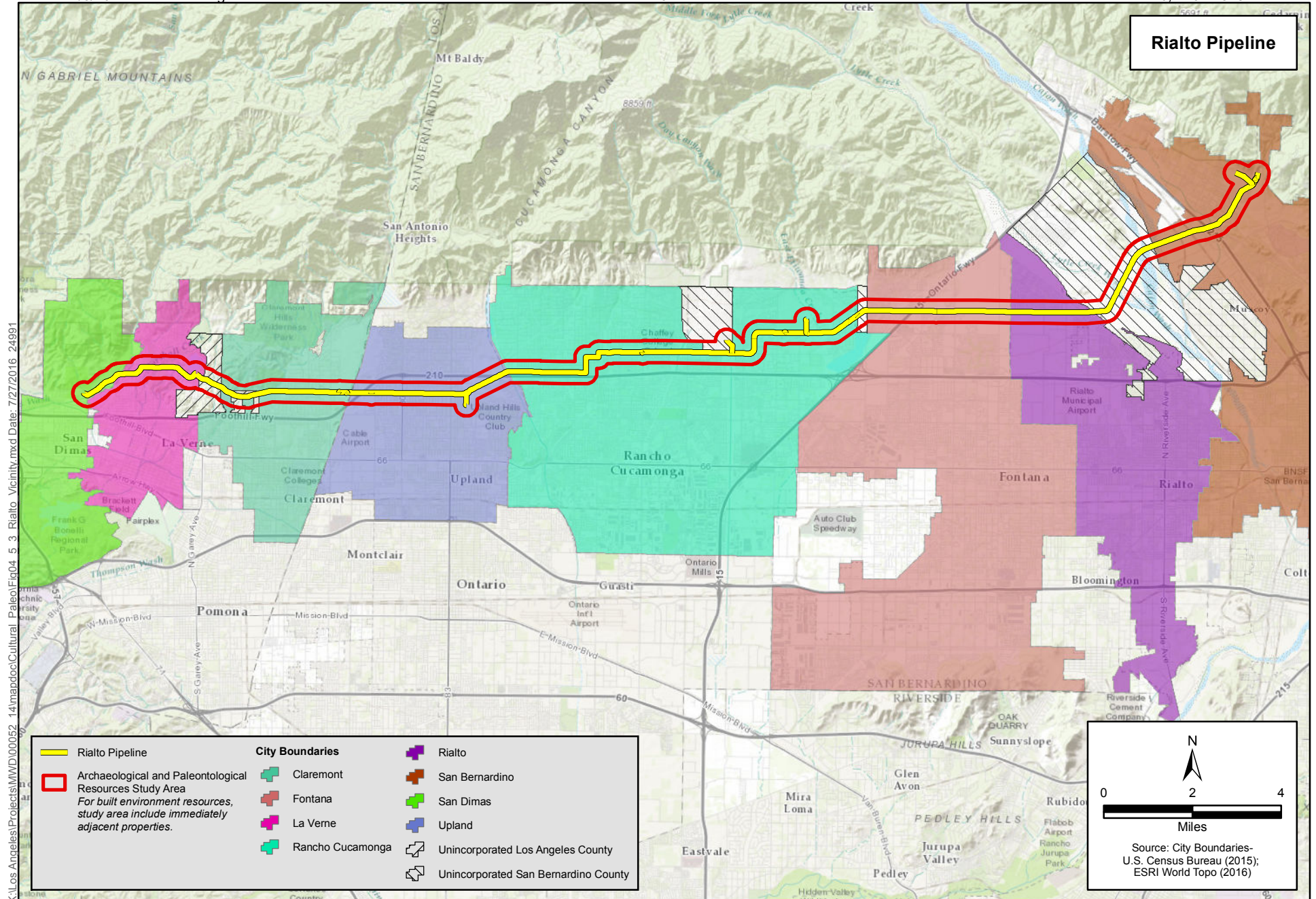


Figure 4.5-3
Rialto Pipeline Cultural Resources Study Area
Metropolitan Water District PCCP Rehabilitation Program



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Tables in the pipeline-specific discussions below document the geologic formations crossed by the pipelines. General types of fossils that have been recovered from these sediments are also listed.

4.5.2.1 Paleontological, Cultural, and Historical Background

Paleontological Setting

The project site is in Southern California in a physical setting known as the Los Angeles Basin. The Los Angeles Basin is a roughly north-south trending depositional trough in the northwestern portion of the Peninsular Ranges geomorphic province (CGS 2002). The Los Angeles Basin has been the site of discontinuous marine deposition since the Late Cretaceous (99.6 million years ago); it began to fill with alluvium about 5 million years ago and eventually was exposed above sea level, and terrestrial deposition began. Geologic structures in this region reflect the resolution of tectonic forces as the northwest-trending structures of the northern Peninsular Range Province, exemplified by the Whittier-Elsinore fault, meeting the Santa Monica-Hollywood-Raymond fault of the Transverse Range Province (CGS 2002; Jahns 1954).

Geographic features in the Los Angeles Basin include the San Fernando Valley, the Los Angeles Plain, the Pomona Valley, the Santa Ana Valley, the San Gabriel Valley, and the San Bernardino Valley. All of these interconnected lowlands are drained by three large river systems: the Los Angeles, San Gabriel and Santa Ana rivers. These rivers, their tributaries, and many small intermittent water flows from the mountains surrounding these valleys have resulted in a deep accumulation of Pleistocene-age (2.6 million years ago to 10,000 years ago) to Holocene-age (10,000 years ago to present) alluvium consisting of water-borne deposits of silt, sand, and gravel. The relatively level to gently sloping alluvium forms a series of intercut layers that gets older at greater depths below the ground surface. However, in some settings, Pleistocene-age sediments are exposed at the ground surface. Underlying these alluvial deposits is bedrock of various types (Dibblee 1989). For example, in downtown Los Angeles, geotechnical work on one city block (City of Los Angeles 2004) found alluvial sediments extended to depths ranging between 27 feet to 52.5 feet below the ground surface. Underlying the alluvium was Fernando Formation bedrock of early Pliocene age (3.4 to 5.5 million years ago).

Mountains and hills divide the Los Angeles Basin, such as the Santa Monica Mountains, Hollywood Hills, Santa Ana Mountains, San Gabriel Mountains, and San Bernardino Mountains, as well as ranges of small hills such as the Chino Hills or Puente Hills. These ranges are made up of various structures of sedimentary formations and volcanic and granitic rocks (Hinds 1952).

The paleontological sensitivity of these rock units ranges from not sensitive to very sensitive. Quaternary younger alluvial deposits of Holocene-age deposits contain the remains of modern organisms and are too young to contain fossils. Younger alluvial deposits have been determined to have a low potential for paleontological resources. Typically, Quaternary older alluvial deposits throughout Southern California are considered to be highly sensitive for vertebrate fossils (McLeod 2015a, 2015b, 2015c, 2015d, 2015e). Sixty Pleistocene localities from this type of sediment, exclusive of Rancho La Brea, were reviewed by Miller (1971), and many localities have since been discovered.

The layers of consolidated bedrock forming mountains and hills, as well as underlying the alluvial deposits, have been repeatedly demonstrated to be abundantly fossiliferous in the program area. These sedimentary formations include the La Habra, Fernando, Puente, Monterey, Saugus, Upper Modelo, Chico, Silverado, Williams, Vaqueros, Topanga, Capistrano, and Niguel formations. All of

these sedimentary bedrock formations have been assigned a “high” designation for paleontological resource sensitivity. In some areas, volcanic and granitic rocks are exposed. These rock units have no potential to contain paleontological resources (McLeod 2015a, 2015b, 2015c, 2015d, 2015e).

Cultural Background

Prehistoric Setting

The prehistoric occupation of Southern California is divided chronologically into several temporal phases, or horizons, as presented on Table 4.5-1, based on the work of William J. Wallace (Moratto 1984). Horizon I, or the Early Man Horizon, began at the first appearance of people in the region (approximately 11,000 years ago) and continued until about 7,000 years ago. Although little is known about these people, it is assumed that they were semi-nomadic and subsisted primarily on game.

Horizon II, also known as the Millingstone Horizon or Encinitas Tradition, began around 7,000 years ago and continued until about 3,500 years ago. The Millingstone Horizon is characterized by widespread use of milling stones (manos and metates), core tools, and few projectile points or bone and shell artifacts. This horizon appears to represent a diversification of subsistence activities and a more sedentary settlement pattern. Archaeological evidence suggests that hunting became less important and that reliance on collecting shellfish and vegetal resources increased (Moratto 1984).

Horizon III, the Intermediate Horizon or Campbell Tradition, began around 3,500 years ago and continued until about 1,300 years ago. Horizon III is defined by a shift from the use of milling stones to increased use of mortar and pestle, possibly indicating a greater reliance on acorns as a food source. Projectile points become more abundant and, together with faunal remains, indicate increased use of both land and sea mammals (Moratto 1984).

Horizon IV, the Late Horizon, which began around 1,300 years ago and terminated with the arrival of Europeans, is characterized by dense populations; diversified hunting and gathering subsistence strategies, including intensive fishing and sea mammal hunting; extensive trade networks; use of the bow and arrow; and a general cultural elaboration (Moratto 1984).

Table 4.5-1. William J. Wallace’s Chronological Horizons for Prehistoric Cultures

Horizon	Time Period	Description
Horizon I/Early Man	11,000–7,000 years ago	First appearance of humans in the region
Horizon II/Millingstone Horizon	7,000–3,500 years ago	Widespread use of millingstone (manos, metates), representing a more sedentary settlement pattern
Horizon III/Intermediate Horizon	3,500–1,300 years ago	Shift from use of millingstone to increased use of mortar and pestle and more projectile points
Horizon IV/Late Horizon	1,300 years ago to arrival of Europeans	Dense populations, diversified hunting, intensive fishing, and extensive trade networks
Source: Moratto 1984		

Ethnographic Setting

When Spanish explorers and missionaries first visited the southern coastal areas of California, the indigenous inhabitants of the Los Angeles area (the Tongva) were given the Spanish name “Gabrieliño.” Gabrieliño/Tongva territory included the watersheds of the San Gabriel, Santa Ana, and Los Angeles rivers; portions of the Santa Monica and Santa Ana mountains; the Los Angeles Basin; the coast from Aliso Creek to Topanga Creek; and San Clemente, San Nicolas, and Santa Catalina islands. The Gabrieliño language is classified as belonging to the Takic family (or “Cupan”), Uto-Aztec stock, and is subdivided into four or more separate dialects (Shipley 1978). The proposed program area is in the region where the Fernandeno dialect of the Gabrieliño language was spoken. The names Gabrieliño and Fernandeno refer to the two major missions established in Gabrieliño territory: San Gabriel and San Fernando (Bean and Smith 1978).

The Gabrieliño/Tongva inhabited some 50 to 100 permanent villages in fertile lowlands along streams and rivers and in sheltered areas along the coast at the time of European contact. The larger permanent villages most likely had populations averaging 50 to 200 persons. Sedentary villages also had smaller satellite villages located at varying distances; these remained connected to the larger villages through economic, religious, and social ties (Bean and Smith 1978). Gabrieliño villages contained four basic types of structures. Houses were circular and domed, made of tule mats, fern, or carrizo (Kroeber 1925; Bean and Smith 1978). The Gabrieliño sweathouses were small, circular earth-covered buildings. Villages may have included menstrual huts and open-air ceremonial structures made with willows inserted wicker fashion among willow stakes (Bean and Smith 1978).

Ethnographic information indicates that the Gabrieliño occupied the area between the Palos Verdes Peninsula and the Los Angeles River as evidenced by the number of recorded village sites in each of these areas. Gabrieliño place names on the peninsula include *Chaawvenga*, *Xuuxonga*, *Toveemonga*, *Aataveanga*, *Kiinkenga*, *Toveemonga*, and *Haraasnga* (McCawley 1996). McCawley also provides information for the village sites of *Swaanga* and *Ahwa Anga* as located along the Los Angeles River closest to its junction with the Pacific Ocean. These villages were occupied as late as the 1700s and early 1800s as evidenced by notations in the baptismal registers of Mission San Gabriel (McCawley 1996). *Swaanga* was documented as one of the larger, more substantial village sites (Reid 1852; McCawley 1996 citing Reid). However, there is some discrepancy as to the actual location of the village. McCawley (1996) cites Reid’s (1852) notation that *Swaanga* was located at “Suang-na,” suggesting that this was still a recognizable place by 1852.

The Gabrieliño/Tongva had a rich and varied material culture. Technological and artistic items included shell set in asphaltum, carvings, paintings, an extensive steatite industry, baskets, and a wide range of stone, shell, and bone objects that were both utilitarian and decorative. Gabrieliño/Tongva subsistence was based on a composite hunting and gathering strategy that included large and small land animals, sea mammals, river and ocean fish, and a variety of vegetal resources. Generally, Gabrieliño settlements were created at the intersection of several ecozones. The majority of the population drifted as families to temporary hillside or coastal camps throughout the year, returning to the central location on ritual occasions or when resources were low and it was necessary to live on stored foods.

Offshore fishing was accomplished from boats made of pine planks sewn together and sealed with asphaltum or bitumen. Much of the fishing, shellfish harvesting, and fowling took place along the ocean shoreline or along freshwater courses. Sea mammals were taken with harpoons, spears, and

clubs. River and ocean fishing was undertaken with the use of line and hook, nets, basket traps, spears, and poisons (Hudson and Blackburn 1982).

Land animals were hunted with bow and arrow and throwing sticks, and were trapped or clubbed. Smaller animals such as rabbits and ground squirrels were driven with grass fires and taken with deadfall traps. Seasonal grass fires may have had the additive effect of yielding new shoots attractive to deer. Burrowing animals could be smoked from their lairs.

Transportation of plants and other resources was accomplished through the use of burden devices such as coiled and woven baskets and hammock carrying nets commonly made from grass and other plant fibers.

The Gabrieliño/Tongva were apparently first contacted by Europeans in 1542 when Juan Rodríguez Cabrillo entered the area. Following subsequent Spanish visits to the region, colonization began in 1769, precipitating the establishment of Missions San Gabriel (1771) and San Fernando (1797). Due in part to the introduction of Euro-American diseases and the harsh effects of mission life, the Gabrieliño population and culture suffered a gradual deterioration. Following the secularization of the missions, most surviving Gabrieliño became wage laborers on the ranchos of Mexican California. In the early 1860s, a smallpox epidemic nearly wiped out the remaining Gabrieliño. The combination of disease, forceful reduction, and poor diet contributed to the disappearance of the Gabrieliño as a culturally identifiable group in the 1900 federal census (Bean and Smith 1978). However, persons of Gabrieliño descent have continued to live in the Los Angeles area to the present time.

Historical Setting of Water Supply

Los Angeles Area Water Development and Metropolitan Water District

The city of Los Angeles had a population of around 50,000 in 1892. Developed by the Los Angeles Water Company, supplies from groundwater wells and the Los Angeles River provided adequate water for the city for a time, but a population that exceeded the 100,000 mark around the turn of the century required new sources. Los Angeles Water Company's superintendent at the time, William Mulholland, who would become the region's most famous water developer, predicted that the city's population would reach 400,000 by 1925, but as a result of Mulholland's and others' efforts, regional water infrastructure development would in fact supply water for over a million Angelinos by that year (Schwartz 1991:17).

The majority of that supply came from the Los Angeles Aqueduct, engineered by Mulholland and developed by the City of Los Angeles, which acquired Los Angeles Water Company in 1902 and created the Los Angeles Department of Water and Power (LADWP). Mulholland designed a system to transmit water to Los Angeles from the Owens Valley, approximately 50 miles north. Mulholland worked with former Mayor Fred Eaton, who had originally suggested the Owens Valley as a potential water source for the city. In 1905 Los Angeles voters approved a \$1.5 million bond issue and Eaton began to acquire the necessary land and water rights for the project, which won congressional approval in 1906. Los Angeles voters approved a second bond issue for \$23 million to finance the system in 1907, and the City initiated construction the following year, building over 1,000 miles of roads, pipeline, and electricity and telephone lines in preparation for the water conveyance system (Erie 2006:37; Schwartz 1991:18–19).

Completed in 1913, the Los Angeles Aqueduct was the largest aqueduct in the world for a time. It consisted of nearly 250 miles of canals, tunnels, siphons, and other water conveyance features. Because steel pipe still had to be shipped from the east, its use was limited mainly to 12 miles of canyon-spanning siphons. The City purchased 4,000 acres of clay- and limestone-rich land near the Mojave Desert town of Monolith and established a facility that produced 1,000 barrels of Portland cement per day for the project. The system also included the Haiwee, Fairmont, Bouquet Canyon, and Dry Canyon reservoirs, as well as two reservoirs in the San Fernando Valley, where water from Owens Valley entered the City's local distribution system. Despite opposition to the project by private power companies, hydroelectricity generated from plants along the aqueduct, combined with the City's acquisition of local private electricity distribution systems, would eventually make LADWP the nation's largest municipally owned electricity provider (Karhl 1979:32; Schwartz 1991:20, 22-23; Starr 1990:55-59, 156-57).

During the following decade, other California cities would also begin developing geographically extensive systems for transporting water from eastern California to the growing urban centers along the coast. Between 1926 and 1929, the East Bay Municipal Utility District completed twin 80-mile aqueducts to convey Mokelumne River water from the Sierra Nevada foothills to nine municipalities on the eastern side of the San Francisco Bay. Between 1915 and 1934, the City of San Francisco constructed a system to convey water from a dam and reservoir developed at the Hetch Hetchy Valley in the Sierra Nevada approximately 170 miles west to City storage reservoirs in San Mateo County (Elkind 1994:65-66; SFPUC 1935:51-53).

After 1913, the aqueduct fueled Los Angeles's growth and geographical expansion, but within a decade of its completion, the water supply it afforded the emerging metropolis threatened to become inadequate. Owens Valley water initially supplied Los Angeles with over four times the amount of water that could be used within the city limits. "This surplus," writes historian Kevin Starr, "provided an irresistible force for expansion" (Starr 1990:59). In 1915, the City of Los Angeles annexed the San Fernando Valley. Surplus Owens Valley water provided water for agricultural irrigation in the San Fernando Valley while also replenishing groundwater within the expanding city limits. By 1923, Los Angeles had expanded its geographical boundaries to include an area nearly four times the area encompassed in 1913 (Starr 1990:59-60; Karhl 1979:32).

Urban growth and drought during the early 1920s led Los Angeles to seek additional water supply, including increasing the supply from the Owens Valley. There, opposition to Los Angeles's efforts among business and farming interests evolved into a populist resistance movement that included bombings and occupations of Los Angeles aqueduct facilities. (Los Angeles would eventually prevail and become the largest land owner in the Owens Valley.) At the same time, Mulholland and LADWP began to investigate other options. Mulholland, LADWP, and other Southern California interests seized upon a Bureau of Reclamation study recommending construction of a dam across the Colorado River border between Arizona and Nevada, and the Colorado River Compact of 1922, to win voter approval for a bond issue for Mulholland to conduct the first of 16 surveys to establish a route for an aqueduct to convey Colorado River water to the Los Angeles area. In 1926, LADWP constructed a Mulholland-designed dam and reservoir at San Francisquito Canyon north of the city on geological foundations that proved catastrophically faulty. In 1928, the dam failed and released a torrent of water that ripped through the Santa Clara Valley and killed over 400 on its path to the Ventura shoreline. The disaster ended Mulholland's career and increased the importance of Colorado River water development for the long-term growth potential of Los Angeles as well other neighboring and nearby southland municipalities (Karhl 1979: 33, 36; Schwartz 1991:39-40; Starr 1990:159-161).

The Metropolitan Water District (Metropolitan) took shape in this context. No municipality in the Los Angeles area had the resources to build an aqueduct between it and the Colorado River independently; a special district incorporating multiple municipalities was necessary. By the end of 1928, the U.S. Senate had approved the Boulder Canyon Project Act, and residents in 11 southland municipalities—Los Angeles, Pasadena, Burbank, Glendale, Beverly Hills, San Marino, Santa Monica, Anaheim, Colton, Santa Ana, and San Bernardino—had voted in favor of creating Metropolitan, which was incorporated in December of that year. By the end of 1931, Fullerton, Long Beach, Torrance, and Compton had also joined, though Colton and San Bernardino had withdrawn (Kahrl 1979: 41–42; Schwartz 1991:43; Starr 1990:161).

Construction of Metropolitan's 242-mile Colorado River Aqueduct began in the Great Depression year of 1933, under the agency's first superintendent, Frank Weymouth, and was completed in October 1939, 4 years after completion of Boulder Dam. The Colorado River Aqueduct project entailed construction of multiple dams and water storage facilities, including Parker Dam and Reservoir on the Colorado River, Gene Dam and Reservoir, Hayfield Reservoir (later abandoned), Cajalco Dam and Reservoir (later renamed Lake Mathews), and Palos Verdes Reservoir. The completed linear aqueduct included 29 concrete horseshoe-shaped tunnels measuring 16 feet high and 16 feet wide, with a combined length of 92 miles; 62 miles of concrete-lined canal; 92 miles of concrete horseshoe-shaped cut-and-cover conduit in areas subject to extensive flooding and wind-blown sand; 144 inverted siphons across drainages and depressions with a combined length of 29 miles, all constructed of cast-in-place concrete except for the experimental Little Morongo precast pipe siphon; and five pumping plants (Metropolitan 1939: 146–147, 178, 189, 197, 208–229, Tables 14–16; Schwartz 1991:66, 75–76)

Metropolitan began constructing the aqueduct's distribution system in the greater Los Angeles area in 1936 and completed it in 1941. The distribution system consisted of a water treatment and softening plant, tunnels, and 156 miles of feeder pipelines. From the intake tower at the Lake Mathews receiving reservoir, the system's Upper Feeder extended north and west to Glendale and consisted mainly of precast concrete pipelines, as well as the Monrovia, Sierra Madre, Pasadena, and San Rafael tunnels between Glendora and Glendale, and some cast-in-place and steel pipeline segments. The Palos Verdes Feeder, a welded steel pipeline, stretched from Eagle Rock south to Palos Verdes underneath city streets to service Los Angeles, Long Beach, Torrance, and Compton. Comprising precast concrete pipe, welded steel pipe, and the Hollywood Tunnel, the Glendale to Santa Monica segment extended approximately 23 miles through Glendale, Burbank, North Hollywood, Hollywood, Beverly Hills, and West Los Angeles to a reservoir in Santa Monica. The approximately 28-mile Orange County Feeder was constructed from the system's water filtration plant near La Verne through Brea Canyon to service Fullerton, Anaheim, and Santa Ana. Lateral lines were also constructed to serve Burbank, Compton, Torrance, and Long Beach. As of June 30, 1943, the Metropolitan distribution system included 36 miles of 116- to 140-inch and 28 miles of 30- to 58-inch precast concrete pipeline, 0.3 mile of cast-in-place concrete pipeline, 2.5 miles of asbestos cement pipeline, 61 miles of welded steel pipeline, 10 miles of cast-iron pipeline, and 16.5 miles of tunnels (Metropolitan 1939:253–272; 1940:61–92; 1943:31–33; Schwartz 1991:76–77).

Although deliveries initially represented a fraction of both the aqueduct's capacity and Southern California's allotment of Colorado River water, the outbreak of World War II increased water demand and led additional municipalities to join Metropolitan. Metropolitan's system provided water, power, and telephone service to the U.S. Army's Desert Training Center. Small cities in Orange County formed the Coastal Municipal Water District, which joined Metropolitan in 1942. Rapid wartime population growth in San Diego, coupled with the Navy's need for increased water supply

for expanded military operations in the area, led San Diego County to join Metropolitan. San Diego exchanged its annual 112,000 acre-foot apportionment of Colorado River water and agreed to pay the standard Metropolitan annexation fee in a deal that provided for Metropolitan and San Diego to split the costs building a connecting pipeline, which was completed in 1947 (Kahrl 1979:42; Schwartz 1991:78–79, 84–86).

Evolution of Concrete Water Pipe and Prestressed Concrete Cylinder Pipe

The first widespread use of concrete water pipelines in the American West occurred during the late nineteenth and early twentieth centuries. High-pressure conduits required steel pipe, and because concrete pipe—including early reinforced concrete pipe—was subject to leakage under heads exceeding 60 feet, it was not widely used for penstocks at early hydroelectric facilities. However, irrigators increasingly made use of concrete pipe during the late nineteenth and early twentieth centuries. In irrigation networks, concrete pipe dramatically reduced evaporation compared to open canals and ditches. Compared to steel pipe, concrete proved much cheaper to produce in California and other parts of the West, where cement factories proliferated and abundant other concrete ingredients—sand, gravel, and rock—remained readily available (JRP 2000:8; Stanley and Fortier 1921:2–5).

Water providers in Southern California increasingly made use of concrete pipe during the early twentieth century for lower-pressure water conduit. In 1921 a U.S. Department of Agriculture bulletin reported that Orange County's Whittier Water Company had "laid considerable quantities of continuous reinforced concrete pipe" (Stanley and Fortier 1921:6–7). LADWP also installed segments of concrete pipe for multiple siphons along the aqueduct between the Owens Valley and Los Angeles. The Los Angeles Aqueduct's 11 miles of siphon incorporated nearly 3 miles of 10-foot-diameter reinforced concrete pipe that operated under heads ranging from 40 to 75 feet, while the remaining siphon segments consisted of steel pipe (City of Los Angeles 1916:192, 209). For pipeline conduit, pre-World War II extensive water conveyance systems and urban distribution systems continued to rely mainly on riveted and Lock-Bar steel pipe, or—beginning in the 1920s—welded steel pipe (Cates 1971:3–5). As of June 1940, for example, Metropolitan's greater Los Angeles-area water distribution system consisted of approximately 37 miles of precast and cast-in-place concrete pipe, and 48 miles of welded steel pipe (Metropolitan 1940: Tables 18–19).

Between 1920 and 1940, most water-conveying concrete-pressure distribution pipe installed in the U.S. consisted of steel cylinder concrete pipe that was not prestressed. The first such pipeline installed in the U.S. was a 36-inch-diameter line constructed in Cumberland, Maryland, in 1919. As described by the American Water Works Association, nonprestressed concrete pipe fabricated during this period consisted of "a welded steel sheet or steel plate cylinder with steel joint rings welded to its ends; a reinforcing cage or cages of steel rods or bars surrounding the cylinder; a wall of dense concrete covering the steel cylinder inside and out, and...a preformed lead gasket," the latter of which provided joint seal and was replaced after 1935 by rubber joint gasket (AWWA 1961:877, 878 quoted).

During World War II, military construction needs resulted in widespread steel shortages, which increased the use of concrete pipe and simulated innovations in concrete pipe technology, including the introduction of PCCP (AWWA 2008:53; Cates 1971:4). In the United States, water providers first installed PCCP within the U.S. in the cities of Penman, Virginia, and Hyattsville, Maryland, in 1942. Such pipe included conduits comprising steel cylinders lined with a concrete core, and conduits consisting of a steel cylinder embedded within a concrete core (AWWA 1961:878). Describing the

manufacture of PCCP compared to nonprestressed concrete cylinder pipe in 1961, the American Water Works Association (AWWA) explained (AWWA 1961:879):

The welded steel cylinder with joint rings attached is made and tested in the same manner as the nonprestressed cylinder pipe. It is then lined centrifugally with dense concrete by a method that rapidly revolves the pipe in a horizontal position. The lined cylinder is cured, and high-tensile wire is wrapped around the core directly on the steel cylinder. The tension of the wire is measured accurately and constantly to produce a predetermined residual compression in the core. Spacing and size of the wire are determined by design requirements. The wrapped core is then covered by a dense, premixed mortar about 7/8-inch thick, applied by an impact method.

According to AWWA, annual installation of PCCP in the U.S. for water conveyance increased from 12,000 linear feet in 1942 to 1,305,314 linear feet in 1946 (AWWA 2008: 56).

While PCCP production declined in the late 1940s, it increased again during the early 1950s and surpassed the previous 1946 high mark in 1954, when 1,752,670 linear feet of PCCP were produced in the United States. The PCCP installed in the U.S. during the 1940s later became known as lined-cylinder prestressed concrete pipe (LC-PCCP). Embedded-cylinder prestressed concrete pipe (EC-PCCP) was introduced the early 1950s. As explained by AWWA in 1961, although cylinders and joint rings for both types of PCCP were constructed in the same way, early EC-PCCP differed from LC-PCCP in that the cylinder and joint rings were “embedded in vertical casting...after the concrete is cured, the wire reinforcement is wound around the outside of the concrete core that contains the cylinder, instead of being wound directly on the cylinder. An exterior coating of premixed mortar is applied by an impact or by the vertical-casting method” (AWWA 1961:880).

EC-PCCP was used less widely than LC-PCCP throughout the 1950s. For example, in 1955, 1,437,237 linear feet of LC-PCCP was produced in the U.S. compared to 554,589 linear feet of EC-PCCP. Production of LC-PCCP and EC-PCCP in the U.S. during the year 1961 totaled 1,710,406 and 1,151,640 linear feet, respectively. That year, AWWA estimated that 16,000,000 linear feet (3,030 miles) of PCCP had been installed for water conveyance in the U.S. (AWWA 1961:879; 2008: xxi, 53, 56). As such, between 1942 and 1961, PCCP became a widely used, commonplace water conveyance technology.

The State Water Project and Post-War Expansion of the Metropolitan Distribution System

With LADWP's Los Angeles Aqueduct and Metropolitan's Colorado River Aqueduct, Southern California enjoyed water abundance during the immediate post-World War II years of the latter 1940s and the first half of the 1950s. After initiating deliveries to San Diego beginning in 1947, Metropolitan began annexing additional municipal water districts in the 1950s. Still, as late as 1954, Metropolitan's aqueduct pumps transmitted supplies that met the region's water needs while operating at half capacity (Kahrl 1979:42).

Accurately anticipating long-term growth in Los Angeles, Orange, Riverside, and San Bernardino counties, where new suburban tract-housing developments proliferated amid the post-war baby boom and rapid economic growth, Metropolitan began a \$200 million program of facilities expansion in 1952. The program provided for 165 miles of new Southern California distribution pipelines and tunnels, including construction of the Lower Feeder between 1954 and 1957. Between 1950 and 1954, Metropolitan's water district annexations included Pomona Valley (1950, later renamed Three Valleys), Eastern, Chino Basin, and Orange County (1951), Foothill (1953), and Central Basin and Western Riverside County (1954). Three more municipal water districts joined

during the early 1960s: Las Virgenes (1960), Calleguas (1961), and Upper San Gabriel Valley (1963). During the 1940s and 1950s, California's population grew from 6.9 million to 15.7 million, but not until the 1960s did demand increases from Southern California's spectacular post-war growth begin to raise concern about Metropolitan's capacity to provide adequate supply (Kahrl 1979:42; Metropolitan 1971:16; Schwartz 1991:87–88, 103).

Well before the 1960s, long-term plans to deliver additional water supply to Southern California from sources beyond the region were already in the works. Beginning in the early 1950s, State Engineer A. D. Edmuniston began advocating for the Feather River project, which proposed to build a dam on the river at Oroville for storage, hydroelectric power, and flood control, and to transport Feather River water to the Sacramento-San Joaquin Delta, where water would be drawn for transport to the San Joaquin Valley and Southern California. Opposition in Northern California thwarted the project for a time. However, it received new powerful backing when Pat Brown won the governor's office in 1958 and orchestrated legislative passage of the 1959 Burns-Potter Act authorizing the project. Meanwhile, Metropolitan leadership had explored other potential supply sources and remained skeptical of the project up through the 1960 public vote on Proposition 1 to decide its fate. Aggressively negotiating Metropolitan commitments to the project, Metropolitan leadership reached an agreement with the State just before the voting public approved Proposition 1 by a slim margin. After a failed attempt to amend the contract between the State and Metropolitan in 1961, implementation of the project—which came to be known as the State Water Project (SWP)—moved forward. The pending new supply would prove essential. By 1962, Southern California's population had increased to 17.3 million, and in 1964 a U.S. Supreme Court ruling reduced Metropolitan's allotment of Colorado River water by more than half (Schwartz 1991:103–105, 109–120).

As implemented, the SWP would pump water from the Sacramento-San Joaquin Delta into the California Aqueduct, which would extend 444 miles south to Southern California. Other elements of the SWP system would include the 2 million acre-feet capacity San Luis Reservoir and a coastal branch delivery system to serve San Luis Obispo and Santa Barbara counties. Pumping facilities would transmit aqueduct flows over the Tehachapi Mountains, and the aqueduct would split into east and west branches, with the west branch flowing into Castaic Lake north of Los Angeles and the east branch running east of the Los Angeles basin at a 140-mile distance to Lake Perris in Riverside County (Schwartz 1991:120–122).

During the early 1960s, Metropolitan made plans to expand its Southern California distribution in anticipation of the new SWP supplies from Northern California. In 1966, voters serviced by Metropolitan approved an \$850 million general obligation bond for the design and initial phase of construction. At the time, the total cost of the new distribution system was estimated at \$1.2 billion, and included three new major feeder lines. The most important line of the system, the Foothill Feeder, would transmit SWP supply from the new Lake Castaic Reservoir through a 60-mile system of tunnels, siphons, and pipelines across the eastern Santa Susana Mountains, the Verdugo Mountains, and the south slope of the San Gabriel Mountains to the eastern San Gabriel Valley area. The Sepulveda Feeder would transmit water from a treatment plant connected to the Foothill Feeder in Granada Hills approximately 60 miles south through underground San Fernando Valley pipeline, a tunnel underneath the Santa Monica Mountains, and underground pipeline extending across the western Los Angeles Basin to Torrance. The Second Lower Feeder would extend east from the Palos Verdes Reservoir through Torrance and Long Beach and into Orange County, where it would turn north to connect with the Robert B. Diemer Filtration Plant in Yorba Linda. Two of these feeder lines would incorporate extensive PCCP segments now proposed for rehabilitation as part of

the current PCCP Rehabilitation Program: the Second Lower Feeder and the Sepulveda Feeder (Herbert 1965:3; Metropolitan 1966:79–85; Schwartz 1991:129).

PCCP standards issued by AWWA (PCCPC301) underwent several modifications during the mid-twentieth century, including a 1964 modification, issued 2 years prior to construction of the Second Lower Feeder. While the upper diameter size limit for LC-PCCP remained 48 inches, 1964 revision to the standard increased the upper limit for EC-PCCP from 72 to 96 inches and provided for larger-diameter pipe with engineer approval. The 1964 revision reduced the minimum pound per square inch (psi) allowance for surge pressures from 50 psi to 40 psi. While the 1964 revision retained a 16-gauge (0.060-inch thick) design basis for steel cylinder thickness, the minimum diameter of reinforcing wire was reduced from 6 gauge (0.192 inch) to 8 gauge (0.162 or 3/8 inch). Minimum cast concrete coating thickness over the core remained 1 inch in 1964, down from 1.5 inches in 1955. With wire size reduced to 3/8 inch, the standard allowed a 5/8-inch minimum concrete coating thickness over the wire. At the same time, the 1964 revision reduced the minimum thickness of shotcrete outer coating from 3/4 inch to 5/8 inch (AWWA 2008:60, 64–65, 68).

The first of the new feeder lines built to handle new supply from the SWP was the Second Lower Feeder, most of which consisted of PCCP. Construction of the approximately 40-mile distribution line began in April 1966 with work on an 8.2-mile segment from Anaheim to Long Beach. By mid-1969, Metropolitan contractors had completed the feeder from the Diemer Filtration Plant in Yorba Linda through Placentia, Anaheim, Buena Park, Cypress, and Los Alamitos and into Long Beach as far east as its connection with a cross feeder at Victoria and 223rd Streets. By mid-1969, only the westernmost segment between Alameda Street in east Carson and the Palos Verdes Reservoir had yet to be completed. Metropolitan contractors finished that westernmost segment in September 1970. The Second Lower Feeder's final price tag was \$35,341,744. It included approximately 30 miles of 78-inch diameter PCCP. In addition to the cities already mentioned, segments of the Second Lower Feeder are located in Rolling Hills Estates, Lomita, Torrance, Los Angeles, Lakewood, and unincorporated areas of Los Angeles and Orange counties (*Los Angeles Times* 1966:OC1; Metropolitan 1967:119; 1969:133; 1970:33; 1975:20).

Connecting to the Foothill Feeder, the Sepulveda Feeder system would consist of a 60-mile-long main distribution line extending south to a connection with the Second Lower Feeder in Torrance, as well as the Joseph Jensen Treatment Plant (initially the Balboa Water Treatment Plant), the East Valley Feeder and the West Valley Feeder No. 1 (the existing Calleguas Conduit), the West Valley Feeder No. 2, and the Calabasas Feeder. Construction of the Sepulveda Feeder began in May 1968 with work on the outlet tunnel from the Jensen Treatment Plant south to Chatsworth Street in Granada Hills. Construction on the Sepulveda Tunnel through the Santa Monica Mountains began in September 1968. Metropolitan contractors finished laying the main Sepulveda Feeder line in October 1972. The completed main Sepulveda Feeder line from the Jensen Filtration Plant to its connection with the Second Lower Feeder consisted of approximately 37 miles of 150-inch-diameter PCCP, 120-inch-diameter PCCP, and 96-inch-diameter PCCP. The overwhelming majority of the feeder's pipeline was 96-inch-diameter PCCP. The portions of the Sepulveda Feeder included in the proposed PCCP Rehabilitation Program are in Torrance, Carson, Gardena, Hawthorne, Inglewood, and Los Angeles (Metropolitan 1966:81–83; 1969:148; 1970:85, 128; 1975: 18–19).

AWWA standards for PCCP (PCCPC301) underwent limited additional revisions in 1972 and 1979. The 1972 revision increased the diameter size limit for EC-PCCP from 96 inches to 144 inches, and lowered the minimum PCCP steel cylinder thickness from 16 gauge (0.060 inch) to 18 gauge (0.048 inch) for pipe 48 inches or less in diameter, and retained the 16 gauge minimum cylinder thickness

for pipe 54 inches or more in diameter. The 1979 revision increased the 48-inch-diameter size limit for LC-PCCP, which was part of the 1955 revision, to 60 inches. The 1979 revision included a notation that the largest EC-PCCP manufactured by that year was 252-inch-diameter pipe for siphons on the Central Arizona Project (AWWA 2008:60, 64–65)

Two Metropolitan feeder lines to be rehabilitated as part of the current PCCP Rehabilitation Program were constructed during the first half of the 1970s: the Rialto Pipeline and the Calabasas Feeder. The Rialto Pipeline was planned as the fifth easterly reach of the Foothill Feeder, to be constructed between the San Dimas terminus of the fourth reach and the Devil Canyon power plant approximately 29 miles to the east. Metropolitan contractors began work on the first 7.6-mile segment of the pipeline through unincorporated areas of San Bernardino County in 1969. By June 1974, the pipeline had been completed through or north of the cities of San Bernardino, Rialto, Fontana, Rancho Cucamonga, Upland, and a portion of Claremont. In June 1975, a Metropolitan contractor finished the final segment from San Dimas east through La Verne to Thompson Creek in Claremont. The completed Rialto Pipeline included approximately 16 miles of 96-inch-, 121.5-inch-, and 136.5-inch-diameter PCCP (Metropolitan 1968:92, 97; 1969:121; 1970:85; 1974:64; 1975:18, 97).

Metropolitan planned the Calabasas Feeder as a subsidiary line of the Sepulveda Feeder system to extend from a connection with the West Valley Feeder No. 2 south to the boundary of the Las Virgenes Municipal Water District service area at Calabasas. Construction of the Calabasas Feeder from Chatsworth Street in Chatsworth south to U.S. Highway 101 began in 1973. Metropolitan contractors finished the feeder line in January 1975. As completed, the Calabasas Feeder consisted entirely of approximately 9.3 miles of 54-inch-diameter PCCP. The Calabasas Feeder is in the cities of Calabasas, Hidden Hills, and Los Angeles (Metropolitan 1967:84; 1970:87; 1973:108, 110; 1975:19, 96, 99).

Of the five PCCP lines included in the PCCP Rehabilitation Program, the last to be constructed was the Allen-McColloch Pipeline. Metropolitan of Orange County built the 26-mile pipeline on behalf of 11 participating agencies, including the Municipal Water District of Orange County (MWDOC), to supply eastern Orange County with Colorado River and SWP water. Construction was completed in early 1981. When dedicated in March 1981, the pipeline was named for Glenn Allen, former MWDOC board president, and Clem M. McColloch, who died soon after the pipeline was completed and also served as MWDOC board president. The southern 9-mile reach of the pipeline was constructed of PCCP. Metropolitan annual reports from this era did not specify the PCCP diameter and did not include the Allen-McColloch Pipeline in maps of its Southern California distribution system. The pipeline is in the cities of Yorba Linda, Anaheim, Orange, Tustin, Irvine, Lake Forest, and Mission Viejo (*Los Angeles Times* 1981: Part II-6; Metropolitan 1981:82–83; Metropolitan 1981:120–21; MWDOC 2014:4, 20).

California Register Eligibility of PCCP Segments of Program Pipelines

None of the PCCP portions of the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, or Sepulveda Feeder appear to be eligible for listing on the CRHR. Consequently, none of these water conveyance resources appear to qualify as historical resources for the purposes of CEQA.

Water conveyance systems and features that clearly demonstrable historic significance are apt to be found eligible for CRHR listing under Criterion 1, for association with important events that have made a significant contribution to the broad patterns of our history, and/or Criterion 3, as resources

that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master. When water conveyance systems or features represent the work of a master, it typically means that a historically significant engineer or builder designed them and managed their construction. It is extremely rare for a historic-period water conveyance system or feature to be found eligible for listing under Criterion 2, for association with the lives of persons important to our past other than individuals who designed and/or built those systems or features. Individual features of a water conveyance system determined not to possess sufficient historical significance to qualify for individual CRHR listing can be found eligible for CRHR listing if they contribute to a larger historically significant system that qualifies for CRHR listing as a historic district. For more information on this topic, see Appendix E.

4.5.2.2 Allen-McColloch Pipeline

The Allen-McColloch Pipeline, which is approximately 26 miles in length, is in Orange County and within the city limits of Yorba Linda, Anaheim, Orange, Tustin, Lake Forest, and Mission Viejo. The pipeline originates from the Diemer Water Treatment Plant in unincorporated Orange County. The Allen-McColloch Pipeline exits the Diemer Water Treatment Plant to the southeast below the Black Gold Golf Club prior to continuing south between residential and commercial land uses in Yorba Linda. After crossing the Santa Ana River and State Route 91, the pipeline generally runs parallel to Imperial Highway before crossing undeveloped and residential land. It continues southeast along the outskirts of Orange, Tustin, and Irvine, traversing primarily undeveloped and agricultural land until entering residential and commercial land of Lake Forest. The Allen-McColloch Pipeline terminates at the El Toro Reservoir in Mission Viejo.

Table 4.5-2 documents the record search for the Allen-McColloch Pipeline.

Table 4.5-2. Allen-McColloch Pipeline – Known Cultural Resources

Trinomial	Primary Number	Eligibility Status	Type/Description	Location in relation to Allen-McColloch Pipeline
n/a	P-30-177541	Does not qualify	Calvary Chapel Church, a Modern-style religious building.	Approximately 54 feet west.
CA-Ora-369	P-30-000369	Unevaluated	Minute shell material and polyhedral core. No interpretive value for the prehistory of area.	Allen-McColloch Pipeline crosses center of site.
CA-Ora-1172	P-30-001172	Unevaluated	Lithic scatter on surface of small knoll—some indication of buried materials.	Allen-McColloch Pipeline crosses western portion of site.
CA-Ora-556	P-30-000556	Unevaluated	Widespread, moderately dense concentration of groundstone and chipped stone artifacts along a ridge top.	Approximately 185 feet northeast.

Trinomial	Primary Number	Eligibility Status	Type/Description	Location in relation to Allen-McColloch Pipeline
n/a	P-30-001548	Unevaluated	Apparent water control impoundment and associated scatter of refuse materials. Remnants of an earthen dam, concrete headwall, and pre-cast delivery pipe are visible on the southern end.	Site of earthen dam is approximately 340 feet east; pipeline crosses associated ditch, part of site, at three points along Jamboree Road.
n/a	P-30-176748	Unevaluated	A portion of the Highline Canal constructed in 1933. Associated features of the canal are several diversion gates, debris traps, flume remains, and conduits.	One portion of canal is approximately 130 feet southwest.
n/a	P-30-176777	Unevaluated	Lambert Ranch, 55-acre property built in 1915.	Northern portion of site is approximately 73 feet southwest.
CA-Ora-649	P-30-000649	Unevaluated	Lithic scatter of flaked materials (cherts and quartzites).	Pipeline crosses the southwestern portion of the site.
CA-Ora-650	P-30-000650	Unevaluated	Milling and flaking station along ridgeline. Ground and chipped stone scattered throughout sagebrush. Extensively disturbed by terracing.	Pipeline crosses the western portion of the site.
CA-Ora-244 CA-Ora-651 CA-Ora-652	P-30-000244	Unevaluated	A large complex village site. Lithic scatter on a small finger of ridge overlooking the mouth of Bee Canyon.	Pipeline crosses the western portion of the site.
CA-Ora-1356	P-30-001356	Unevaluated	Surface artifacts include groundstone, cores, scraper plane, and debitage.	Pipeline crosses the northeastern portion of the site.
CA-Ora-647	P-30-000647	Unevaluated	Rather dense scatter of chipped lithic material on the surface of a ridge.	Pipeline crosses the northeastern portion of the site.
CA-Ora-536	P-30-100188	Unevaluated	Several isolated artifacts identified on the site.	Approximately 130 feet northeast (completely paved).
CA-Ora-536	P-30-100187	Unevaluated	Several isolated artifacts identified on the site.	Approximately 65 feet northeast (completely developed).

Table 4.5-3 lists the geologic formations (McLeod 2015a) crossed by the Allen-McColloch Pipeline, divided geographically, as the route crosses different formations in different hill and mountain exposures. All of these geologic units have high paleontological sensitivity. General types of fossils that have been recovered from these sediments are also listed. (Younger Holocene-age alluvium is

not listed in this table.) Notably, a locality in Santiago Canyon south of Modjeska produced a specimen of a duck billed dinosaur, Hadrosauridae, extremely rare in California.

Table 4.5-3. Allen-McColloch Pipeline – Geologic Formations

Formation/Age	Known Fossils Recovered
Puente Hills Area	
Older Quaternary Alluvium	Land mammals and birds
La Habra—late Pleistocene	Land mammals and birds
Fernando—Pliocene	Marine fish, invertebrates, and mammals
Puente—late Miocene (sometimes called Monterey-Sycamore Canyon)	Marine fish and mammals
Peralta Hills/N. Santa Ana Mountains	
Topanga—middle Miocene	Land mammals, marine mammal, marine birds, fish
Vasqueros/Sespe—Late Eocene-early Miocene	Land mammals, marine mammals, marine birds, and fish
Ladd/Williams—late Cretaceous	Hadrosauridae
Southern Santa Ana Mountains	
Niguel—Pliocene	marine mammals, land mammals
Capistrano—late Miocene	marine mammals, land mammals
Monterey—middle to late Miocene	marine mammals and fish
Topanga—middle Miocene	Land mammals and marine mammal, marine birds, fish

4.5.2.3 Calabasas Feeder

The Calabasas Feeder, which is approximately 9.3 miles long, is in Los Angeles County and travels primarily within the city limits of Los Angeles, with a short portion of the pipeline within the city limits of Hidden Hills and Calabasas. The Calabasas Feeder originates from West Valley Feeder No. 2 in the city of Los Angeles and follows Owensmouth Avenue south through densely populated residential and commercial areas. At Chase Street, the Calabasas Feeder heads west and south, continuing through residential neighborhoods. The Calabasas Feeder then turns southwest and parallels U.S. Highway 101 (US-101) through primarily commercial areas prior to terminating at the Las Virgenes Municipal Water District Service Connection in Calabasas.

Table 4.5-4 documents the record search for the Calabasas Feeder. Listed in the table are all recorded historic-period and prehistoric archaeological sites and built environment resources that occur on or immediately adjacent to the existing pipeline.

Table 4.5-4. Calabasas Feeder – Known Cultural Resources

Trinomial	Primary Number	Eligibility Status	Type/Description	Location in relation to Calabasas Feeder
CA-LAn-964H	P-19-000964	Unevaluated	Standing two-story adobe occupied by Miguel Leonis in the 1870s.	Approximately 260 feet southeast.
CA-LAn-964H	P-19-187332	Listed on NRHP	Also the Leonis Adobe.	Approximately 260 feet southeast.
n/a	P-19-187331	Appears Ineligible	Sagebrush Cantina, formerly retail stores, built in 1924.	Approximately 430 feet southeast.

Table 4.5-5 lists the geologic formations crossed by the Calabasas Feeder and general types of fossils recovered in these sediments (McLeod 2015b). All of these geologic units have high paleontological sensitivity, except for the younger Quaternary/Holocene-age alluvium.

Table 4.5-5. Calabasas Feeder – Geologic Formations

Formation/Age	Known Fossils Recovered
Younger Quaternary/Holocene Alluvium	Very Low sensitivity
Older Quaternary Alluvium	Land mammals and birds, marine mammals
Upper Modelo—late Miocene	marine mammals and birds
Monterey—middle to late Miocene	marine mammals and fish

4.5.2.4 Rialto Pipeline

The Rialto Pipeline, which is approximately 30 miles long, is in San Bernardino and Los Angeles counties and travels within the city limits of San Bernardino, Rialto, Fontana, Rancho Cucamonga, Upland, Claremont, La Verne, and San Dimas, as well as small portions of unincorporated areas in the two counties. The Rialto Pipeline originates at the California Department of Water Resources' Devil Canyon Facility in the city of San Bernardino and exits the facility to the southwest along Pine Avenue through residential areas. After crossing Interstate 215 (I-215), the Rialto Pipeline continues southwest through vacant and industrial land until entering the northern portions of Rialto and Fontana, where the pipeline traverses a mixture of residential, commercial, and open space. In Rancho Cucamonga, Upland, and Claremont, the Rialto Pipeline travels generally along Interstate 210 (I-210) through primarily residential areas and open space. After traveling to the south of Live Oak Reservoir, the Rialto Pipeline continues through La Verne, traveling between residential neighborhoods, open space, and golf courses. The Rialto Pipeline continues into San Dimas, where it parallels North San Dimas Canyon Road through open space and residential neighborhoods prior to terminating at the San Dimas Power Plant Control Structure.

Table 4.5-6 documents the record search for the Rialto Pipeline. Listed in the table are all recorded historic-period and prehistoric archaeological sites and built environment resources that occur on or immediately adjacent to the existing pipeline.

Table 4.5-6. Rialto Pipeline – Known Cultural Resources

Trinomial	Primary Number	Eligibility Status	Type/Description	Location in relation to Rialto Pipeline
n/a	P-36-060258	Unevaluated	The isolate consists of a mortar ground into a sandstone/limestone boulder 40 centimeters in diameter. Probably redeposited through flooding episodes of Cucamonga Creek.	Approximately 100 feet northwest.
n/a	P-36-016474	Listed on the NRHP	Sam and Alfreda Maloof Residence and Studio.	Approximately 175 feet southeast.
CA-SBR-16156H	P-36-004946	Unevaluated	12 Historic Era rock piles.	Approximately 200 feet east (completely destroyed by subdivision).
CA-SBR-16156H	P-36-013748	Unevaluated	Etiwanda Colony water distribution system. Remnants of ceramic pipes and concrete structures.	Approximately 90 feet north.
CA-SBR-16155H	P-36-025410	Unevaluated	Manmade flood control berm.	Approximately 43 feet north.
n/a	P-36-013747	Unevaluated	Sparse scattering of glass and ceramics and metal.	Approximately 43 feet north.
n/a	P-36-013749	Unevaluated	Two structural foundations in the mouth of the canyon.	Rialto Pipeline crosses the southern end of the site.
CA-SBR-6589H	P-36-006589	Unevaluated	Grapeland Irrigation Canal.	Rialto Pipeline crosses the site at Cypress Avenue.
CA-SBR-11508H	P-36-011508	Unevaluated	Dirt road and two asphalt-lined ditches.	Rialto Pipeline crosses the site at Cypress Avenue.
CA-SBR-12608	P-36-013614	Unevaluated	A dirt road, concrete pad, asphalt, rusted metal, a palm stump, and tree trunk.	Rialto Pipeline crosses the southeastern portion of the site.
CA-SBR-13700H	P-36-021326	Unevaluated	A segment of the Union Pacific Railroad Company's Colton-Palmdale Cutoff and bridge over Institution Road.	Rialto Pipeline crosses the site at Cajon Blvd.

Table 4.5-7 lists the geologic formations crossed by the Rialto Pipeline and general types of fossils recovered in these sediments (McLeod 2015c). The older Quaternary Alluvium and the Puente Formation have high paleontological sensitivity.

Table 4.5-7. Rialto Pipeline – Geologic Formations

Formation/Age	Known Fossils Recovered
Younger Quaternary/Holocene Alluvium	Very Low sensitivity
Older Quaternary Alluvium	Land mammals and birds
Puente—late Miocene (sometimes called Monterey-Sycamore Canyon)	Marine fish and mammals
Pelona Schist	No sensitivity
Plutonic igneous rock	No sensitivity

4.5.2.5 Second Lower Feeder

The Second Lower Feeder, which is approximately 39 miles long, is in Orange County and Los Angeles County and travels within the city limits of Yorba Linda, Placentia, Anaheim, Buena Park, Cypress, Los Alamitos, Long Beach, Carson, Los Angeles, Torrance, Lomita, and Rolling Hills Estates, plus unincorporated areas of the two counties. The pipeline originates at the Diemer Water Treatment Plant in Yorba Linda and exits the facility to the west across vacant land, before turning south and crossing the Black Gold Golf Course. The Second Lower Feeder continues southwest through Yorba Linda, traversing residential and commercial areas along several roadways. Upon entering Placentia, the pipeline parallels Angelina Drive through residential, open space, and commercial areas. It continues southwest through Anaheim, traversing more residential, open space, and commercial areas, prior to heading west along Ball Road through Buena Park and Cypress. In Los Alamitos, the Second Lower Feeder crosses west through El Dorado East Regional Park and continues west into Long Beach and slightly into Lakewood through residential neighborhoods prior to paralleling the northern edge of the Skylinks at Long Beach Golf Course and the Long Beach Airport. The pipeline continues west along roadways in developed neighborhoods prior to crossing the Los Angeles River and Interstate 710 (I-710) just north of Interstate 405 (I-405). The Second Lower Feeder enters Carson along Carson Street and continues west, traveling through business, residential, and commercial areas, then turns south along Western Avenue, and continues through a small portion of unincorporated Los Angeles County and the city of Los Angeles. Prior to terminating at the Palos Verdes Reservoir, the Second Lower Feeder travels southwest, barely touching into Torrance and Lomita, and passing through Rolling Hills Country Club along Palos Verdes Drive.

Table 4.5-8 documents the record search for the Second Lower Feeder. Listed in the table are all recorded historic-period and prehistoric archaeological sites and built environment resources that occur on or immediately adjacent to the existing pipeline.

Table 4.5-8. Second Lower Feeder – Known Cultural Resources

Trinomial	Primary Number	Eligibility Status	Type/Description	Location in relation to Second Lower Feeder
n/a	P-19-287085	California Historical Landmark #963	The Mojave Road. Former Indian trade route and U.S. Army road.	Pipeline crosses the site at Alameda Street (State Route 47).
CA-LAn-281	P-19-000281	Unevaluated	Deep dark midden deposit. Probable village. Site removed in construction of reservoir.	Western portion of site adjacent.

Table 4.5-9 lists the geologic formations crossed by the Second Lower Feeder and general types of fossils recovered in these sediments (McLeod 2015d), divided geographically, as the route begins in the Puente Hills, crosses the broad alluvial expanses of the Los Angeles Basin, and terminates in the Palos Verdes Peninsula. (Younger Holocene-age alluvium is not listed in this table.) All of these geologic units have high paleontological sensitivity, except for the Malaga Mudstone, which is a deep sea deposit. However, this unit may encompass evidence of deep water fossils and is considered possibly sensitive for fossil resources.

Table 4.5-9. Second Lower Feeder – Geologic Formations

Formation/Age	Known Fossils Recovered
Puente Hills	
Older Quaternary Alluvium	Land mammals and birds
La Habra—late Pleistocene	Land mammals and birds
Fernando—Pliocene	Marine fish, invertebrates, and mammals
Palos Verdes Peninsula	
Older Quaternary Alluvium (Palos Verdes Sand)	Land mammals, marine mammals, and birds
San Pedro Sand—early Pleistocene	Land mammals, marine mammals, and birds
Timms Point Sand—early Pleistocene	marine mammals and fish
Lomita Marl—early Pleistocene	marine mammals, birds, and fish
Fernando-Pliocene	Marine fish
Malaga Mudstone—late Miocene	No known recovery to date
Monterey—middle to late Miocene	
Valmonte Diatomite member	marine mammals and fish
Altamira Shale member	marine mammals and fish

4.5.2.6 Sepulveda Feeder

The Sepulveda Feeder, which is approximately 42 miles long, is in Los Angeles County and travels within the city limits of Los Angeles, Culver City, Inglewood, Hawthorne, Gardena, and Torrance, plus a small unincorporated area of Los Angeles County. The Sepulveda Feeder originates at the Jensen Water Treatment Plant in the city of Los Angeles and exits the facility to the south through residential neighborhoods and the eastern portion of the Knollwood Golf Course. The Sepulveda

Feeder continues south along Hayvenhurst Avenue, traversing mixed residential, commercial, vacant lots, agricultural fields, and the Van Nuys Airport. Just north of the Van Nuys Golf Course, the Sepulveda Feeder turns east through residential areas and crosses I-405, prior to paralleling the freeway south into developed portions of the Sherman Oaks and Encino neighborhoods of Los Angeles. The Sepulveda Feeder continues to generally parallel I-405 toward the southeast into Culver City and Inglewood, where it traverses commercial and residential areas. Near the Ladera Heights neighborhood, the Sepulveda Feeder travels east through primarily residential neighborhoods before turning south and paralleling Van Ness Avenue through developed portions of Hawthorne, Gardena, and Torrance. The Sepulveda Feeder terminates at the Second Lower Feeder Interconnection in Torrance.

Table 4.5-10 documents the record search for the Sepulveda Feeder. Listed in the table are all recorded historic-period and prehistoric archaeological sites and built environment resources that occur on or immediately adjacent to the existing pipeline.

Table 4.5-10. Sepulveda Feeder – Known Cultural Resources

Trinomial	Primary Number	Eligibility Status	Type/Description	Location in relation to Sepulveda Feeder
n/a	P-19-190584	Not eligible	RMG Hathaway Office Building.	Approximately 30 feet east.
n/a	P-19-188103	Not eligible	One-story, single-family residence constructed in 1946.	Approximately 183 feet east.
n/a	P-19-187739	Eligible	Concrete tunnel and roadway built in 1929.	Sepulveda Feeder crosses site.
n/a	P-19-173043	Listed on NRHP	Veterans Administration Medical Center: 14 Spanish colonial/mission revival buildings.	Adjacent on east.
n/a	P-19-188905	Not evaluated	Bridge 53-1099S, constructed in 1957, is a concrete box-girder bridge.	Adjacent on northeast.
n/a	P-19-190026	Not eligible for CRHR	Spanish Eclectic-style house built in 1937 that was modified into an office in 1974.	Approximately 85 feet northeast.
n/a	P-19-189764	Recommended eligible	Westdale Savings and Loan building, built in 1961.	Approximately 63 feet east.
n/a	P-19-189769	Not eligible	Two-story apartment building built in 1952.	Approximately 66 feet southwest.
n/a	P-19-190592	Not eligible	One-story, rectangular-shaped, symmetrical, Modern-style commercial building.	Approximately 53 feet southwest.
n/a	P-19-186740	Not eligible	St. Eugene Church. Built in 1954.	Approximately 46 feet east.

Table 4.5-11 lists the geologic formations crossed by the Sepulveda Feeder and general types of fossils recovered in these sediments (McLeod 2015e). All of these geologic units have high paleontological sensitivity, except for the Santa Monica Slate. (Younger Quaternary/Holocene-age alluvium is not listed in the table.)

Table 4.5-11. Sepulveda Feeder – Geologic Formations

Formation/Age	Known Fossils Recovered
Granada Hills	
Older Quaternary Alluvium	Land mammals and birds
Saugus—Plio-Pleistocene	Land mammals
Santa Monica Mountains	
Upper Modelo—late Miocene	marine mammals and birds
Monterey—middle to late Miocene	marine mammals and fish
Chico—late Cretaceous	Shark's teeth
Santa Monica Slate—Jurassic	None—very Low Sensitivity

4.5.3 Regulatory Framework

This section describes the plans, policies, and regulations related to cultural resources that are applicable to the proposed program.

4.5.3.1 Federal

There are no applicable federal regulations to cultural resources given that there is no federal nexus to the proposed program.

4.5.3.2 State

California Environmental Quality Act

CEQA, as codified in Public Resources Code (PRC) Sections 21000 et seq. and implemented through the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.), is the principal statute governing the environmental review of projects in the state. To be considered an historical resource, a resource must be at least 50 years old. In addition, the State CEQA Guidelines define an *historical resource* as follows.

- (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 (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4850 et seq.).
- (2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

- (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 may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4852) including the following:
- (A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - (B) Is associated with the lives of persons important in our past;
 - (C) 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
 - (D) Has yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the CRHR, it must also retain enough integrity to be recognizable as an historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet the NRHP criteria may still be eligible for listing in the CRHR. .

CEQA requires lead agencies to determine if a proposed project would have a significant effect on important historical resources or unique archaeological resources. If a lead agency determines that an archaeological site is an historical resource, CEQA would apply (PRC Section 21084.1 and State CEQA Guidelines Section 15064.5). If an archaeological site does not meet the State CEQA Guidelines criteria for an historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archaeological resources. 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 (PRC Section 21083.2 (g)).

- Contains information needed to answer important scientific research questions and that 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.

The State CEQA Guidelines note that if a resource is neither a unique archaeological resource nor an historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (14 CCR Section 15064(c)(4)).

Paleontological resources are afforded protection by CEQA per Appendix G of the State CEQA Guidelines, which provides guidance relative to significant impacts on paleontological resources. This guidance indicates that a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geological feature.

California Health and Safety Code Section 7050.5

California State Law, Section 7050.5 of the California Health and Safety Code states:

- (a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the Public Resources Code or to any person authorized to implement Section 5097.98 of the Public Resources Code.
- (b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the [California] Government Code, that the remains are not subject to the provisions of Section 27491 of the [California] Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.
- (c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Of particular note to cultural resources is subsection (c), requiring the coroner to contact the Native American Heritage Commission (NAHC) within 24 hours if discovered human remains are determined to be Native American in origin. After notification, NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants, if possible, and recommendations for treatment of the remains. The most likely descendants will have 24 hours after notification by NAHC to make their recommendation (PRC Section 5097.98). In addition, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under state law (PRC Section 5097.99).

Public Resources Code Sections 5097.5 and 30244

PRC Section 5097.5 prohibits excavation or removal of any “vertebrate paleontological site or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands.” Section 30244 requires reasonable mitigation of adverse impacts on paleontological resources from development on public land.

4.5.3.3 Local

Table 4.5-12 lists the applicable cultural resources regulations for each jurisdiction for the proposed program.

Table 4.5-12. Applicable Cultural Resources Regulations for Proposed Program

Title of Governing Document (date)	Applicable Plan, Policy, and/or Regulation
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Allen-McColloch Pipeline	
Orange County General Plan (2014)	<p>Resource Element, Cultural-Historic Resource Preservation, Goal 2.0: To encourage through a resource management effort the preservation of the county's cultural and historic heritage.</p> <p>Cultural-Historic Resource Preservation, Objective 2.2: Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values.</p> <p>Cultural-Historic Resource Preservation, Objective 2.3: Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value.</p> <p>Cultural-Historic Resource Preservation, Goal 3: To preserve and enhance buildings structures, objects, sites, and district of cultural and historic significance.</p> <p>Cultural-Historic Resource Preservation, Objective 3.1: Undertake actions to identify, preserve, and develop unique and significant cultural and historic resources.</p>
Yorba Linda General Plan (1993)	<p>Recreation and Resources Element, Goal 12, Policy 12.1: Protect significant areas of historical, archaeological, educational or paleontological resources.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.2: Require effective mitigation measures where development may affect historical, archaeological or paleontological resources.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.3: Require the preparation of archaeological or paleontological reports in areas where there is potential to impact cultural resources.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.4: Require that an archaeologist be retained to observe grading activities in areas where the probable presence of archaeological or paleontological resources is indicated.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.5: Preserve uncovered resources in their natural state, as much as feasible to assure their preservation and availability for later study.</p> <p>Historic Resources Element, Goal 1, Policy 1.1: Encourage the preservation, maintenance, enhancement and reuse of existing historic buildings in redevelopment and commercial areas.</p> <p>Historic Resources Element, Goal 2: Preserve, protect and restore significant architectural and historical sites, structures and districts in the City.</p> <p>Historic Resources Element, Goal 2, Policy 2.3: Implement Preservation Mechanisms designating any site, structure, district area deemed to be of local, historical, architectural, or cultural significance. In conjunction, seek Certified Local Ordinance and Certified Local Government status from the California Office of Historic Preservation.</p>

City of Orange General Plan (2010)	<p>Cultural Resources and Historic Preservation, Goal 1.0: Identify and preserve potential and listed historic resources, including buildings, structures, objects, sites, districts, and archaeological resources citywide</p> <p>Cultural Resources and Historic Preservation, Goal 2.0: Identify and preserve neighborhoods that are culturally and historically significant but do not retain sufficient integrity for eligibility as a local, state, or national district.</p> <p>Cultural Resources and Historic Preservation, Goal 4.0, Policy 4.1: Identify, designate, and protect historically and culturally significant archaeological resources or sites.</p> <p>Cultural Resources and Historic Preservation, Goal 4.0, Policy 4.2: Recognize the importance of Santiago Creek as an archaeological resource.</p>
Tustin General Plan (2013)	<p>Land Use Element, Goal 5.0, Policy 5.5: Encourage the restoration and rehabilitation of properties in Tustin eligible for inclusion on the National Register of Historic Places according to the rehabilitation guidelines and tax incentives of the National Trust for Historic Preservation.</p> <p>Land Use Element, Goal 6.0, Policy 6.5: Preserve historically significant structures and sites, and encourage the conservation and rehabilitation of older buildings, sites and neighborhoods that contribute to the City's historic character.</p> <p>Conservation/Open Space/Recreation Element, Goal 12.0, Policy 12.1: Identify, designate, and protect facilities of historical significance, where feasible.</p> <p>Conservation/Open Space/Recreation Element, Goal 12.0, Policy 12.2: Retain and protect significant areas of archaeological, paleontological, or historical value for education and scientific purposes.</p>
City of Irvine General Plan (2012)	<p>Cultural Resources Element, Objective E-2: Evaluate surveyed sites for their present and potential cultural, educational, recreational, and scientific value to the community and the region, and determine their proper disposition prior to the approval of any project which could adversely affect them.</p> <p>Conservation and Open Space Element, Objective L-7: Use and maintain societal resources, including, but not limited to, archeological historical and paleontological resources, as part of the City's land use pattern.</p>
Lake Forest General Plan (1994)	<p>Recreation Element, Goal 4.0, Policy 4.1: Protect areas of important historic, archaeological, and paleontologic resources.</p> <p>Recreation Element, Goal 4.0, Policy 4.2: Identify, designate, and protect buildings or sites of historical significance.</p>
Mission Viejo General Plan (2013)	<p>Conservation and Open Space Element, Policy 1.2: Utilize a development review process to mitigate the impacts of development on sensitive lands such as steep slopes, wetlands, cultural resources, oak woodlands and sensitive habitats.</p>
Calabasas Feeder	
City of Los Angeles General Plan (2001)	<p>Conservation Element, Archaeological and Paleontological, Objective: Protect the city's archaeological and paleontological resources for historical, cultural, research and/or educational purposes.</p> <p>Conservation Element, Archaeological and Paleontological, Policy: Continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities.</p> <p>Conservation Element, Cultural and Historical, Objective: Protect</p>

	<p>important cultural and historical sites and resources for historical, cultural, research, and community educational purposes.</p> <p>Conservation Element, Cultural and Historical, Policy: Continue to protect historic and cultural sites and/or resources potentially affected by proposed land development, demolition or property modification activities.</p>
Calabasas General Plan (2015)	<p>Community Design Element, Policy IX-2: Preserve, protect, and enhance landmarks, sites, historic landscapes and districts, and areas of historical, cultural, and urban design significance.</p> <p>Historic Resources Element, Policy XI-2: Preserve significant archeological and paleontological resources in-situ, when feasible. When avoidance of impacts is not possible, require data recovery mitigation for all significant resources. All forms of excavation in deposits of Native American origin shall be coordinated and monitored by representatives of the Chumash nation.</p>
Rialto Pipeline	
City of San Bernardino General Plan (2005)	<p>Historical and Archaeological Resources, Goal 11.1: Develop a program to protect, preserve, and restore the sites, buildings and district that have architectural, historical, archaeological, and/or cultural significance.</p> <p>Historical and Archaeological Resources, Goal 11.4: Protect and enhance our historic and cultural resources.</p> <p>Historical and Archaeological Resources, Goal 11.5: Protect and enhance our archaeological resources.</p>
San Bernardino County General Plan (2014)	<p>Conservation Element, Goal CO 3: The County will preserve and promote its historic and prehistoric cultural heritage.</p> <p>Conservation Element, Policy CO 3.1: Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity.</p> <p>Conservation Element, Policy CO 3.5: Ensure that important cultural resources are avoided or minimized to protect Native American beliefs and traditions.</p> <p>Open Space Element, Goal OS 4: The County will preserve and protect cultural resources throughout the County, including parks, areas of regional significance, and scenic, cultural and historic sites that contribute to a distinctive visual experience for visitors and quality of life for County residents.</p>
Rialto General Plan (2010)	<p>Cultural and Historic Resources, Goal 7-1: Preserve Rialto's significant historical resources as a source of community identity, stability, aesthetic character, and social value.</p> <p>Cultural and Historic Resources, Goal 7-3: Identify, document, and protect significant archaeological resources in Rialto.</p> <p>Cultural and Historic Resources, Policy 7-3.1: Require archaeological surveys during the development review process for all projects in archaeologically sensitive areas where no previous surveys are recorded.</p>
City of Fontana General Plan (2003)	<p>Open Space and Conservation, Goal #4.2: The City will encourage and support the preservation, rehabilitation, and/or restoration of historical and archaeological resources within the City boundaries and its sphere of influence.</p>
Rancho Cucamonga General Plan (2010)	<p>Land Use, Community Design, and Historic Resources, Policy LU-16: Protect historic resources.</p> <p>Land Use, Community Design, and Historic Resources, Policy LU-19: Identify and protect historic districts and neighborhood character areas.</p>

Upland General Plan (2015)	Community Character Element, Policy CC-9.3: Ensure that City, State, and federal historic preservation laws, regulations, and codes related to historical resources are implemented, including the California Historical Building Code and State laws related to archaeological and paleontological resources, to ensure the adequate protection of these resources.
City of Claremont General Plan (2009)	Land Use Element, Goal 2-14, Policy 2-14.1: Continue to protect architectural, historical, open space, environmental, and archeological resources throughout the City. Land Use Element, Goal 2-14, Policy 2-14.6: Strive to prevent the demolition of structures listed on Register of Historical and Architectural Merit of the City.
Los Angeles County General Plan (2015)	Conservation and Natural Resources Element, Policies for Historic, Cultural, and Paleontological Resources, Policy C/NR 14.2: Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources. Conservation and Natural Resources Element, Policies for Historic, Cultural, and Paleontological Resources, Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.
La Verne General Plan (1999)	Cultural Resources Element, Policy 2.5: Pursue preservation of archeological resources.
San Dimas General Plan (1991)	Conservation Element, Goal Statement CN-2: Conserve the historical and cultural resources of San Dimas. Conservation Element, Policy 2.1.1: Preserve significant paleontological and archaeological sites. Evaluate the significance of each site on a case by case basis. Conservation Element, Policy 2.1.2: Preserve significant historical resources within the City of San Dimas. Evaluate each historical structure, place and site on a case by case basis.
Second Lower Feeder	
Orange County General Plan (2014)	Resource Element, Cultural-Historic Resource Preservation, Goal 2.0: To encourage through a resource management effort the preservation of the county's cultural and historic heritage. Cultural-Historic Resource Preservation, Objective 2.2: Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values. Cultural-Historic Resource Preservation, Objective 2.3: Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value. Cultural-Historic Resource Preservation, Goal 3: To preserve and enhance buildings structures, objects, sites, and district of cultural and historic significance. Cultural-Historic Resource Preservation, Objective 3.1: Undertake actions to identify, preserve, and develop unique and significant cultural and historic resources.

Yorba Linda General Plan (1993)	<p>Recreation and Resources Element, Goal 12, Policy 12.1: Protect significant areas of historical, archaeological, educational or paleontological resources.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.2: Require effective mitigation measures where development may affect historical, archaeological or paleontological resources.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.3: Require the preparation of archaeological or paleontological reports in areas where there is potential to impact cultural resources.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.4: Require that an archaeologist be retained to observe grading activities in areas where the probable presence of archaeological or paleontological resources is indicated.</p> <p>Recreation and Resources Element, Goal 12, Policy 12.5: Preserve uncovered resources in their natural state, as much as feasible to assure their preservation and availability for later study.</p> <p>Historic Resources Element, Goal 1, Policy 1.1: Encourage the preservation, maintenance, enhancement and reuse of existing historic buildings in redevelopment and commercial areas.</p> <p>Historic Resources Element, Goal 2: Preserve, protect and restore significant architectural and historical sites, structures and districts in the City.</p> <p>Historic Resources Element, Goal 2, Policy 2.3: Implement Preservation Mechanisms designating any site, structure, district area deemed to be of local, historical, architectural, or cultural significance. In conjunction, seek Certified Local Ordinance and Certified Local Government status from the California Office of Historic Preservation.</p>
Buena Park General Plan (2010)	Conservation and Sustainability Element, Goal CS-3: Protection of important archaeological and paleontological resources.
Cypress General Plan (2001)	Conservation/Open Space/Recreation Element, Goal COSR-5: Preserve Cypress's archaeological and paleontological resources.
Los Alamitos General Plan (2015)	Open Space, Recreation, and Conservation Element, Policy 3.4: Preserve historical sites and buildings of state or national significance in accordance with the Secretary of Interior Standards for Historic Rehabilitation.
Long Beach General Plan (2010)	Historic Preservation Element, Goal 2: Protect historic resources from demolition and inappropriate alternations through the use of the City's regulatory framework, technical assistance, and incentives.
Los Angeles County General Plan (2015)	<p>Conservation and Natural Resources Element, Policies for Historic, Cultural, and Paleontological Resources, Policy C/NR 14.2: Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.</p> <p>Section 3 of the City of Los Angeles General Plan Conservation Element: City guidelines for the protection of paleontological resources requires that the paleontological resources of the city be protected for research and/or educational purposes. It mandates the identification and protection of significant paleontological sites and/or resources known to exist or that are identified during land development, demolition, or property modification activities.</p>
Carson General Plan (2006)	Parks and Recreation Element, Policy P-9.2: Encourage all development or redevelopment occurring in areas identified as a potential historic archaeological site to be surveyed for historic archaeological resources prior to initiation of site preparation for development.

Torrance General Plan (2010)	Community Resources Element, Policy CR 12.1: Encourage the preservation of public and private buildings which are of local, historical, or cultural importance.
Sepulveda Feeder	
City of Los Angeles General Plan (2001)	<p>Conservation Element, Archaeological and Paleontological, Objective: Protect the city's archaeological and paleontological resources for historical, cultural, research and/or educational purposes.</p> <p>Conservation Element, Archaeological and Paleontological, Policy: Continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities.</p> <p>Conservation Element, Cultural and Historical, Objective: Protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes.</p> <p>Conservation Element, Cultural and Historical, Policy: Continue to protect historic and cultural sites and/or resources potentially affected by proposed land development, demolition or property modification activities.</p>
Culver City General Plan (1996)	<p>Land Use Element, Objective 14: Promote the City's architectural and cultural heritage by preserving buildings and sites that reflect Culver City's varied history and development.</p> <p>Land Use Element, Policy 14.A: Encourage restoration of historic resources in a manner that complies with the U.S. Secretary of Interior's Standards for Rehabilitation of Historic Structures.</p>
Gardena General Plan (2006)	Conservation Element, CN Policy 5.3: Protect and preserve cultural resources of the Gabrielino Native American Tribe found uncovered during construction.
Torrance General Plan (2010)	Community Resources Element, Policy CR 12.1: Encourage the preservation of public and private buildings which are of local, historical, or cultural importance.

4.5.4 Thresholds and Methodology

4.5.4.1 Thresholds of Significance

Table 4.5-14 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to cultural resources. These thresholds are addressed in the PEIR.

Table 4.5-13. CEQA Thresholds for Cultural Resources

Threshold <i>Would the proposed program:</i>
a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
d. Disturb any human remains, including those interred outside of formal cemeteries?

4.5.4.2 Methodology

Historical Resources

CEQA requires an assessment of a project's potential effects on significant historical resources (i.e., those that are listed or eligible for listing in the CRHR or in a local register or survey that meets the requirements of PRC 5020.1(k) and 5024.1(g)). As documented in Section 4.5.2, this PEIR identifies known historical resources that have been reported in the study area for the pipelines in the proposed program. For this program-level analysis, the potential for construction associated with the proposed program to affect these resources is considered. The potential for construction to affect previously unknown resources that may occur within the study area is also considered.

Archaeological Resources

As documented in Section 4.5.2, this PEIR identifies known archaeological resources that have been reported in the study area for the pipelines in the proposed program. For this program-level analysis, the potential for construction associated with the proposed program to affect these resources is considered. The potential for construction to affect previously unknown resources that may occur within the study area is also considered.

Paleontological Resources

As documented in Section 4.5.2, this PEIR identifies known paleontological resources that have been reported in the study area for the pipelines in the proposed program. For this program-level analysis, the potential for construction associated with the proposed program to affect these resources is considered. The potential for construction to affect previously unknown resources that may occur within the study area is also considered.

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 CEQA. Under CEQA, a lead agency must determine if the project would result in the direct or indirect destruction of a unique paleontological 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 “CEQA and Fossil Preservation in California” in the fall 2003 edition of *The Environmental Monitor*. The article states that significant paleontological 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.” Furthermore, it also advises 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.” (Scott and Springer 2003)

More recent guidance has been developed by the Society for Vertebrate Paleontology, which defines significant paleontological 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).” (Society of Vertebrate Paleontology 2010)

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 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.

Human Remains

This program-level analysis considers the potential for construction associated with the proposed program to affect previously undiscovered human remains that may occur within the study area.

Native American Coordination

Native American coordination has been undertaken by Metropolitan, regarding the program. NAHC was contacted regarding the program in early 2015. NAHC responded regarding the Second Lower Feeder on February 10, 2015, and regarding the other four program elements on April 9, 2015. NAHC stated in its response letters that a search of its Sacred Lands Database did indicate the potential for Native American resources for the Rialto Feeder and the Sepulveda Feeder but did not yield any sacred lands within the areas of the Allen-McColloch Pipeline, the Calabasas Feeder, or the Second Lower Feeder.

Specifically, NAHC indicated that there may be Native American resources on the San Bernardino U.S. Geological Survey quadrangle map associated with the Rialto Feeder, and Native American resources on the Beverly Hill and Venice U.S. Geological Survey quadrangle maps associated with the Sepulveda Feeder. It should be noted that NAHC keeps records of resources by Township and Range; therefore, the resources called out could be anywhere with a 36-square-mile area crossed by the mentioned program elements.

In addition, NAHC provided, for each program element, a list of Native American contacts who may have additional information on resources in the area. Table 4.5-14 lists the NAHC-provided contacts.

Table 4.5-14. Native American Contacts provided by NAHC

Contact	Representing
<u>Allen-McColloch Pipeline Contacts</u>	
Tessa Romero, Chairwoman	Juaneño Band of Mission Indians Acjacheman
Office of Chairperson	Juaneño Band of Mission Indians
Sonia Johnston, Tribal Chairperson	Juaneño Band of Mission Indians
Adolph “Bud” Sepulveda	Juaneño Band of Mission Indians
Joyce Perry, Representative	Juaneño Band of Mission Indians
Anita Espinoza	Juaneño Band of Mission Indians
Rebecca Robles	United Coalition to Protect Panhe
<u>Calabasas Feeder Contacts</u>	
Beverly Salazar Folkes	Chumash, Tataviam, Fernandeno
Julie Lynn Tumamait-Stennslie, Chair	Barbareño/Ventureño Band of Mission Indians
Patrick Tumamait	Chumash
Randy Guzman Folkes	Chumash, Fernandeno, Tataviam
Richard Angulo	Chumash
Carol A. Pulido	Chumash
Melissa M. Parra-Hernandez	Chumash
Frank Arredondo	Chumash
Kathleen Pappo	Barbareño/Ventureño Band of Mission Indians
Raudel Joe Banuelos, Jr.	Barbareño/Ventureño Band of Mission Indians
PeuYoKo Perez	Chumash
<u>Rialto Feeder Contacts</u>	
Denisa Torres, Cultural Resources Manager	Morongo Band of Mission Indians
Daniel McCarthy, Director, CRM Department	Morongo Band of Mission Indians
Robert Martin, Chairperson	Morongo Band of Mission Indians
Goldie Walker, Chairwoman	Serrano Nation of Mission Indians
Ernest Siva, Elder	Morongo Band of Mission Indians
Cultural Resources Department	Las Vegas Piute Tribe
Andrew Salas, Chairperson	Gabrieliño Band of Mission Indians—Kizh Nation
Anthony Madrigal, Jr. Tribal Historic Preservation Officer	Twenty-Nine Palms Band of Mission Indians
Lynn Valbuena, Chairwoman	San Manuel Band of Mission Indians
Darrell Mike, Chairperson	Twenty-Nine Palms Band of Mission Indians
Joseph R. Benitez (Mike)	Chemehuevi
Edward Smith, Chairperson	Chemehuevi Reservation
Dennis Patch, Chairman	Colorado River Indian Tribe
John Valenzuela, Chairperson	San Fernando Band of Mission Indians
Anthony Morales, Chairperson	Gabrieliño/Tongva San Gabriel Band of Mission Indians
Sandonne Goad, Chairperson	Gabrieliño/Tongva Nation

Contact	Representing
Sam Dunlap, Cultural Resources Director	Gabrieliño/Tongva Nation
<u>Second Lower Feeder Contacts</u>	
John Tommy Rosas, Tribal Administrator	Tongva Ancestral Territorial Tribal Nation
Anthony Morales, Chairperson	Gabrieliño/Tongva San Gabriel Band of Mission Indians
Sandonne Goad, Chairperson	Gabrieliño/Tongva Nation
Robert F. Dorame, Tribal Chair, Cultural	Gabrieliño Tongva
Bernie Acuna Co-Chairperson	Gabrieliño-Tongva Tribe
Linda Candelaria Co-Chairperson	Gabrieliño-Tongva Tribe
Andrew Salas, Chairperson	Gabrieliño Band of Mission Indians—Kizh Nation
Conrad Acuna	Gabrieliño-Tongva Tribe
Sam Dunlap, Cultural Resources Director	Gabrieliño/Tongva Nation
<u>Sepulveda Feeder Contacts</u>	
Beverly Salazar Folkes	Chumash, Tataviam, Fernandeno
Rudy Ortega Jr., President	Fernandeno Tataviam Band of Mission Indians
Julie Lynn Tumamait-Stennslie, Chair	Barbareño/Ventureño Band of Mission Indians
Patrick Tumamait	Chumash
Ron Andrade, Director	LA City/County Native American Indian Commission
John Tommy Rosas, Tribal Administrator	Tongva Ancestral Territorial Tribal Nation
John Valenzuela, Chairperson	San Fernando Band of Mission Indians
Anthony Morales, Chairperson	Gabrieliño/Tongva San Gabriel Band of Mission Indians
Randy Guzman Folkes	Chumash, Fernandeno, Tataviam,
Richard Angulo	Chumash
Sandonne Goad, Chairperson	Gabrieliño/Tongva Nation
Robert F. Dorame, Tribal Chair, Cultural	Gabrieliño Tongva
Carol A. Pulido	Chumash
Melissa M. Parra-Hernandez	Chumash
Bernie Acuna Co-Chairperson	Gabrieliño-Tongva Tribe
Linda Candelaria Co-Chairperson	Gabrieliño-Tongva Tribe
Andrew Salas, Chairperson	Gabrieliño Band of Mission Indians—Kizh Nation
Kathleen Pappo	Barbareño/Ventureño Band of Mission Indians
Raudel Joe Banuelos, Jr.	Barbareño/Ventureño Band of Mission Indians
Conrad Acuna	Gabrieliño-Tongva Tribe
Sam Dunlap, Cultural Resources Director	Gabrieliño/Tongva Nation
PeuYoKo Perez	Chumash

4.5.5 Impacts Analysis

4.5.5.1 Program Analysis

Threshold CUL-A: Cause a Substantial Adverse Change in the Significance of a Historical Resource

The proposed program has the potential to adversely affect built environment resources (i.e., historic resources), including those identified in Section 4.5.2, and others that have not yet been identified or designated as historic resources. Rehabilitation activities would be temporary, with the only permanent aboveground components being manhole covers, valve boxes, and electrical panels. The impacts of these permanent components would not result in substantial adverse changes to built environment resources; therefore, impacts would be less than significant.

During rehabilitation, there is the potential for construction to result in adverse impacts on built environment resources. Specifically, ground-borne vibration from excavation and concrete cutting could potentially adversely affect nearby resources, which would be a significant impact. Implementation of Mitigation Measure MM CUL-1 would reduce this impact to a less-than-significant level.

The five pipelines themselves are not considered to be eligible for listing on the CRHR. Therefore, rehabilitation of the pipelines would not be a substantial adverse change in the significance of a built environment resource.

Mitigation Measures

MM CUL-1 Historic Resources Protection Program.

To avoid impacts on built environment (historic) resources, prior to any rehabilitation involving excavation or concrete cutting, ~~a qualified cultural resource specialist an architectural historian~~ will be retained to determine whether there are any identified or eligible historical resources present and ~~whether to determine if~~ proposed construction activities could adversely affect these resources. If any resources could be adversely affected by construction, ~~the excavation site will be moved or other~~ measures will be ~~taken used~~ to prevent adverse impacts on the resource, as determined by the ~~qualified cultural resource specialist architectural historian~~.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM CUL-1 would reduce these impacts so that residual impacts would be less than significant.

Threshold CUL-B: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource

The proposed program has the potential to affect unknown buried archaeological resources within the pipeline alignments or in staging areas associated with construction. Buried archaeological resources, either prehistoric or historic, could be inadvertently unearthed during ground-disturbing activities. This would potentially result in the demolition of or substantial damage to significant cultural resources, which would be a significant impact under CEQA.

It is unlikely that archaeological resources will be discovered during trenching and rehabilitation, as this work would take place within sediments previously disturbed by the original pipeline construction. Staging areas, which could be located anywhere along the alignments, have an unknown potential to affect previously undiscovered archaeological resources.

Archaeological resources are known to occur on three of the five pipeline alignments, as listed in Tables 4.5-3, 4.5-7, and 4.5-9. Specifically, there are 11 recorded prehistoric and historical archaeological sites on the Allen-McColloch Pipeline alignment, four sites on the Rialto alignment, and one site on the Second Lower Feeder. This final site has probably been destroyed by subsequent reservoir construction.

If construction were to occur in proximity to any of the previously recorded archaeological resources, there is a potential to damage the sites and undiscovered buried components of the sites. The sediments in proximity to the pipelines have been previously disturbed by installation of the pipelines, and therefore the potential for intact archaeological resources is low, but not precluded; consequently potential significant impacts on archaeological resources could occur. Mitigation Measure MM CUL-2 would mitigate impacts on these known resources to less-than-significant levels.

Pipeline routes that do not cross known archaeological sites and have been disturbed by previous construction have a low potential to encounter unknown buried archaeological resources, although resources could still be found intact in trench walls and other excavation areas; therefore, potential significant impacts on archaeological resources could occur. Due to this low potential, archaeological monitoring is not required. Mitigation Measures MM CUL-3 and MM CUL-4 would mitigate impacts on unknown resources to less-than-significant levels.

Areas selected for staging areas or for other activities beyond the alignments of the existing pipeline routes have not been identified and may contain archaeological resources. Staging or other rehabilitation activities could result in significant impacts on these resources. Implementation of MM CUL-5 would mitigate impacts on archaeological resources to less-than-significant levels.

Mitigation Measures

MM CUL-2 Avoidance or Monitoring of Archaeological Sites.

To avoid impacts on archaeological sites, prior to construction of any program element, such as pipeline alignments, construction staging areas, laydown areas, or relocation of pipelines in new alignments, a new record search will be conducted to determine if additional sites or resources have been recorded on or adjacent to the proposed construction section. Reports will be examined to determine the condition of each site when recorded, if the site has been evaluated, and if destruction of the site is documented. Following this review, recorded archaeological sites that are within the pipeline route will be surveyed and their present conditions assessed (see MM CUL-4). Archaeological monitoring will be required during construction-related ground-disturbing activities if within the recorded area of a significant or potentially significant site and for a 50-foot buffer beyond the site boundary. A Native American monitor may be present if the site is prehistoric. If archaeological materials are discovered during monitoring, procedures outlined in MM CUL-~~4~~3 will be implemented.

If it can be demonstrated that the site has been destroyed by previous construction or other actions and there is no potential for other buried parts of the site within the construction area,

or if the site has been evaluated and determined not eligible for the CRHR, then monitoring will not be required.

MM CUL-3 Preconstruction Meeting for Identifying Cultural Resources.

To avoid impacts on previously unidentified cultural resources, all construction personnel will attend a preconstruction meeting that includes a discussion of cultural resources. The meeting will inform construction personnel on how to identify potential cultural resources during ground-disturbing activities and what to do if such potential resources are encountered.

MM CUL-4 Previously Unidentified Resources Encountered during Ground-disturbing Activities.

In the event that any potentially significant cultural resources are unexpectedly encountered during construction, work will be immediately halted and the discovery shall be protected in place. The contractor will halt construction within 50 feet of the exposed resource until a qualified cultural resources specialist evaluates the discovery.

If the qualified cultural resources specialist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. This additional work may include avoidance, testing, and evaluation or data recovery excavation. Work shall be prohibited in the restricted area until Metropolitan provides written authorization.

MM CUL-5 Archaeological Survey of Non-Pipeline Areas.

Prior to rehabilitation activities of any program element, each area will be subject to pedestrian survey for archaeological resources by a professional archaeologist retained by Metropolitan if ground-disturbing activities are slated to occur. If archaeological sites are recorded or found in these affected areas, the sites will be avoided to the greatest extent feasible. If a site cannot be avoided, site testing and evaluation by a professional archaeologist will be required. This may require test excavations, artifact analysis, evaluation for the CRHR and review by SHPO, and possibly data recovery excavation and reporting.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM CUL-2, MM CUL-3, MM CUL-4, and MM CUL-5 would reduce these impacts so that residual impacts would be less than significant.

Threshold CUL-C: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature

The proposed program has the potential to affect paleontological resources within the pipeline alignments or in staging areas during rehabilitation activities. Paleontological resources could be inadvertently unearthed during ground-disturbing activities.

Projects in the proposed program would have varying potential for impacts due to differences in rock units to be crossed and depth and type of excavation. In areas of alluvial deposits, such as the Los Angeles Plain or the San Fernando Valley, paleontological resources typically do not occur within 5 feet of the ground surface. In areas of exposed bedrock, such as the Santa Ana Mountains,

paleontological resources may be exposed at the ground surface. There is only one previously recorded paleontological locality known along the existing pipelines routes, in sedimentary terrain, at a depth of 16 feet. In this alluvial setting, areas of shallow grading or vehicular traffic, such as to staging areas, are unlikely to affect paleontological resources. It is also unlikely that paleontological resources will be discovered during trenching and rehabilitation in areas with sediments previously disturbed by the original pipeline construction, but this is not precluded. Therefore, projects in the proposed program have the potential result in destruction of or significant damage to unique paleontological resources or unique geological resources, which would be a significant impact under CEQA.

Implementation of MM CUL-6 would reduce impacts on paleontological resources to less-than-significant levels.

Mitigation Measures

MM CUL-6 Develop a Program to Mitigate Impacts on Paleontological Resources for Each Contract Package

In order to avoid impacts on paleontological resources, the following mitigation program will be implemented for each contract package. This mitigation program will be conducted by a qualified professional paleontologist and will be consistent with the provisions of CEQA. This program will include the following.

1. Assessment of site-specific excavation areas to determine those areas that may be designated as highly sensitive for unique paleontological resources to be monitored during ground disturbance.
2. ~~Development of a monitoring plan for these designated areas. Paleontological~~ In these designated areas, if any, paleontological resources monitors qualified to Society of Vertebrate Paleontology standards will be equipped to salvage fossils as they are unearthed and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitoring may be reduced or eliminated if some of the potentially fossiliferous units are determined upon exposure and examination by qualified paleontological resources personnel to have low potential to contain fossil resources. Also in these designated areas, all unique paleontological resources, if any, will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates.
3. ~~Preparation of all unique paleontological resources to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Identification and curation of unique~~ Unique paleontological resources, if any, will be identified and curated into an established, accredited museum repository ~~will be required.~~
4. Preparation of a report of findings including a summary of field work and laboratory methods, an overview of the program work area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, a copy of the report will also be submitted to the designated museum repository.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM CUL-6 would reduce these impacts so that residual impacts would be less than significant.

Threshold CUL-D: Disturb Any Human Remains, Including Those Interred Outside of Formal Cemeteries

Projects in the proposed program have the potential to disturb human remains within the pipeline alignments or in staging areas during excavations or grading. Human remains could be inadvertently unearthed during ground-disturbing activities. This could result in damage to or destruction of these human remains, including those interred outside of formal cemeteries, which would be a significant impact under CEQA. However, California State Law in Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the PRC requires specific procedures for identification and treatment of human remains, both Native American and non-Native American. Therefore, impacts on human remains from the proposed program would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.5.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

The potential for individual future projects to affect significant cultural resources is unknown, but given the number of projects that will take place in the region, it is probable that cumulative growth and development in the Metropolitan service area could have impacts on significant cultural resources. Given the large scale of the region, the proposed program's impacts are reasonably localized. The program's impact would not contribute to cumulative impacts because implementation of Mitigation Measures MM CUL-1 through MM CUL-6 would reduce potential program-related impacts. The incremental effects of the proposed program, after mitigation, would not contribute to a significant adverse cumulative impact on cultural resources.

Section 4.6 Geology and Soils

4.6.1 Introduction

This section describes the existing conditions for geology and soils, the regulatory framework associated with geology and soils, the impacts on geology and soils that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant geology and soils impacts.

4.6.2 Existing Conditions

The study area for geology and soils is the pipeline alignment corridors, plus 0.5 mile on either side (i.e., a 1-mile-wide corridor). The exception is when discussing earthquake faults; any known faults that could affect the pipelines are discussed.

4.6.2.1 Allen-McColloch Pipeline

As shown on Figures 4.6-1 and 4.6-2, the Allen-McColloch Pipeline is in a seismically active area and susceptible to strong groundshaking, seismically induced landslides, and liquefaction as a result of earthquakes. Table 4.6-1 summarizes the Alquist-Priolo Earthquake Fault Zones nearest the jurisdictions traversed by the Allen-McColloch Pipeline study area. Table 4.6-2 summarizes approximately how many acres of the Allen-McColloch Pipeline study area overlap with seismic hazards identified in each jurisdiction within the study area.

Table 4.6-1. Estimated Distance to Nearest Alquist-Priolo Earthquake Fault Zone for Jurisdictions in the Allen-McColloch Pipeline Study Area

Jurisdiction	Distance to Nearest Alquist-Priolo Earthquake Fault Zone (miles)	Nearest Alquist-Priolo Earthquake Fault Zone
City of Yorba Linda	0.0	Elsinore
City of Anaheim	1.7	Elsinore
City of Orange	4.4	Elsinore
City of Villa Park	5.0	Elsinore
City of Tustin	7.7	Elsinore
City of Irvine	7.6	Elsinore
City of Lake Forest	11.9	Elsinore
City of Mission Viejo	12.8	Elsinore
Orange County	0.0	Elsinore
Notes: 0.0 = the Allen-McColloch Pipeline study area crosses the Alquist-Priolo Earthquake Fault Zone within that jurisdiction.		

Table 4.6-2. Estimated Area of Overlap between the Allen-McColloch Pipeline Study Area and Identified Seismic Hazard Areas

Jurisdiction	Earthquake-Induced Landslide Overlap (acres)	Liquefaction Overlap (acres)
City of Yorba Linda	174.2	64.5
City of Anaheim	211.6	683.2
City of Orange	193.6	223.3
City of Villa Park	7.4	-
City of Tustin	9.3	126.6
City of Irvine	-	54.5
City of Lake Forest	33.5	301.5
City of Mission Viejo	63.1	20.9
Orange County	942.3	1,121.5

Seismic Environment

City of Yorba Linda

The city of Yorba Linda is in an area of potential fault rupture and strong groundshaking. The Whittier, Elsinore, San Andreas, and Newport-Inglewood faults have been identified as potentially hazardous in the Public Safety Element of the City of Yorba Linda General Plan. Other active and potentially active faults in the vicinity include the Peralta Hills, San Jacinto, Chino, Malibu-Coast-Raymond, Palos Verdes, San Gabriel, and the Sierra Madre-Santa Susana-Cucamonga faults (City of Yorba Linda 1993).

According to the City of Yorba Linda General Plan (City of Yorba Linda 1993), the Whittier fault is believed to be the main spur from the larger Elsinore fault, which follows a general line easterly of the Santa Ana Mountains into Mexico. The maximum creditable earthquake from the Whittier-Elsinore Fault Zone is a 7.0 magnitude. The Whittier fault zone is also an Alquist-Priolo Earthquake Fault Zone and, accordingly, surface fault rupture hazard in Yorba Linda is high within the boundaries of this zone.

Yorba Linda is also approximately 4 miles from the Peralta Hills fault, 21 miles from the Newport-Inglewood fault, 26 miles from the San Jacinto fault, and 32 miles from the nearest segment of the San Andreas fault. Due to the proximity of regional active and potentially active faults in and around Orange County, and local active faults in Yorba Linda, the risk of structural damage and loss of life due to groundshaking is considerable. The Whittier-Elsinore fault system is probably the most hazardous with respect to groundshaking in Yorba Linda (City of Yorba Linda 1993).

In addition, according to the City of Yorba Linda General Plan (City of Yorba Linda 1993), slope stability is a serious geologic problem in the northern and northeastern parts of the city of Yorba Linda. This area is underlain by siltstone and interbedded sandstone of the Puente Formation, which are often the most prone to landsliding and other forms of slope failure. The Allen-McColloch Pipeline crosses zones identified as earthquake-induced landslide zones, which are areas where previous occurrence of landslide movement or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements (California Geological Survey 2005).

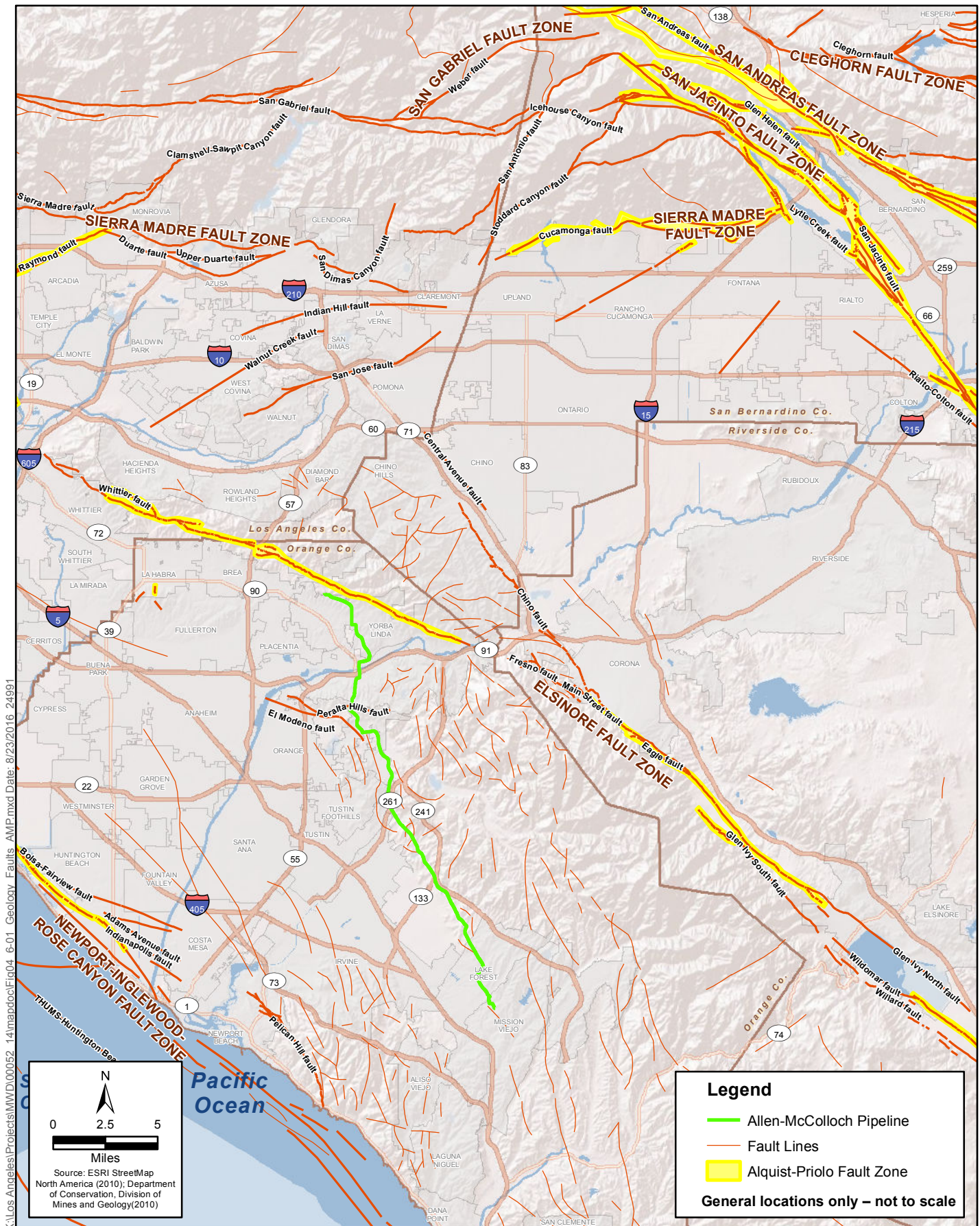


Figure 4.6-1

**Regional Fault Map – Allen-McColloch Pipeline
Metropolitan PCCP Program**

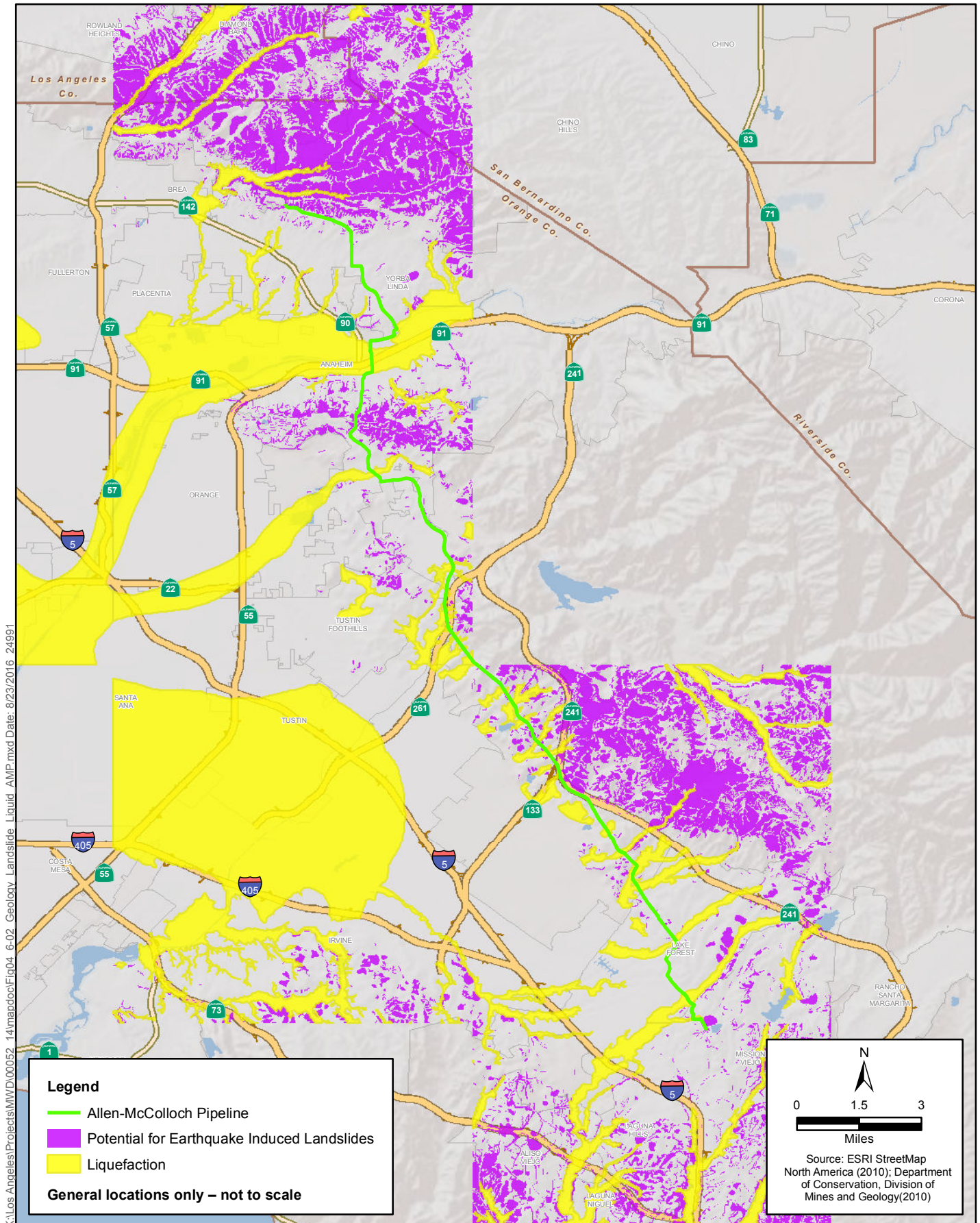


Figure 4.6-2
Regional Landslide/Liquefaction - Allen-McColloch Pipeline
Metropolitan PCCP Program

Liquefaction refers to a phenomenon in which water-saturated granular soils are temporarily transformed from a solid to a liquid state because of a sudden shock or strain, typically occurring during earthquakes. Depending on the other factors such as soil density, ground slope, and stratification, the temporary loss of strength may result only in surface sand and soils or cracks and may also lead to foundation failures, landslides, and excessive subsidence. To have potential for liquefaction, three simultaneous conditions are necessary: generally cohesionless soils, high groundwater, and groundshaking. Most areas in Yorba Linda are assumed to be at low risk for liquefaction hazards because the water table in most places is deeper than 50 feet, except for some parts of the major drainage channels like near the Santa Ana River (City of Yorba Linda 1993).

City of Anaheim

The city of Anaheim is in a seismically active area and active and potentially active faults are adjacent to the city; however, there are no Alquist-Priolo Earthquake Fault Zones within the city limits. The two major Alquist-Priolo Earthquake Fault Zones nearest the city of Anaheim include the Newport-Inglewood fault zone approximately 7 miles to the southwest and the Whittier-Elsinore fault zone within less than 1 mile to the northeast.

Other potentially active faults close to Anaheim are the El Modeno, Peralta Hills, and Norwalk faults, which have a low possibility of ground rupture. The majority of the El Modeno and Peralta Hills faults are south of the Peralta Hills area and outside the boundaries of the city; however, the Allen-McColloch Pipeline crosses the Peralta Hills fault and comes close to the El Modeno fault. The El Modeno fault zone is a concealed fault; therefore, the exact location of the fault is uncertain. The California Department of Mines and Geology has determined that the El Modeno, Peralta Hills, and Norwalk faults are not sufficiently active or well defined enough to be subject to the provisions of the Alquist-Priolo Earthquake Fault Zoning Act. Compared with the more active and recognized fault zones, the potential for ground rupture due to seismic activity in the city is considered low (City of Anaheim 2004).

Earthquake-induced landslides have the potential to occur in the hill and canyon areas of the city of Anaheim and generally consist of rock falls, landslides, and debris flows. Areas with the potential for earthquake-induced landsliding generally are those areas of previous landslide movement, or where topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements (City of Anaheim 2004). Areas considered susceptible to seismic hazards are shown on Figure 4.6-2. Additionally, liquefaction has the potential to affect properties within the city of Anaheim that are located along the Santa Ana River, as well as western portions of the city. Mapped liquefaction zones are shown on Figure 4.6-2.

City of Orange

The city of Orange is susceptible to geologic and seismic hazards including earthquakes; however, no known Alquist-Priolo Earthquake Fault Zones are located in the city. Portions of two possibly active faults traverse the city: the Peralta Hills fault and the El Modeno fault. The Peralta Hills fault runs from the crossing of Lincoln Avenue over the Santa Ana River on the northwest, easterly along the base of the Peralta Hills and into the City of Villa Park, then southerly into the hills west of Peters Canyon Reservoir. The El Modeno fault runs from its intersection with the Peralta Hills fault at the base of the Peralta Hills, southeasterly to Chapman Avenue (City of Orange 2010).

Other faults in the vicinity include the Newport-Inglewood fault approximately 15 miles to the southwest, the Elsinore fault approximately 5 miles to the northeast, and the San Andreas fault approximately 40 miles to the northeast and parallel to the Elsinore fault.

The city of Orange is also susceptible to earthquake-induced landslides and liquefaction. According to the City of Orange General Plan (City of Orange 2010), earthquake-induced landslides are most probable in poorly consolidated or semi-consolidated sedimentary rock, characteristic of the low hills of the northern and eastern parts of the city. Portions of the city that are susceptible to seismically induced liquefaction include areas near the Santa Ana River and Santiago Creek. Areas considered susceptible to seismic-related landslides and liquefaction are shown on Figure 4.6-2.

City of Villa Park

Although the Allen-McColloch Pipeline itself does not run through the city of Villa Park, a portion of the study area overlaps with the northern portion of the city. According to the City of Villa Park General Plan Seismic and Safety Element (City of Villa Park 2010), the city is in the low foothills on the western flank of the Santa Ana Mountains and is southeast of the Santa Ana River. The El Modeno and Peralta Hills faults are nearest to the city; however, little impact from groundshaking is anticipated from these faults. Slope stability in the city is affected by three interrelated factors: surface and subsurface water, geologic structure and rock types, and the degree of slope. Stability is also dependent on the specific properties and combination of materials forming the slope. Moderate slopes occur in the northeastern portion of the city, and exposure to such hazards can be increased with the urbanization of hilly areas. The Allen-McColloch Pipeline does not cross any liquefaction hazard areas in the city.

City of Tustin

The city of Tustin lies within a seismically active region; however, no known active or potentially active faults exist within the city. The El Modeno fault passes through the city's northern section; however, according to the General Plan, studies have not been conclusive about the active/inactive status of this fault (City of Tustin 2012). Groundshaking represents one of the main seismic dangers within the city of Tustin. In addition, areas within the city have been identified as susceptible to bedrock landslides and liquefaction. As shown on Figure 4.6-2, the Allen-McColloch Pipeline study area occurs in areas identified as having the potential to experience earthquake-induced landslides and liquefaction in the city of Tustin.

City of Irvine

The city of Irvine is affected by both local and regional active faults. According to the City of Irvine General Plan Seismic Element (City of Irvine 2012), the Newport-Inglewood fault is the nearest regional active fault and less than 10 miles west of the city. Other faults in the vicinity include the Whittier-Elsinore fault, the San Andreas fault, and the San Jacinto fault.

The City of Irvine has also identified five Seismic Response Areas (SRAs) within the city based on types and magnitudes of potential seismic hazards. The Allen-McColloch Pipeline crosses SRA-2, SRA-4, and SRA-5. According to the General Plan (City of Irvine 2012), the predominant characteristics of these SRAs include denser soils and deeper groundwater (SRA-2), highlands generally over 20 percent slope (SRA-4), and less stable geologic formations (SRA-5). The predominant potential seismic hazard in these areas is ground motion; however, ground breakage and/or ground failure is not expected to occur in this area.

In addition, according to the City of Irvine General Plan Seismic Element (City of Irvine 2012), as slope increases in each of the SRAs, so does slope instability. However, the Allen-McColloch Pipeline study area does not overlap with any areas identified as a seismically induced landslide hazard area, and liquefaction potential is considered to be localized and remote. As shown on Figure 4.6-2, the Allen-McColloch Pipeline study area occurs in areas identified as having the potential to experience liquefaction.

City of Lake Forest

Similar to the other cities in the region, the city of Lake Forest is in a region with active seismic faults and therefore subject to risks and hazards associated with earthquakes. No Alquist-Priolo Earthquake Fault Zone has been established and no known active faults exist within the city; as a result, the potential for ground rupture is low.

In addition, according to the City of Lake Forest General Plan Safety and Noise Element (City of Lake Forest 1994), slope failure from groundshaking could occur in the hillside areas of the city; however, the potential for seismically induced liquefaction is low. In addition, ground settlement could occur on sites within a short distance of alluvial valleys or where a site is partially on bedrock formation, or partially on fill with inadequate internal compaction or consolidation of unsuitable soils. As shown on Figure 4.6-2, approximately the Allen-McColloch Pipeline study area occurs in areas identified as having the potential to experience landslides and liquefaction.

City of Mission Viejo

The city of Mission Viejo is in a seismically active region and could experience groundshaking in the event of a major seismic event along the Newport-Inglewood fault or the San Andreas fault. In addition, the city could experience seismically induced landslides and liquefaction in steeply sloped areas and areas near Aliso and Oso creeks. As shown on Figure 4.6-2, the Allen-McColloch Pipeline study area occurs in areas identified as having the potential to experience landslides and liquefaction in the city of Mission Viejo.

Orange County

Orange County is a region of high seismic activity with susceptibility to potentially destructive earthquakes. Two potentially hazardous active fault zones run along the coastal and inland edges of Orange County. The Newport-Inglewood fault and Whittier fault are capable of producing earthquakes with magnitudes of 7.5 and 7.0, respectively. According to the Orange County General Plan, earthquakes from faults outside the county are also capable of producing groundshaking in the region. Blind thrust faults including the Elysian Park Blind Thrust fault and the Compton Blind Thrust fault extend into and underneath northwestern and southwestern Orange County, respectively. In addition, perimeter faults around Orange County include the San Andreas, San Jacinto, Malibu-Coast-Raymond, Palos Verdes, San Gabriel, and Sierra Madre-Santa Susana-Cucamonga faults. Smaller thrust faults also lay beneath the county, but are not included as Earthquake Fault Zones by the State of California. Areas within Orange County that are affected by Alquist-Priolo Earthquake Fault Zones are within the Bolsa Chica area, Tonner Canyon area, and island areas adjacent to the cities of Yorba Linda and Brea.

In addition, according to the Orange County General Plan, the county is highly susceptible to slope failure and liquefaction. Due to an active seismic environment and the conditions of soils and surface waters in Orange County, there is a high potential for landslides in the region. Therefore, Orange

County's history includes many landslide events, and its future is likely to include many more. According to the Resources Element of the Orange County General Plan, the county's Grading Ordinance strictly regulates hillside grading with regard to soil stability. The Allen-McColloch Pipeline study area occurs in areas identified as having the potential to experience landslides and liquefaction in Orange County.

Soil Erosion

No substantial soil erosion issues were identified by the jurisdictions in the Allen-McColloch Pipeline study area.

Unstable Geology or Soils

Other than the earthquake-related landslides and liquefaction risks described above, no other unstable geology or soils conditions were identified in the Allen-McColloch Pipeline study area by the cities of Orange, Villa Park, Tustin, Irvine, Lake Forest, and Mission Viejo, and unincorporated Orange County. The Allen-McColloch Pipeline study area overlaps with unstable geology or soil conditions in the cities of Yorba Linda and Anaheim, which are discussed in more detail below.

City of Yorba Linda

As described above, slope stability is a serious geologic problem in the northern and northeastern parts of the city of Yorba Linda. This area is underlain by siltstone and interbedded sandstone of the Puente Formation, which are often the most prone to landsliding and other forms of slope failure. Other than the areas identified above as susceptible to earthquake-induced landslides, the Allen-McColloch Pipeline study area does not cross any other areas identified by the Yorba Linda General Plan as prone to landslides.

A slight subsidence and uplift occurs in the region, primarily in the Coyote Hills west of the city of Yorba Linda. There is also slow uplift of the Chino Hills, but this has been identified as too insignificant to cause noticeable damage to engineering structures (City of Yorba Linda 1993). The Allen-McColloch Pipeline study area does not cross either of these areas and therefore would not be subject to subsidence.

City of Anaheim

The city of Anaheim is susceptible to landslides in the steep slopes of the Hill and Canyon Area as identified in the City of Anaheim General Plan. The Hill and Canyon Area is in the eastern portion of the city and includes a portion of the Santa Ana River, Deer Canyon Park Preserve, and the Anaheim Hills Golf Course. The Allen-McColloch Pipeline crosses this area where it is near and parallel to Imperial Highway.

In addition, mining and petroleum exploration activities in the city have resulted in the creation of open pits and wells. According to the City of Anaheim General Plan Safety Element (City of Anaheim 2004), some of these pits and wells may have been abandoned and backfilled with undocumented fill materials. Existing pits and wells backfilled with undocumented materials may be subject to differential settlement, which causes structures to shift, and often become damaged, due to the uneven lowering of the earth. Differential settlement is closely related to subsidence, which is the sudden sinking or gradual downward settling of the Earth's surface with little or no horizontal movement. Subsidence can be caused by natural geologic processes or by human activity such as

subsurface mining or pumping of oil or groundwater. Active and abandoned oil and gas wells occur within and adjacent to the Allen-McColloch Pipeline study area near Imperial Highway and Esperanza Road, making this area susceptible to subsidence.

Expansive Soils

No expansive soils were identified by the jurisdictions in the Allen-McColloch Pipeline study area with the exception of where the study area crosses unincorporated Orange County land. According to the Orange County General Plan, much of the county is covered by soil that may be expansive. Therefore, expansive soils could occur within the Allen-McColloch Pipeline study area in unincorporated Orange County.

4.6.2.2 Calabasas Feeder

As shown on Figures 4.6-3 and 4.6-4, the Calabasas Feeder is in a seismically active area and susceptible to strong groundshaking, seismically induced landslides, and liquefaction as a result of earthquakes. Table 4.6-3 summarizes the Alquist-Priolo Earthquake Fault Zones nearest the jurisdictions traversed by the Calabasas Feeder study area. Table 4.6-4 summarizes approximately how many acres of the Calabasas Feeder study area overlap with seismic hazards identified in each jurisdiction within the study area.

Table 4.6-3. Estimated Distance to Nearest Alquist-Priolo Earthquake Fault Zone for Jurisdictions in the Calabasas Feeder Study Area

Jurisdiction	Distance to Nearest Alquist-Priolo Earthquake Fault Zone (miles)	Nearest Alquist-Priolo Earthquake Fault Zone
City of Los Angeles	3.7	Sierra Madre
City of Hidden Hills	8.9	Malibu Coast
City of Calabasas	8.6	Malibu Coast
Los Angeles County	8.7	Malibu Coast

Table 4.6-4. Estimated Area of Overlap between the Calabasas Feeder Study Area and Identified Seismic Hazard Areas

Jurisdiction	Earthquake-Induced Landslide Overlap (acres)	Liquefaction Overlap (acres)
City of Los Angeles	136.8	3,225.5
City of Hidden Hills	14.8	0.65
City of Calabasas	9.6	32.2
Los Angeles County	6.8	-

Seismic Environment

City of Los Angeles

The city of Los Angeles is a seismically active region. There are Alquist-Priolo Earthquake Fault Zones and fault rupture study areas in the northern, eastern, and central parts of the city. According

to the Safety Element of the General Plan (City of Los Angeles 1996), the fault system in the city interacts with the alluvial soils in the hills and basins and poses seismic risks for the entire city. Alluvial and artificially uncompacted soils tend to amplify groundshaking. Shallow groundwater combined with uncompacted soils can result in liquefaction, and there are risks of seismically induced landslides in the hillside areas of the city.

City of Hidden Hills

The City of Hidden Hills is adjacent to the northwestern portion of the city of Los Angeles, and is also within a seismically active region with numerous active, potentially active, and inactive fault traces. However, there are no Alquist-Priolo Fault Rupture Hazard Zones mapped within the city. According to the Safety Element of the Hidden Hills General Plan (City of Hidden Hills 1995), the city could experience groundshaking from the major active and potentially active faults in the region.

In addition, as shown on Figure 4.6-4, the city of Hidden Hills is subject to liquefaction in areas where sandy, fine-grained soils exist. Also, a few areas of the city may have potentially unstable slopes and could experience earthquake-induced landslides. However, subsidence resulting from groundshaking is unlikely to affect the city of Hidden Hills (City of Hidden Hills 1995).

City of Calabasas

The city of Calabasas is also adjacent to the northwestern portion of the city of Los Angeles and is south of the city of Hidden Hills. Like the other cities discussed above, the city of Calabasas is subject to seismic hazards and could experience groundshaking from the major active and potentially active faults in the region; however, it is not within an Alquist-Priolo Fault-Rupture Hazard Zone.

Other seismic hazards identified in the city include seismically induced landslides and liquefaction. According to the Safety Element of the City of Calabasas 2030 General Plan (City of Calabasas 2015), the topography within the city varies and features vertical slopes and steep canyons. The major environmental factors controlling stability of the steeper hillsides include precipitation, topography, geology, soils, vegetation, and man-made alterations of the natural topography.

Los Angeles County

Los Angeles County has experienced significant earthquakes throughout its history. According to the county's General Plan (County of Los Angeles 2015), over 50 active and potentially active fault segments, an undetermined number of buried faults, and at least four blind thrust faults are capable of producing damaging earthquakes in Los Angeles County.

In addition, according to the Los Angeles County General Plan (County of Los Angeles 2015), more than 50 percent of the unincorporated areas of the county are composed of hilly or mountainous terrain. The vast majority of hillside hazards include mud and debris flows, active deep-seated landslides, hillside erosion, and man-induced slope instability.

Soil Erosion

No soil erosion issues were identified in the Calabasas Feeder study area in the cities of Los Angeles and Calabasas. The Calabasas Feeder study area does overlap with soils susceptible to soil erosion in the city of Hidden Hills and Los Angeles County, which are discussed in more detail below.

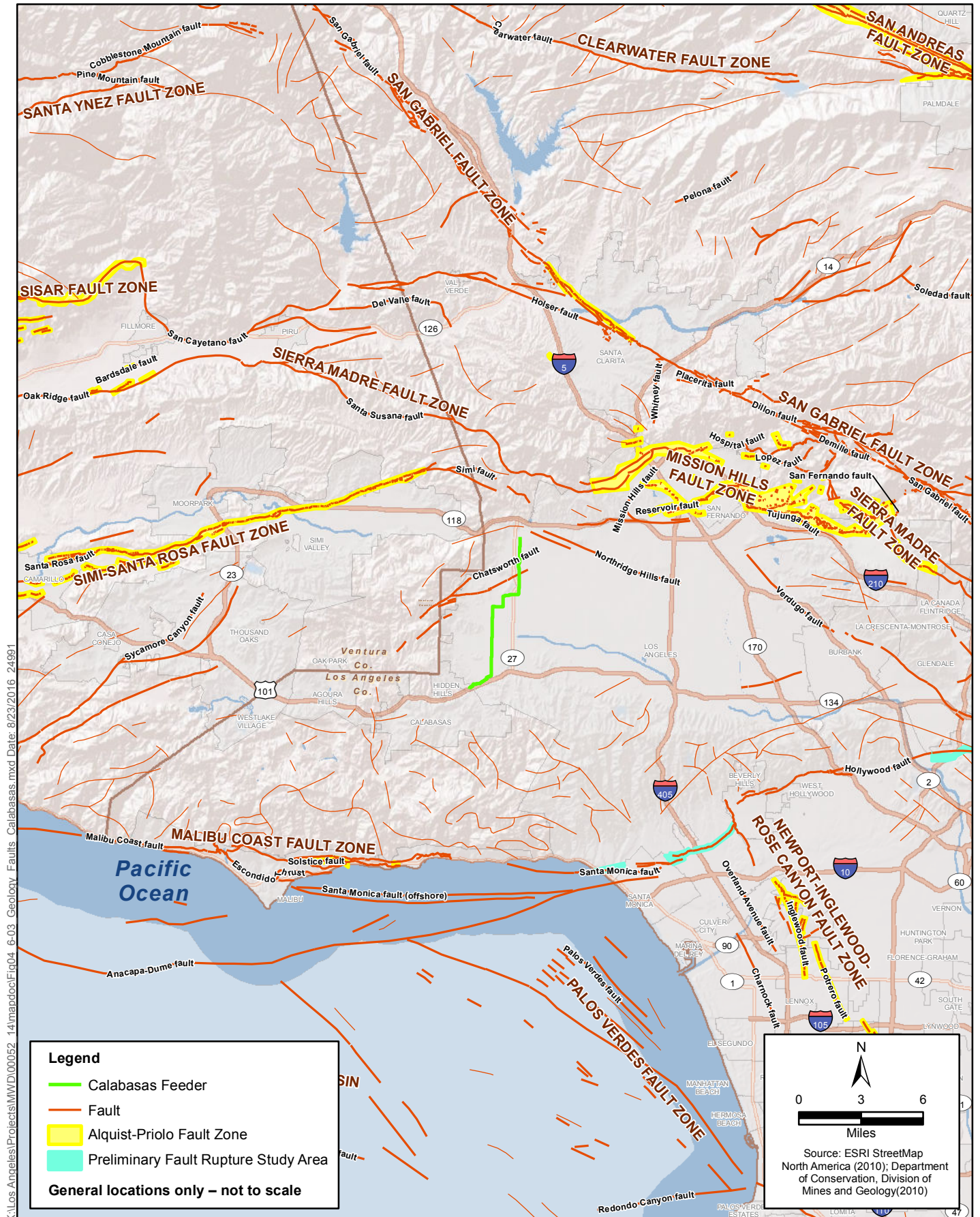


Figure 4.6-3
Regional Fault Map – Calabasas Feeder
Metropolitan PCCP Program

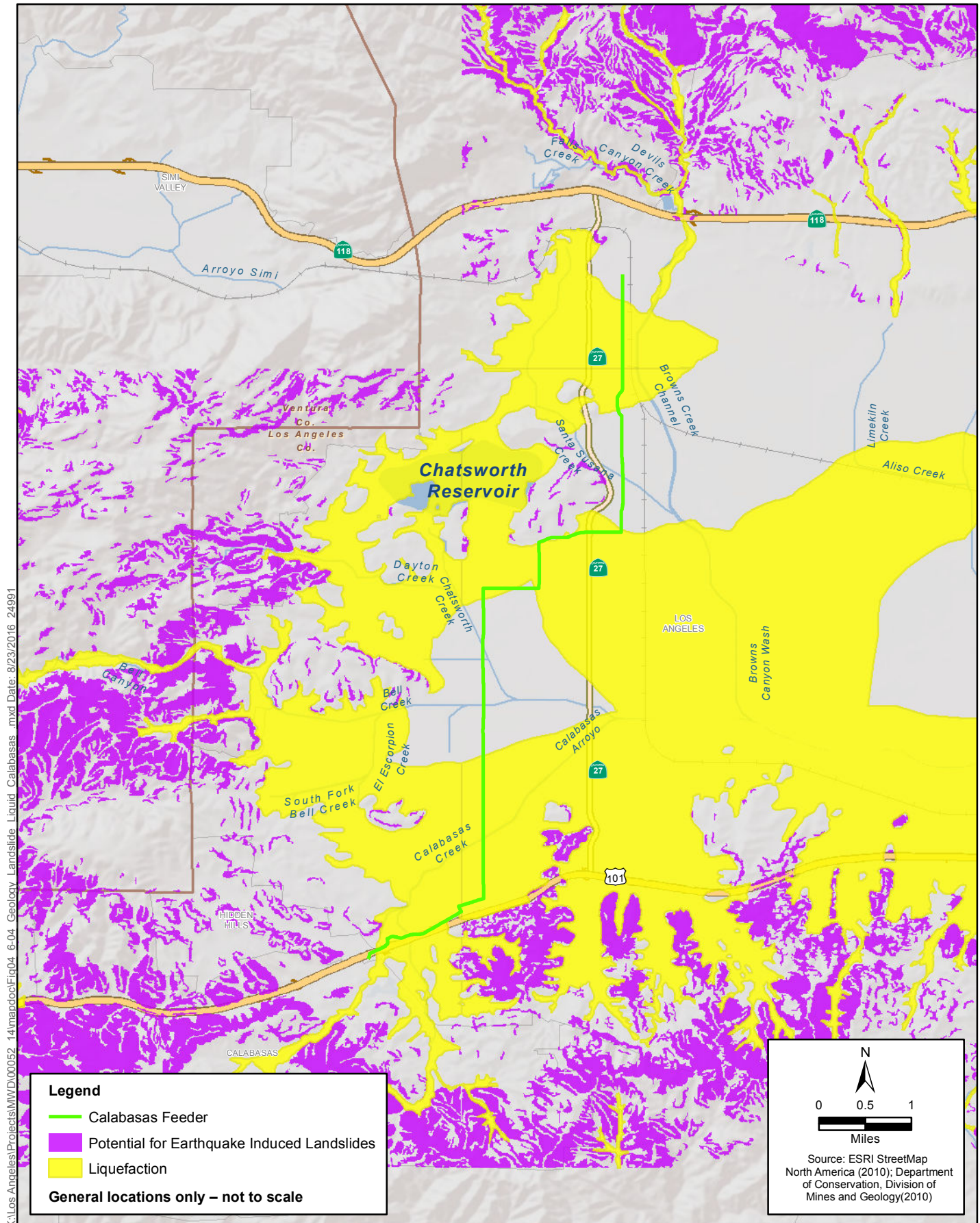


Figure 4.6-4
Regional Landslide/Liquefaction - Calabasas Feeder
Metropolitan PCCP Program

City of Hidden Hills

As described in the Natural Resources Element of the Hidden Hills General Plan (City of Hidden Hills 1995), deposits of sedimentary bedrock consisting of claystone, sandstone, siltstone, diatomaceous shale, and petroliferous shale underlie the entire city. The more gentle slopes within the city lie on a gradient parallel to the underlying bedding plane orientations. Surfaces of these slopes have weathered, producing various thicknesses of topsoil. Steeper slopes within the city indicate weathering over the harder, resistant bedrock. Most soils found in the city have moderate to very high erosion potential.

Los Angeles County

According to the Los Angeles County General Plan, more than 50 percent of unincorporated areas are composed of hilly or mountainous terrain. Such areas are susceptible to hillside hazards, including mud and debris flow, landslides, and hillside soil erosion. Also, the Santa Ana winds were noted to contribute to soil erosion.

Unstable Geology or Soils

Other than the earthquake-related landslides and liquefaction risks described above, no other unstable geology or soils conditions were identified in the Calabasas Feeder study area.

Expansive Soils

No expansive soils were identified in the Calabasas Feeder study area in the city of Los Angeles or Los Angeles County. However, expansive soils were found to potentially occur where the study area crosses the cities of Hidden Hills and Calabasas.

Soils in the city of Hidden Hills are primarily sandy clay derived from fine-grained sedimentary bedrock. According to the Natural Resources Element of the Hidden Hills General Plan (City of Hidden Hills 1995), this type of soil shrinks when it is dry and expands when it is wet; therefore, it is both expansive and creep-prone. When it is wet, the expanding soil affects the foundations of structures built upon it.

According to the 2014–2021 Housing Element Background Report (City of Calabasas 2013), soils with high clay content are found in portions of the city of Calabasas and may present limitations to urban development due to their shrink-swell potential. The exact location of these soils was not identified; however, per city regulations, geologic studies are required prior to commencement of development projects to evaluate the potential for geologic and soil hazards, and the city requires these conditions to be corrected during construction.

4.6.2.3 Rialto Pipeline

As shown on Figures 4.6-5 and 4.6-6, the Rialto Pipeline is in a seismically active area and is susceptible to strong groundshaking as a result of earthquakes. Table 4.6-5 summarizes the Alquist-Priolo Earthquake Fault Zones nearest the jurisdictions traversed by the Rialto Pipeline study area.

The Rialto Pipeline study area does not overlap with any areas identified as earthquake-induced landslide or liquefaction hazard areas.

Table 4.6-5. Estimated Distance to Nearest Alquist-Priolo Earthquake Fault Zone for Jurisdictions in the Rialto Pipeline Study Area

Jurisdiction	Distance to Nearest Alquist-Priolo Earthquake Fault Zone (miles)	Nearest Alquist-Priolo Earthquake Fault Zone
City of San Bernardino	0.0	San Jacinto
San Bernardino County	0.0	San Jacinto
City of Rialto	0.4	San Jacinto
City of Fontana	0.0	Sierra Madre
City of Rancho Cucamonga	0.0	Red Hill-Etiwanda Avenue
City of Upland	0.8	Sierra Madre
City of Claremont	1.4	Sierra Madre
Los Angeles County	3.6	Sierra Madre
City of La Verne	4.6	Sierra Madre
City of San Dimas	6.0	Sierra Madre
Notes: 0.0 = the Rialto Pipeline study area crosses the Alquist-Priolo Earthquake Fault Zone within that jurisdiction.		

The Rialto Pipeline crosses land within the jurisdiction of the County of Los Angeles, which is discussed above under Section 4.6.2.2, *Calabasas Feeder*, and thus not discussed in detail below.

Seismic Environment

City of San Bernardino

The city of San Bernardino is surrounded by earthquake faults, including the San Andreas, San Jacinto, Glen Helen, and Loma Linda faults, which run through the city and are all classified as Alquist-Priolo Special Studies Zones under the Alquist-Priolo Earthquake Fault Zoning Act (City of San Bernardino 2005). Therefore, the potential for fault rupture and seismic groundshaking is high.

San Bernardino County

San Bernardino County is subject to earthquake-related risks, including fault rupture and groundshaking. Numerous faults run through the county, including the San Andreas fault, which has a very high probability of a great earthquake occurring (County of San Bernardino 2014). Another seismic hazard identified in the General Plan includes tectonic subsidence, which is primarily of concern during large earthquake events, when instantaneous subsidence of many feet could occur. The Rialto Pipeline crosses the Alquist-Priolo Earthquake Fault Zone associated with the San Jacinto Fault Zone in San Bernardino County.

City of Rialto

According to the Rialto General Plan (City of Rialto 2010), the city is in a region with sharp contrasts in terrain. Tectonic movement of the San Andreas fault and its subsidiary faults have created an area in which the gently sloping lands in south Rialto abruptly meet the slopes of the San Gabriel Mountains in the north. Virtually all city lands are underlain by poorly consolidated alluvium, resulting in potentially devastating damage in the event of an earthquake. Groundshaking has historically occurred in Rialto due to earthquakes, with moderate to strong shaking associated with

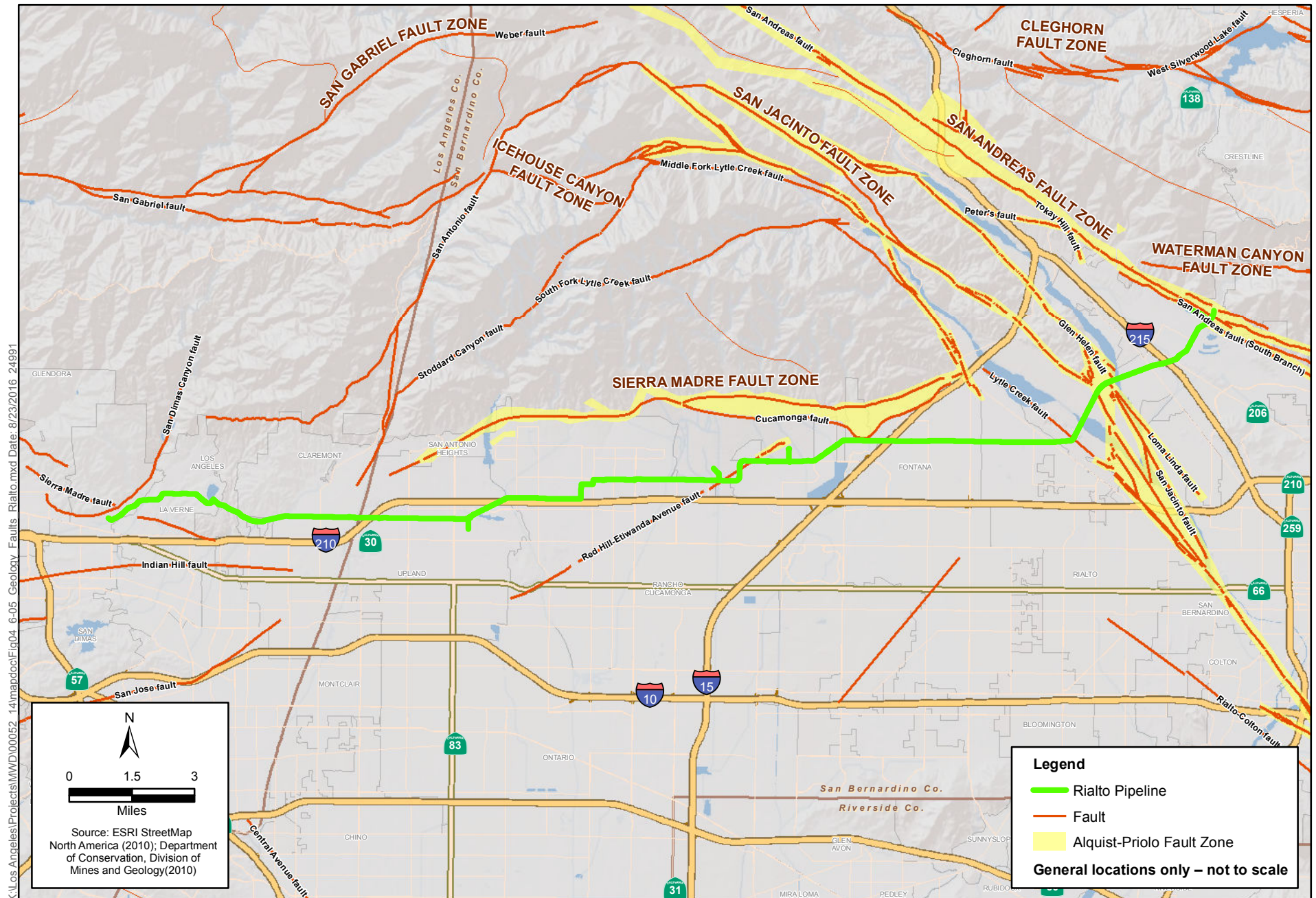


Figure 4.6-5
Regional Fault Map - Rialto Pipeline
Metropolitan PCCP Program

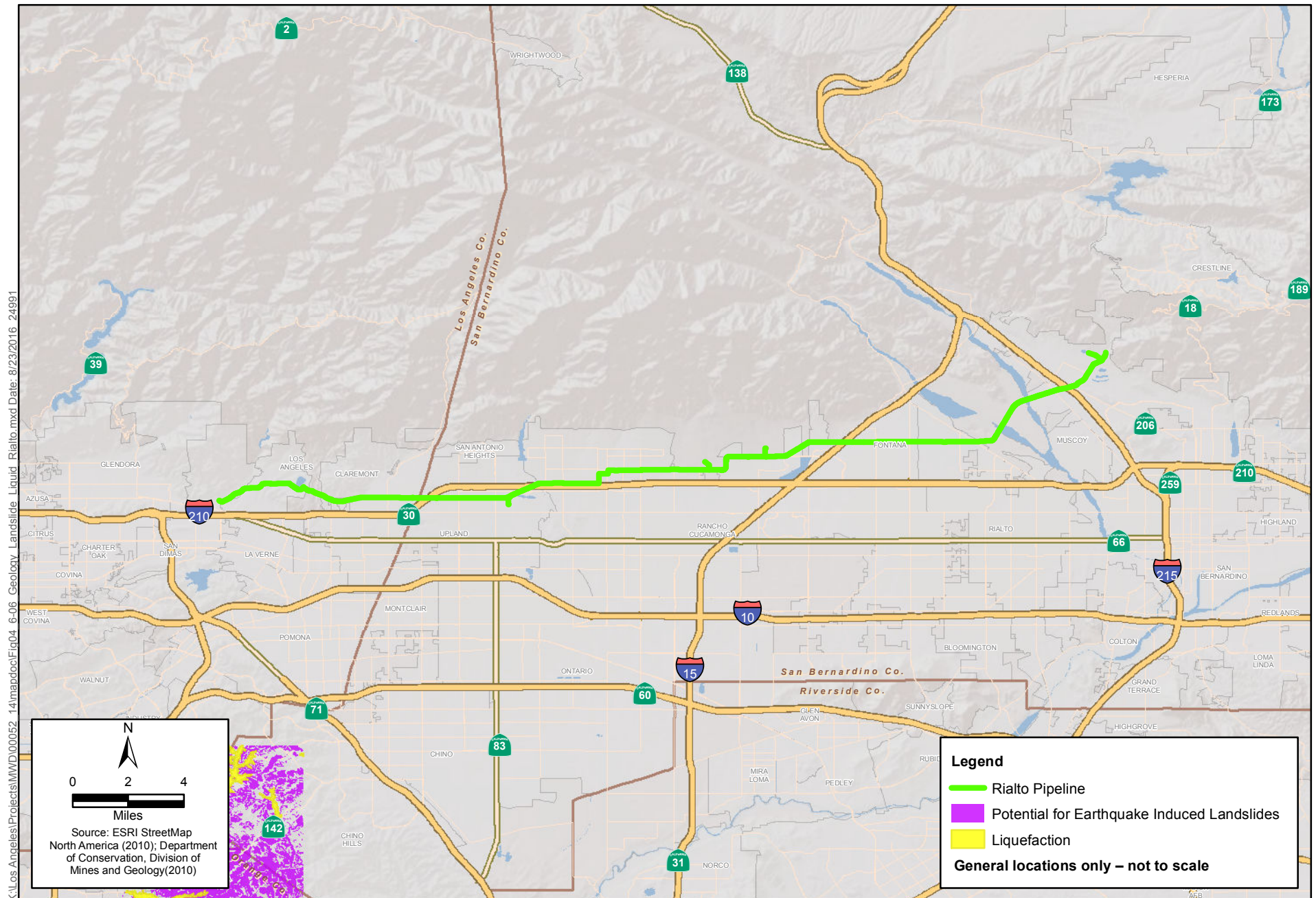


Figure 4.6-6
Regional Landslide/Liquefaction - Rialto Pipeline
Metropolitan PCCP Program

the San Jacinto, San Andreas, and Cucamonga faults. According to the Rialto General Plan, these faults have the potential to generate earthquakes of maximum magnitudes ranging from 6.7 to 8.0 (City of Rialto 2010). The Rialto Pipeline crosses the Alquist-Priolo Earthquake Fault Zone associated with the San Jacinto Fault Zone in the city of Rialto.

City of Fontana

The city of Fontana lies within the Upper Santa Ana River Valley, in an area defined by the steeply rising range front of the eastern San Gabriel Mountains on the north, Lytle Creek Wash on the east, and the Jurupa Mountains on the south. According to the City of Fontana General Plan, the majority of development in the city has occurred on the gently sloping valley floor (City of Fontana 2003). Faults within and near the city of Fontana include the San Jacinto, Cucamonga, San Andreas, Rialto-Colton, and Barrier J faults. An additional series of faults that create the Fontana Seismic Trend are located across the center of the city. The Cucamonga and San Jacinto faults both extend across the northern portion of the city, with the San Andreas fault lying slightly outside the city. This results in a high potential for very strong groundshaking, with some areas of the city susceptible to surface fault rupture. The Rialto Pipeline crosses the Alquist-Priolo Earthquake Fault Zone associated with the Cucamonga fault in the city of Fontana.

City of Rancho Cucamonga

Groundshaking and fault rupture due to earthquake activity pose a threat to the Rancho Cucamonga area. The city is near the San Andreas and San Jacinto faults, both of which are highly active and capable of generating a large earthquake in the near future. The most threatening scenario for the city of Rancho Cucamonga, however, is an earthquake on the Cucamonga fault. According to the Rancho Cucamonga General Plan (City of Rancho Cucamonga 2010), ground displacements from a major earthquake along the Cucamonga fault could be up to 9 feet, with intense groundshaking and extensive losses. The Red Hill fault, comprising three segments and traversing the city in a northeast direction, also presents a risk to the city. Alquist-Priolo Earthquake Fault Zones have been designated for the Cucamonga fault and a portion of the Red Hill fault (the Etiwanda Avenue Fault Scarp). The Rialto Pipeline crosses the Alquist-Priolo Earthquake Fault Zone associated with the Red Hill fault in the city of Rancho Cucamonga.

City of Upland

Similar to the other jurisdiction discussed above, the City of Upland is susceptible to seismic and geologic hazards. A very small region in the northern area of the city is within an Alquist-Priolo Earthquake Fault Zone and is associated with the Sierra Madre Fault Zone.

City of Claremont

Fault lines and hillside terrain are present in the city of Claremont and make the city prone to earthquakes and earthquake-induced landslides. Situated at the base of the San Gabriel Mountains, Claremont is susceptible to seismic groundshaking and surface fault rupture. The Sierra Madre and Cucamonga fault lines meet under northern Claremont, both of which are not expected to rupture for several thousand years. Thus, while the risk of fault rupture is minimal, the threat of groundshaking activity is of real concern to the Claremont region.

City of La Verne

According to the La Verne General Plan (City of La Verne 1999), most potentially active faults cross the community in the northern region of the city, north of Baseline Road. Earthquake activity in this area leaves north La Verne and the Rialto Pipeline susceptible to groundshaking.

City of San Dimas

According to the San Dimas General Plan (City of San Dimas 1991), ground rupture from earthquake activity could result along the surface traces of the Sierra Madre fault, which crosses the northern portion of the city. This fault is designated “potentially active,” though the city is not within an Alquist-Priolo Earthquake Fault Zone. Groundshaking is likely to occur in the city as a result of earthquake activity along the Sierra Madre fault or other nearby faults of significance.

Soil Erosion

No soil erosion issues due to water were specifically identified in the Rialto Pipeline study area, with the exception of San Bernardino County, the city of Claremont, and Los Angeles County. Erosion control is of particular importance in San Bernardino County at the base of the mountain ranges. The Claremont General Plan identifies soil erosion as likely to occur in hillside areas due to the steep grade of the San Gabriel Mountains and the low permeability of the soils. Debris basins have been created in the area to trap sediment, rock, and debris carried by storm flows and protect property from damage. Soil erosion issues for Los Angeles County are described above under Section 4.6.2.2, *Calabasas Feeder*.

Unstable Geology or Soils

City of San Bernardino

According to the City of San Bernardino General Plan, historic and potential ground subsidence areas within the city are typically within thick, poorly consolidated alluvial and marsh deposits of the old artesian north of Loma Linda (City of San Bernardino 2005). Subsidence in this area has the potential to be as great as 5 to 8 feet if unreplenished groundwater is depleted from the Bunker Hill-San Timoteo Basin. However, problems with ground subsidence have not been identified since 1972, when the city began a groundwater recharge program. The Rialto Pipeline is over 9 miles north of Loma Linda and is outside the potential subsidence areas mapped in the city’s General Plan.

The city’s General Plan also identifies the generalized landslide susceptibility in the city to be low to moderate. Potentially hazardous zones in the city include those with low relief with low to moderate susceptibility that may contain small-scale surficial soil slips, debris flow, and mudflows on steep slopes; or areas of moderate and high relief with low to moderate susceptibility that may contain small to large rotational slides, debris slides, and combinations of surficial slides and flows. According to Figure S-6 of the City of San Bernardino General Plan (City of San Bernardino 2005), the Rialto Pipeline crosses areas in the city identified with low to moderate susceptibility to landslides.

San Bernardino County

According to the San Bernardino County General Plan, two types of subsidence are of major concern to the county: tectonic subsidence and subsidence caused by groundwater withdrawal (County of

San Bernardino 2014). As mentioned above, tectonic subsidence is primarily of concern during large earthquake events, when instantaneous subsidence of many feet could occur.

Within the county, the San Gabriel, San Bernardino, Little San Bernardino, and Pinto mountains compose a portion of the Transverse Ranges. The steep slopes, narrow ridges, steep-walled incised canyons, valleys, and major faults provide a setting that is capable of producing landslides and mudslides. According to the county General Plan, the Wrightwood landslide area is of critical concern, given that high precipitation induces mudflows and mudslides in the area. Steep fronts occurring in the eastern San Gabriel and southwestern San Bernardino mountains may also present a stability hazard. As mentioned above, Rialto Pipeline traverses these areas at the base of the San Gabriel and San Bernardino mountains.

Subsidence caused by groundwater withdrawal is of concern in the alluvial valleys of San Bernardino County, particularly the southwestern portion of the county, where subsidence from 0.8 to 5.8 feet is reportedly possible (County of San Bernardino 2014). Subsidence is anticipated to continue to occur in desert basins as groundwater drafts increase with development.

City of Rialto

According to the Rialto General Plan, an area in the northeast corner of the city, southeast of the Rialto Pipeline study area, is moderately susceptible to liquefaction. Young, unconsolidated soils combined with historic artesian well activity has made this area susceptible to liquefaction, along with its location adjacent to the San Jacinto fault, as mentioned above.

City of Fontana

The northern and southern edges of the city of Fontana contain hillsides that are vulnerable to slope instability due to the fractured, crushed, and weathered condition of the bedrock, as well as the steep terrain (City of Fontana 2003). According to the city's General Plan, the probability of large bedrock landslides occurring is relatively low, with very few historic landslides recorded in the area. Smaller-scale instability may arise as a result of slides, slumps, soil slips, debris flows, and rockfalls. Development at the base of the San Gabriel and Jurupa mountains may be susceptible to runoff, sedimentation, and small slope failures, and may be at risk for destructive debris flows under the right conditions. An area to the north of the Rialto Pipeline is mapped by the City of Fontana General Plan as steep to very steep slopes and susceptible to rockfalls, small slides, and slumps.

In addition, groundwater may occur within 40 feet of the surface in a portion of the Lytle Creek channel, creating the potential for liquefaction in the area. Other areas of the city may also be susceptible to liquefaction due to seasonal saturation of near-surface sediments (City of Fontana 2003). The Rialto Pipeline crosses an area identified as low liquefaction susceptibility in the city of Fontana.

City of Rancho Cucamonga

Due to its proximity to the San Gabriel Mountains, Rancho Cucamonga is susceptible to geologic hazards including debris flows and falling rocks due to erosion of the mountain slopes, concentration of precipitation from storms, and rapid stream flow from mountain streams, which increase the potential for land subsidence in certain soil conditions. The northern portion of the city is most susceptible to these hazards. Slope instability on the slopes of the San Gabriel Mountains is likely to cause debris flows through city drainages, including Cucamonga Creek, Demens Canyon,

Deer Canyon, Day Canyon, and East Etiwanda Creek. The Rialto Pipeline study area occurs just south of these areas in an area noted as “slopes less than 10%” where no special hillside recommendations are required for development (City of Rancho Cucamonga 2010).

City of Upland

No issues with instability of soils or geology were identified by the City of Upland within its jurisdiction.

City of Claremont

Non-seismically induced landslides have the potential to occur within the city of Claremont in hillside areas. According to the city’s Safety and Noise Element, past landslides have involved only minor inconveniences without extensive damage (City of Claremont 2009). However, heavy rainfall or other changes in conditions can increase susceptibility for slope instability.

City of La Verne

No issues with instability of soils or geology applicable to the Rialto Pipeline study area were identified by the City of La Verne within its jurisdiction.

City of San Dimas

No issues with instability of soils or geology applicable to the Rialto Pipeline study area were identified by the City of San Dimas within its jurisdiction.

Expansive Soils

No expansive soils were identified in the Rialto Pipeline study area, with the exception of the city of Claremont. The Claremont General Plan notes that collapsible and expansive soils lie under most of the City. Expansive soils in the hillsides are prone to collapse during dry seasons, while expansive soils in the urban area are prone to expand during the wet season (City of Claremont 2009).

4.6.2.4 Second Lower Feeder

As shown on Figures 4.6-7 and 4.6-8, the Second Lower Feeder is in a seismically active area and susceptible to strong groundshaking, seismically induced landslides, and liquefaction as a result of earthquakes. Table 4.6-6 summarizes the Alquist-Priolo Earthquake Fault Zones nearest the jurisdictions in the Second Lower Feeder study area. Table 4.6-7 summarizes approximately how many acres of the Second Lower Feeder study area overlap with seismic hazards identified in each jurisdiction within the study area.

Table 4.6-6. Estimated Distance to Nearest Alquist-Priolo Earthquake Fault Zone for Jurisdictions in the Second Lower Feeder Study Area

Jurisdiction	Distance to Nearest Alquist-Priolo Earthquake Fault Zone (miles)	Nearest Alquist-Priolo Earthquake Fault Zone
City of Yorba Linda	0.2	Elsinore
City of Brea	0.5	Elsinore
City of Placentia	1.0	Elsinore

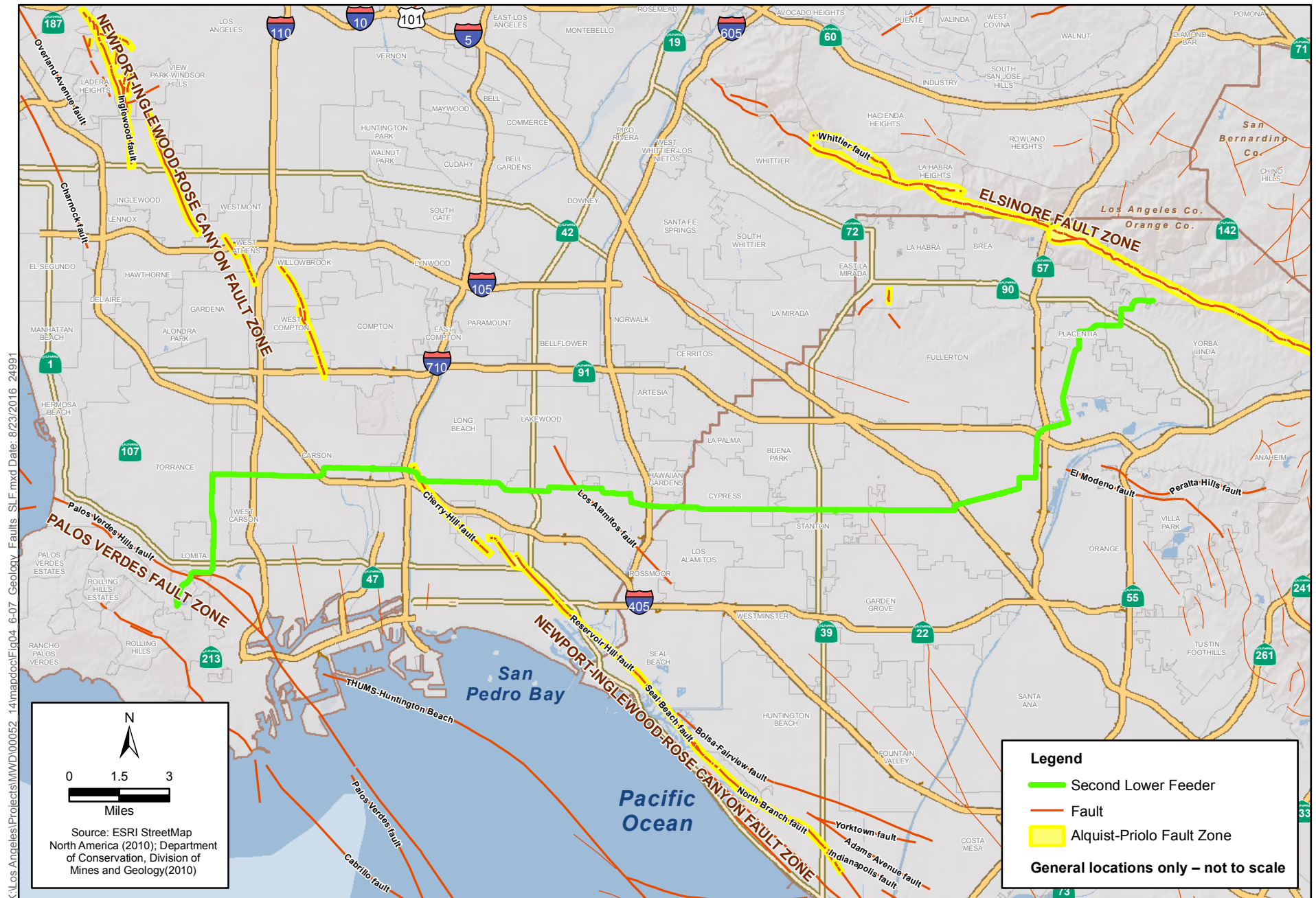


Figure 4.6-7
Regional Fault Map – Second Lower Feeder
Metropolitan PCCP Program

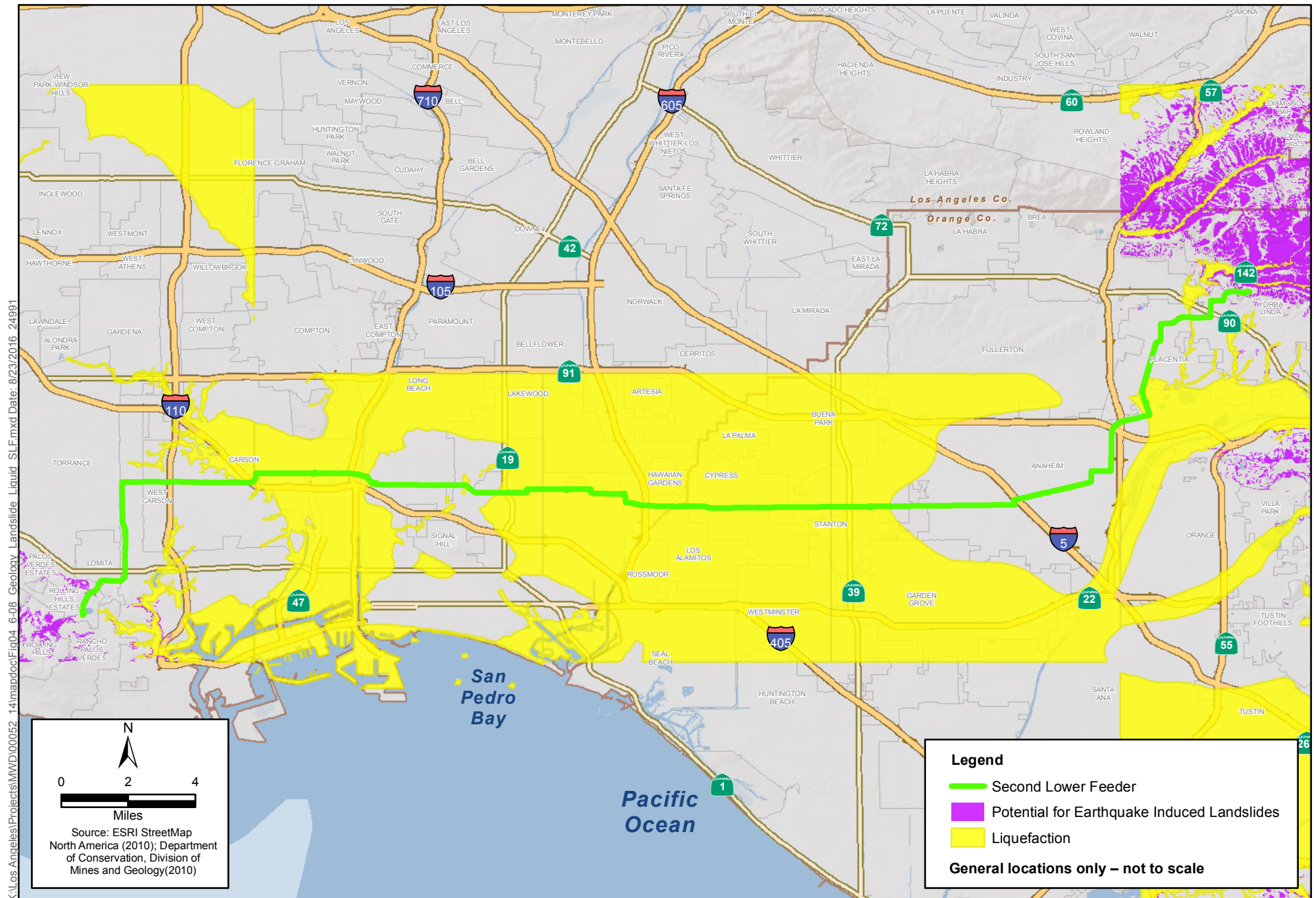


Figure 4.6-8
Regional Landslide/Liquefaction - Second Lower Feeder
Metropolitan PCCP Program

Jurisdiction	Distance to Nearest Alquist-Priolo Earthquake Fault Zone (miles)	Nearest Alquist-Priolo Earthquake Fault Zone
City of Anaheim	4.0	Elsinore
Orange County	0.0	Elsinore
City of Stanton	6.1	Newport-Inglewood
City of Buena Park	5.5	Newport-Inglewood
City of Cypress	4.2	Newport-Inglewood
City of Hawaiian Gardens	4.2	Newport-Inglewood
City of Los Alamitos	3.6	Newport-Inglewood
City of Lakewood	1.0	Newport-Inglewood
City of Long Beach	0.0	Newport-Inglewood
City of Carson	0.4	Newport-Inglewood
City of West Carson	3.1	Newport-Inglewood
Los Angeles County	2.8	Newport-Inglewood
City of Los Angeles	1.2	Newport-Inglewood
City of Torrance	4.1	Newport-Inglewood
City of Lomita	5.5	Newport-Inglewood
City of Rolling Hills Estates	7.0	Newport-Inglewood
City of Rolling Hills	8.2	Newport-Inglewood
City of Rancho Palos Verdes	7.4	Newport-Inglewood
Notes: 0.0 = the Second Lower Feeder crosses the Alquist-Priolo Earthquake Fault Zone within that jurisdiction.		

Table 4.6-7. Estimated Area of Overlap between the Second Lower Feeder Study Area and Identified Seismic Hazard Areas

Jurisdiction	Earthquake-Induced Landslide Overlap (acres)	Liquefaction Overlap (acres)
City of Yorba Linda	66.4	9.8
City of Brea	7.0	50.27
City of Placentia	-	201.3
City of Anaheim	-	1,589.1
Orange County	119.8	26.3
City of Stanton	-	379.41
City of Buena Park	-	294.6
City of Cypress	-	1,434.6
City of Hawaiian Gardens	-	57.3
City of Los Alamitos	-	221.8
City of Lakewood	-	20.0
City of Long Beach	-	3,488.9
City of Carson	-	1,597.6
City of West Carson	-	13.2
Los Angeles County	-	95.1

Jurisdiction	Earthquake-Induced Landslide Overlap (acres)	Liquefaction Overlap (acres)
City of Los Angeles	-	29.3
City of Torrance	3.9	-
City of Lomita	1.2	-
City of Rolling Hills Estates	59.2	0.8
City of Rolling Hills	0.6	-
City of Rancho Palos Verdes	6.7	1.8

The Second Lower Feeder crosses the following jurisdictions, which are discussed above and thus are not discussed in detail below: the city of Yorba Linda, the city of Anaheim, Orange County, Los Angeles County, and the city of Los Angeles.

Seismic Environment

City of Brea

The city of Brea lies within one of the most potentially seismically active areas of Southern California, adjacent to the Whittier fault and atop the Elysian Park Thrust fault. Both of these fault zones have the potential to generate moderate to large earthquakes that could cause substantial property damage and possibly loss of life. The Whittier fault is active and cuts across Brea diagonally (northwest/southeast orientation). The Whittier fault is an Alquist-Priolo Earthquake Fault Zone within the city limits and, accordingly, surface fault rupture hazard in Brea is high within the boundaries of this zone. Brea is also directly on the Elysian Park Thrust fault and 33 miles from the San Andreas fault. The most severe groundshaking would result from earthquake activity on the Whittier fault zone. The Elysian Park Thrust fault, a buried fault approximately 6 to 10 miles below the ground surface, is considered to be more threatening, with a greater potential to cause a large magnitude earthquake (City of Brea 2003).

In addition, according to the City of Brea General Plan (City of Brea 2003), slope stability is a significant concern in the natural slopes of the Carbon Canyon area. There is some potential for erosion and slope instability related to stream activity along major canyons and drainage courses. Steep topography, fractured and unconsolidated bedrock conditions, expansive soils, and high erosion potential make many hillside areas highly unstable. Landslides are typical on moderate to steep slopes in Brea and the potential for future landslides is high (City of Brea 2003).

Liquefaction hazards are significant along stream channels in the city of Brea due to the porous nature and high water content of the soil. These areas include Tonner Canyon Creek, Brea Canyon, and areas around the Carbon Canyon Dam (City of Brea 2003).

City of Placentia

According to the Seismic Safety Element of the Placentia General Plan (City of Placentia 1975), the majority of the city is relatively free of serious or significant seismic problems. Seismic groundshaking is expected to be moderate throughout the city, and primarily influenced by the San Andreas, San Jacinto, San Fernando-Sierra Madre, and Newport-Inglewood fault zones. The Whittier fault occurs approximately 1,000 feet north of the city and is not expected to have any direct impact

on Placentia. The potential for fault rupture in the city is low in most areas, and potentially moderate along the Norwalk fault and in anticlinal areas.

In addition, the potential for liquefaction is low. Any potential for slope instability is limited to the hillside areas northeast of Valencia Avenue and Bastanchury Road, and to the southeast of Linda Vista Avenue (Placentia General Plan 1975).

City of Stanton

There are no Alquist-Priolo Earthquake Fault Zones within the city of Stanton; however, there are several potentially active faults in proximity to the city. Potentially active faults close to the city are the Newport-Inglewood–Rose Canyon fault, the Whittier section of the Elsinore fault, and the Norwalk, Elysian Park, and San Andreas faults. Ground rupture as a result of earthquakes is unlikely to occur within Stanton because no faults have been identified within the city’s boundaries (City of Stanton 2008). The impacts of earthquakes on the city depend upon the fault from which the earthquake occurred, fault location, distance from the city, and magnitude of the earthquake. The combination of these factors would determine the degree of shaking experienced by the city.

According to the California Department of Conservation, Division of Mines and Geology (Los Alamos 7.5-Minute Quadrangle [March 25, 1999] and Anaheim and Newport Beach 7.5-Minute Quadrangle [April 15, 1998]), the entire city of Stanton is in a liquefaction hazard zone (City of Stanton 2008). The same maps show that the city does not have the potential for landslides.

City of Buena Park

According to the Safety Element of the Buena Park General Plan (City of Buena Park 2010), the city is in a seismically active region, with a number of active faults close by. The Norwalk fault traverses the northern and northeastern portions of the city, while the Los Coyotes fault lies near the city’s northern boundary. Additionally, the Whittier-Elsinore, Newport-Inglewood, and Los Alamos faults all lie within 5 miles of the city. The Norwalk fault—the only fault within the city—is not a state-designated Alquist-Priolo Earthquake Fault Zone.

Although the extent of groundshaking would depend on the magnitude of the earthquake and the city’s distance from the epicenter, it is the Norwalk fault that has the greatest potential of causing significant groundshaking. The Whittier-Elsinore and Newport-Inglewood faults could also result in significant groundshaking. According to the city’s General Plan, the northern portion of Buena Park is most susceptible to seismic groundshaking.

The Buena Park General Plan identifies liquefaction as a seismic activity of concern for the city. According to the Safety Element of the Buena Park General Plan, the California Geological Survey Quadrangles consider the city to be highly susceptible to liquefaction.

City of Cypress

According to the City of Cypress General Plan (City of Cypress 2001), the city is not within an Alquist-Priolo Earthquake Fault Zone. While no potentially active faults are within the city, the entire Southern California region is considered to be seismically active, and thus the city is at risk to seismic groundshaking. The Newport-Inglewood, Norwalk, El Modeno, Whittier-Elsinore, and Elysian Park faults are all close to the city. The San Andreas and San Jacinto faults are farther from the city, but have the potential to deliver larger magnitude earthquakes than the faults near the city.

Surface rupture from earthquake activity is unlikely to occur in the city of Cypress because no faults are known to lie within its boundaries.

According to the City of Cypress General Plan (City of Cypress 2001), the soils underlying Cypress include alluvium deposits that have the potential to become unstable during intense groundshaking. Instability in the form of liquefaction may occur in some portions of Cypress due to the city's granular sandy soil with high water content.

City of Hawaiian Gardens

Hawaiian Gardens is near the Norwalk fault, 4 miles to the northeast, and the Newport-Inglewood fault, 5 miles to the southwest. The Los Alamitos fault is also approximately 2 miles from the city. Although there are no known active earthquake faults within the city, the potential for strong earthquake groundshaking is high because of the many nearby active faults. (City of Hawaiian Gardens 2010).

Mass movements of loose rock, soil, and water-saturated and weathered materials are major effects of earthquakes. Steep slopes commonly favor gravitational movements, and landslides sometimes occur. However, no earthquake-induced landslide zone has been designated in the area. In addition, the city of Hawaiian Gardens has relatively flat topography (City of Hawaiian Gardens 2010).

The entire city of Hawaiian Gardens is in a liquefaction zone, according to the California Geological Survey (City of Hawaiian Gardens 2010). The liquefaction zone covers almost the entire region in the Los Alamitos Quadrangle because of the shallow groundwater table and nearly universal distribution of young sandy alluvial deposits.

City of Los Alamitos

According to the Public Facilities and Safety Element of the 2015 Los Alamitos General Plan (City of Los Alamitos 2015), there are no active or potentially active earthquake faults in the city of Los Alamitos. However, as mentioned above, the entire Southern California region is considered to be seismically active, and thus the city is susceptible to seismic groundshaking. The faults most capable of generating destructive groundshaking in Los Alamitos include the El Modeno, Elysian Park, Newport-Inglewood, Norwalk, and Whittier-Elsinore faults. The Newport-Inglewood fault zone is closest to the city and has been the source of devastating earthquakes in the past. The potential for surface rupture in the Los Alamitos area is unlikely because faults have not been identified within the boundaries of the city.

According to the Los Alamitos General Plan (City of Los Alamitos 2015), the city is underlain by alluvium deposits, which can become unstable during intense groundshaking. Due to the potential for seismic activity to generate groundshaking in the city, there exists the potential for liquefaction. In addition, in areas of the city with generally cohesionless soils (sand) and high ground water, there is also a potential for liquefaction as a result of groundshaking in these areas.

City of Long Beach

The City of Long Beach General Plan Seismic Safety Element (City of Long Beach 1988) identifies the Newport-Inglewood Fault Zone as a possible seismic hazard for the city. Faults that pass within city boundaries as well as faults outside the city capable of generating large earthquakes are considered as potential sources of groundshaking. However, the Newport-Inglewood Fault Zone is of particular

concern for the city, given that its faults lie within city boundaries. The Palos Verdes fault is also of concern because it could produce severe groundshaking within the city.

According to the General Plan (City of Long Beach 1988), the most likely place for surface fault rupture to occur is along major active faults in the region, including those associated with the Newport-Inglewood Fault Zone. Although the damage from surface fault rupture is likely to be significant, it would be less damaging than groundshaking associated with the seismic event.

The potential for liquefaction in the city of Long Beach depends on the extent of seismic groundshaking, groundwater conditions, and subsurface soil conditions in the area. There are areas identified as having low, moderate, and significant potential for liquefaction throughout the city.

City of Lakewood

According to the Safety Element of the City of Lakewood Comprehensive General Plan (City of Lakewood 1996), multiple known active or potentially active faults lie within or in the vicinity of Lakewood. The two known active or potentially active faults closest to the city are the Los Alamitos fault and the Newport-Inglewood Fault Zone, both of which present a risk of damage in the city.

Liquefaction is a potential seismic hazard in the city of Lakewood. There are areas designated as liquefiable and potentially liquefiable throughout the city.

City of Carson

The city of Carson is in a seismically active area, with numerous faults lying in the vicinity of the city. The Newport-Inglewood, Avalon-Compton, San Andreas, Palos Verdes, Whittier (or Elysian Park), and Santa Monica Fault Zones are all capable of generating earthquakes that could affect the city. Any one of these faults could generate detectable groundshaking within the city of Carson in the event of an earthquake. Due to the composition of soils in the area, the city is considered one of the most severe shock areas in the Los Angeles County area (City of Carson 2006). Surface fault rupture has the potential to occur within city limits as a result of seismic activity along the Avalon-Compton structural zone. However, this is not considered to be a significant potential hazard (City of Carson 1981).

Seismically induced ground failure, including liquefaction, is a threat to the city of Carson (City of Carson 1981). Existing conditions in the city make the area susceptible to liquefaction, particularly as a result of earthquake activity along the Newport-Inglewood Fault Zone. A significant portion of the city has been designated as a potential liquefaction area.

City of Torrance

The city of Torrance is susceptible to groundshaking caused by earthquakes from nearby faults. According to the City of Torrance Safety Element (City of Torrance 2010), the highest risks are from the Palos Verdes Fault Zone, the Puente Hills fault, the Newport-Inglewood Fault Zone, the Elysian Park Fault Zone, the Malibu Coast-Santa Monica-Hollywood Fault Zone, and the Whittier Fault Zone. In addition to groundshaking, the city is susceptible to fault rupture. As of 2009, no Alquist-Priolo Earthquake Fault Zones were designated within the city of Torrance limits. However, if the Palos Verdes fault ever becomes zoned as active, the southern portion of Torrance would be in an Alquist-Priolo Earthquake Fault Zone.

According to the city's Safety Element (City of Torrance 2010), some areas of Torrance have the potential for earthquake-induced landslides. These areas mainly occur in the southern portion of the city near the borders with the cities of Palos Verdes Estates and Rolling Hills Estates and unincorporated Los Angeles County.

City of Lomita

The city of Lomita is within seismically active Southern California, and bounded by two of the most active faults in the region. According to the City of Lomita General Plan (City of Lomita 1998), the Palos Verdes fault on the south and the Newport-Inglewood fault to the northeast both generate a potential for seismic groundshaking and surface fault rupture within the city. The Torrance-Wilmington fault, in northeast Lomita, is also capable of generating groundshaking earthquakes in the city. Surface rupture may occur as a result of an earthquake along one of these faults. No Alquist-Priolo Special Studies Zones have been recorded within the city of Lomita. The nearest Alquist-Priolo Special Studies Zone is associated with the Newport-Inglewood fault, approximately 5 miles east of the city.

Strong groundshaking may occur as a result of earthquake activity in the city of Lomita. Faults including the Palos Verdes, Newport-Inglewood, Torrance-Wilmington, Cabrillo, Redondo Canyon, and San Pedro Basin faults are all within or in the vicinity of the city. The Newport-Inglewood and Palos Verdes faults are the most likely to cause groundshaking events in the city, and thus are the most likely to trigger liquefaction in the area (City of Lomita 1998).

Although numerous landslides have occurred in adjacent areas, the City of Lomita General Plan (City of Lomita 1998) identifies no definite or probable landslide hazards within the city; however, hill slopes may be susceptible to debris flows and mudflows in the event of a heavy rainfall.

City of Rolling Hills Estates

According to the Public Safety Element of the City of Rolling Hills Estates General Plan (City of Rolling Hills Estates 1992), the closest active faults to the city are the Newport-Inglewood, Palos Verdes, and Cabrillo faults. Other faults in the area that have the potential for groundshaking in the city include the Redondo Canyon, Santa Monica-Malibu Coast, Whittier, and Torrance-Wilmington fault systems. These faults pose a seismic risk to the city, which could result in groundshaking and other seismic-induced hazards.

No Alquist-Priolo Special Studies Zones have been identified in the city of Rolling Hills Estates (Alquist-Priolo Special Studies Zone Act 1972). The potential for surface fault rupture from the Palos Verdes or Cabrillo fault segments is credible. Fault rupture from other faults in the area is of less concern for the city.

Secondary earthquake hazards such as liquefaction and landsliding are of some concern for the city of Rolling Hills Estates. Most of the city is underlain by consolidated bedrock and thus is not susceptible to liquefaction. The exception includes the Chandler quarry and some canyons, which have been filled with uncompacted artificial or hydraulic fill that may settle during strong groundshaking. Small landslides in the canyon areas and one area northeast of the Peninsula Center may also occur. This area, the Silver Spur Landslide Complex, is postulated as a pull-apart scarp. Additionally, out-of-slope road cuts including Crenshaw Boulevard along Agua Negra Canyon, Palos Verdes Drive between George F. Canyon to the east and Silver Spur Road to the west, and some sections of Hawthorne Boulevard may cause rockfall or landslide threats in the event of seismic

shaking. The San Pedro Formation in the northern flank of the city is also highly at risk of landslide, particularly in the event of heavy rainfall.

City of Rolling Hills

The major seismic sources that could produce significant groundshaking in the city of Rolling Hills include the Palos Verdes, Newport-Inglewood, Whittier, Santa Monica/ Malibu Coast, and the Torrance-Wilmington faults. The Palos Verdes fault is potentially capable of producing the most intense groundshaking in Rolling Hills due to its proximity (approximately 1 mile) (City of Rolling Hills 1990).

According to the City of Rolling Hills General Plan, the city is susceptible to shallow earthquake-induced landslides. The most susceptible slopes for rockfalls would be where the bedding is dipping out of slope. If saturated hillslope conditions are extraordinary, the potential for damage caused by debris flows and sudden reactivation of existing deep-seated landslides will increase accordingly. Although Rolling Hills is subject to moderate to high seismic shaking, the general lack of thick, loose, sandy soils and saturated alluvial deposits make the potential for liquefaction low to very low (City of Rolling Hills 1990).

City of Rancho Palos Verdes

Similar to the other cities in the region, Rancho Palos Verdes is in a seismically active area and relatively close to several of the many active and potentially active faults in Southern California. However, there are no Alquist-Priolo Earthquake Fault Zones within the city (City of Rancho Palos Verdes 1975). The Palos Verdes fault zone, which traverses the extreme northeastern corner of the city, is a known active or potentially active fault that could be the site of ground rupture resulting from movement on the fault (City of Rancho Palos Verdes 1975).

Landslides in the city of Rancho Palos Verdes can be grouped into three major landslide systems: the Portuguese Bend, the South Shores, and the Silver Spur system. Historically, the most prominent landslides have occurred within the approximately 900-acre Ancient Portuguese Bend Landslide complex and surrounding areas (City of Rancho Palos Verdes 1975). In general, these landslides are the result of inclined bedding to the south that becomes unsupported due to erosion from beach waves and intrusion from water runoff.

The potential for liquefaction in the area is very low, because the local soil deposits are relatively thin and cohesive. Liquefaction is not considered to be a significant hazard in the city.

Soil Erosion

No soil erosion issues were identified for the Second Lower Feeder study area, with the exception of Los Angeles County, which is discussed above in Section 4.6.2.2, *Calabasas Feeder*, and the cities of Brea and Lomita.

For the city of Brea, as discussed above, stability of natural slopes in the Carbon Canyon area is a significant concern. Most properties within Carbon Canyon are characterized by steep, rugged hillside terrain subject to landslides and soil erosion. Areas adjacent to stream beds and drainage channels tend to exhibit liquefaction conditions and ground instability (City of Brea 2003).

The City of Lomita recognizes that hill slopes are extremely susceptible to erosion in the event of heavy rainfall if not properly planted (City of Lomita General Plan). However, the city grading codes include design guidelines to reduce the hazard of erosion due to surficial sliding.

Unstable Geology or Soils

Other than the earthquake-related landslide and liquefaction hazards discussed above, no other unstable geology or soils hazards were identified within the Second Lower Feeder study area, with the exception of the cities of Yorba Linda, Anaheim, Los Alamitos, and Rolling Hills Estates.

The Second Lower Feeder study area overlaps with unstable geology or soil conditions in the cities of Yorba Linda and Anaheim, which are discussed in Section 4.6.2.1. The potential for landslides in Los Alamitos is low, given the flat topography of the community. However, according to the Los Alamitos General Plan (City of Los Alamitos 2015), some landslide activity may occur along drainage channels and areas with steep banks or slopes.

The majority of Rolling Hills Estates is underlain by shale and siltstone units, which have planes of weakness conducive to landslides and slope instability. Landslides are not numerous in the city, although small landslides in the canyon areas may exist. Furthermore, one postulated landslide complex northeast of the Peninsula Center may exist. There is also conjecture that the northwest-southeast trending valley along Silver Spur Road could be a pull-apart scarp within a postulated Silver Spur landslide complex (City of Rolling Hills Estates 1992). Storm-induced landsliding in the event of heavy rainfall may occur within the city, particularly in the area of the San Pedro Formation.

Expansive Soils

No expansive soils were identified in the Second Lower Feeder study area, with the exception of where the study area crosses unincorporated Orange County, and the cities of Buena Park, Lomita, and Rancho Palos Verdes.

The expansive soils in unincorporated Orange County are discussed in Section 4.6.2.1. According to the Safety Element of the Buena Park General Plan (City of Buena Park 2010), moderately expansive soil potential occurs in the west-central and southern portions of the city. Additionally, some soils in the city of Lomita may be susceptible to significant consolidation and hydrocompaction due to their composition. Soils in central and southern Lomita generally have a high shrink-swell potential according to geologic and engineering reports done for the city, and thus have the potential to expand when wet (City of Lomita 1998).

According to the City of Rancho Palos Verde's General Plan, the entire city is underlain by various combinations of Diablo and Altamont soils, which produce a dark grey, neutral clay. All of these combinations have a high shrink-swell potential. However, the City of Rancho Palos Verde's General Plan also states that while these soils are highly expansive, they should not be a factor in precluding development due to modern soil engineering procedures coupled with present-day foundation designs.

4.6.2.5 Sepulveda Feeder

As shown on Figures 4.6-9 and 4.6-10, the Sepulveda Feeder is in a seismically active area and susceptible to strong groundshaking, seismically induced landslides, and liquefaction as a result of earthquakes. Table 4.6-8 summarizes the Alquist-Priolo Earthquake Fault Zones nearest the

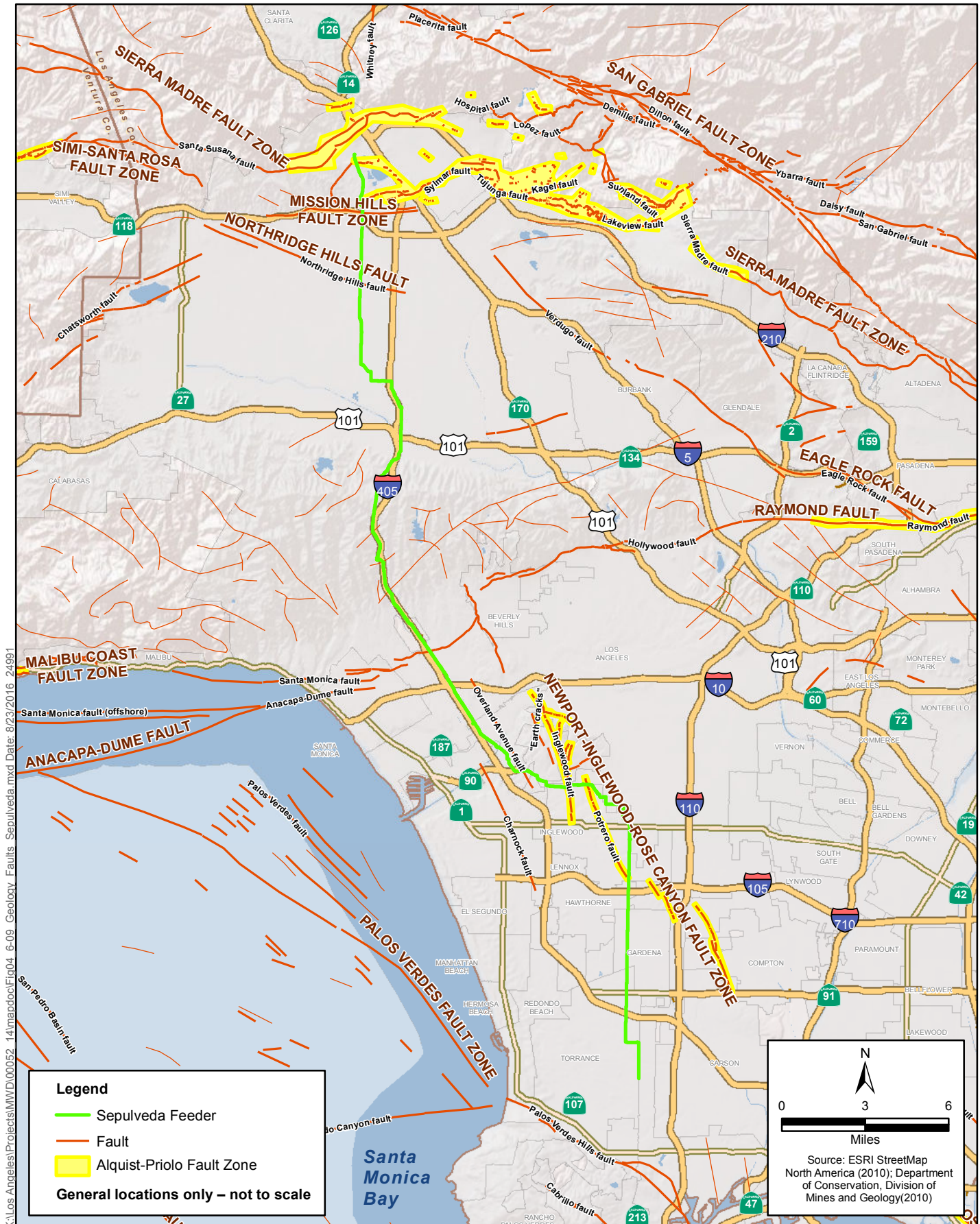


Figure 4.6-9
Regional Fault Map – Sepulveda Feeder
Metropolitan PCCP Program

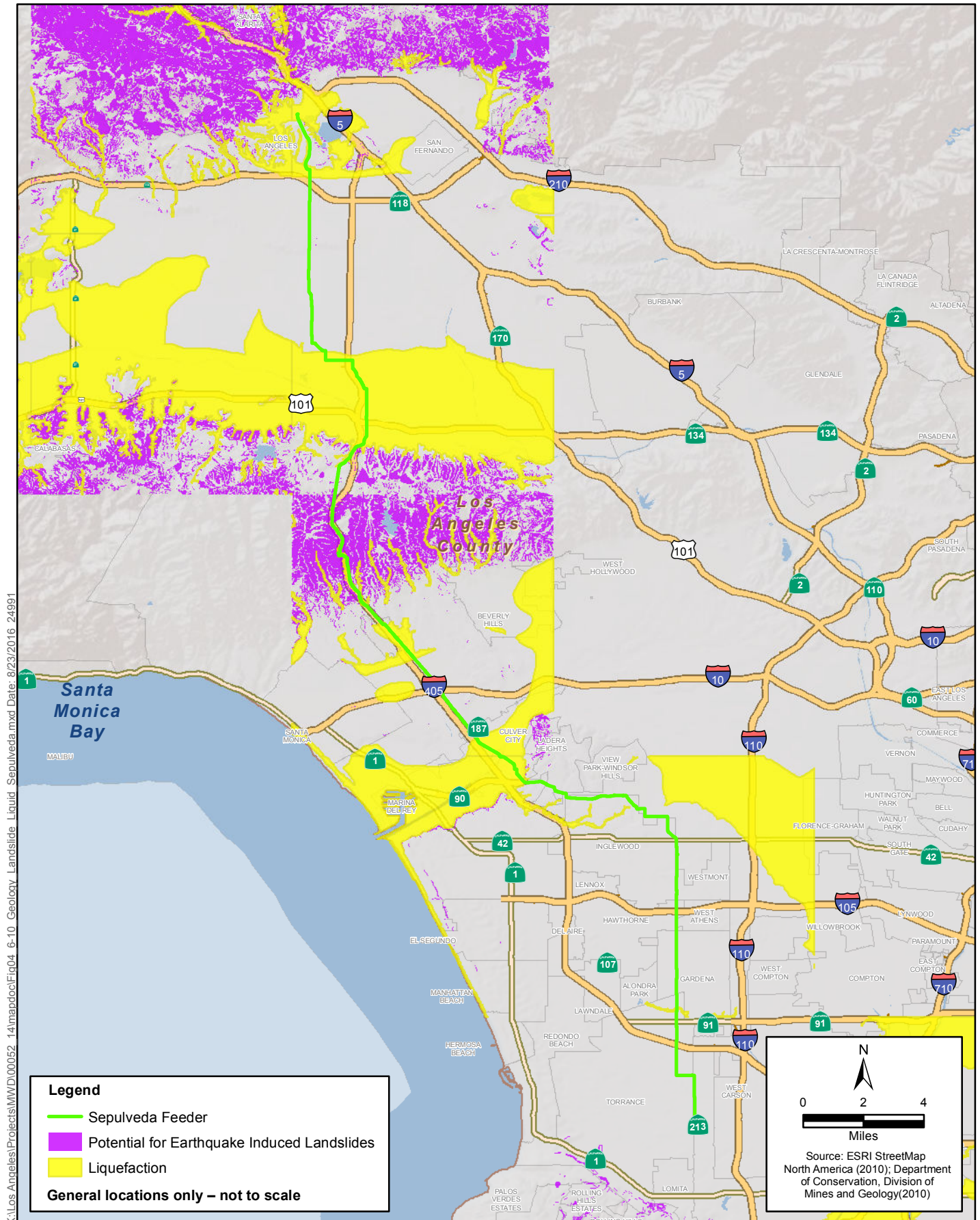


Figure 4.6-10
Regional Landslide/Liquefaction - Sepulveda Feeder
Metropolitan PCCP Program

jurisdictions traversed by the Sepulveda Feeder study area. Table 4.6-9 summarizes approximately how many acres of the Sepulveda Feeder study area overlap with seismic hazards identified in each jurisdiction within the study area.

Table 4.6-8. Estimated Distance to Nearest Alquist-Priolo Earthquake Fault Zone for Jurisdictions in the Sepulveda Feeder Study Area

Jurisdiction	Distance to Nearest Alquist-Priolo Earthquake Fault Zone (miles)	Nearest Alquist-Priolo Earthquake Fault Zone
City of Los Angeles	0.0	Newport-Inglewood
Los Angeles County	1.3	Newport-Inglewood
Culver City	0.9	Newport-Inglewood
City of Inglewood	0.0	Newport-Inglewood
City of Hawthorne	0.0	Newport-Inglewood
City of Gardena	0.7	Newport-Inglewood
City of Torrance	2.1	Newport-Inglewood
Notes: 0.0 = the Sepulveda Feeder study area crosses the Alquist-Priolo Earthquake Fault Zone within that jurisdiction.		

Table 4.6-9. Estimated Area of Overlap between the Sepulveda Feeder Study Area and Identified Seismic Hazard Areas

Jurisdiction	Earthquake-Induced Landslide Overlap (acres)	Liquefaction Overlap (acres)
City of Los Angeles	1,722.6	4,062.6
Los Angeles County	5.2	227.0
Culver City	7.6	952.3
City of Inglewood	-	16.4
City of Hawthorne	-	-
City of Gardena	-	10.0
City of Torrance	-	44.2

The Sepulveda Feeder crosses the following jurisdictions, which are discussed above and thus are not discussed in detail below: city of Los Angeles, Los Angeles County, and the city of Torrance.

Seismic Environment

Culver City

According to the Culver City Seismic Safety Element of the Revised General Plan (Culver City 1996), three major geologic-seismic risks exist within the city: potential future fault movement, the probability of continued subsidence in the Baldwin Hills, and instability resulting from development of hillside areas, particularly those coincident with the Inglewood Oil Field. Both the Inglewood Oil Field and Baldwin Hills are east of and outside the portion of the Sepulveda Feeder study area within Culver City.

The Inglewood Fault Zone is the most likely fault to experience surface displacement in the near term and is the major fault running through the city. The San Andreas Fault Zone may also cause seismic groundshaking in the Culver City area, should an earthquake occur.

Earthquake-induced landslides and liquefaction are also geologic hazards in Culver City. Two major zones have been identified in the city for landslide potential and include the Baldwin Hills and Inglewood Oil Field area and the western portion of the city where hill slopes are flatter and the underlying sedimentary units have shallow dips. In this area, natural slope stability is high, but problematic conditions would generally be restricted to the steeper portions of the natural drainages and to over-steepened, man-made slopes. Additionally, liquefaction hazard areas are generally confined to the floodplain and adjacent areas surrounding Ballona Creek.

City of Inglewood

According to the Safety Element of the Inglewood General Plan (City of Inglewood 1995), the city is dominated by the Newport-Inglewood Fault Zone. This fault zone has been responsible for extensive damage to nearby cities in the relatively recent past. The Potrero fault (a major local component of the Newport-Inglewood fault) is classified as an Alquist-Priolo Study Zone, according to the Inglewood Safety Element. The Seismic Safety Element also notes that major water lines and facilities could be significantly damaged should seismic ground rupture occur.

The potential for liquefaction in the city has been reduced due to water wells lowering the area's water table. According to the Safety Element of the Inglewood General Plan (City of Inglewood 1995), all of Inglewood is classified as having either very low susceptibility or, in the most southern portion of the city, low susceptibility to liquefaction. The one exception is the former water course of Centinela Creek, which has a very high susceptibility to liquefaction. The Sepulveda Feeder crosses mapped liquefaction hazard areas in the northern portion of the city.

City of Hawthorne

The city of Hawthorne is susceptible to seismic activity generated by the Newport-Inglewood and Charnock faults. The Newport-Inglewood fault is considered active, while the Charnock fault is considered potentially active. No Alquist-Priolo Special Studies Zones have been designated within the city of Hawthorne (City of Hawthorne General Plan 1989). The Safety Element of the general plan identifies the potential for groundshaking as generally low. Liquefaction is not an anticipated issue within the city.

City of Gardena

Similar to the other jurisdictions described above, Gardena is subject to risks associated with earthquake activity. The San Jacinto, San Andreas, Newport-Inglewood, Palos Verdes, Whittier-Elsinore, Sierra Madre-Cucamonga, San Fernando, and Raymond Hill fault systems all have the potential to affect the city. An Alquist-Priolo Earthquake Fault Zone is in the northeastern portion of Gardena and is part of the Newport-Inglewood fault system (City of Gardena 2006). Given that this fault is active, the area is at risk of fault rupture.

The city of Gardena also has some areas that are subject to liquefaction risks. Specifically, the area along Artesia Boulevard and the Dominguez Flood Control Channel are within a liquefaction zone identified by the California Department of Conservation Seismic Hazard Zones Map (City of Gardena 2006).

Soil Erosion

No soil erosion issues were identified for the Sepulveda Feeder study area with the exception of Los Angeles County, which is discussed in Section 4.6.2.2.

Unstable Geology or Soils

Culver City

The Seismic Safety Element of the Culver City General Plan identifies subsidence as a geologic hazard in the Baldwin Hills area since the failure of the Baldwin Hills reservoir in 1963. Subsidence is expected to continue in this area. According to the Seismic Safety Element, water injection into the oil reservoirs may slow the subsidence rate with time, as has been accomplished in the Wilmington Oil Field (Culver City General Plan).

City of Inglewood

According to the Safety Element of the Inglewood General Plan (City of Inglewood 1995), there is no historic evidence of subsidence problems in Inglewood. The exception is an area of the Baldwin Hills, approximately 1 mile northwest of Inglewood, which has experienced subsidence as a result of oil extraction.

The former course of Centinela Creek has the potential for settlement due to soil composition and the poorly compacted fill placed along the creekbed in the early 1900s. As previously mentioned, this area is also susceptible to seismically induced settlement.

City of Hawthorne

No issues related to unstable geology and soils were identified in the city of Hawthorne, with the exception of seismically induced instability, discussed above.

City of Gardena

No issues related to unstable geology and soils were identified in the city of Gardena, with the exception of seismically induced instability, discussed above.

Expansive Soils

No expansive soils were identified in the Sepulveda Feeder study area.

4.6.3 Regulatory Framework

This section describes the plans, policies, and regulations related to geology and soils that are applicable to the proposed program.

4.6.3.1 Federal

There are no federal regulations related to geology and soils applicable to the program.

4.6.3.2 State

Alquist-Priolo Earthquake Fault Zoning Act

This act provides policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prevent the location of developments and structures for human occupancy across the trace of active faults. The proposed program does not include development or structures for human occupancy, so this act is not applicable.

Seismic Hazards Mapping Act

This act requires that site-specific geotechnical investigations be conducted within the zones of required investigation to identify and evaluate seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy. The proposed program does not include development or structures for human occupancy, so this act is not applicable.

California Building Code Standards

The California Building Standards Code governs the design and construction of buildings, associated facilities, and equipment and applies to buildings in California.

4.6.3.3 Local

Table 4.6-10 lists the applicable geology and soils regulations for the proposed program.

Table 4.6-10. Applicable Geology and Soils Regulations for Proposed Program

Title of Plan, Policy, Regulation (date)	Applicable Regulation
Allen-McColloch Pipeline	
City of Yorba Linda General Plan, Public Safety Element	<p>Geologic Instability/Seismic Hazards Implementation Program 5: All construction excavations and trenches relative to human occupancy and public works infrastructure of 5 feet or deeper in mapped fault zones shall be inspected by the city for any evidence of faulting.</p> <p>Geologic Instability/Seismic Hazards Implementation Program 8: A liquefaction report shall be required for proposed projects located in areas susceptible to liquefaction. Liquefaction reports will be submitted prior to issuance of construction permits.</p>
City of Anaheim General Plan, Safety Element	<p>Goal 1.1: Minimize the risk to public health and safety and disruptions to vital services, economic vitality, and social order resulting from seismic and geologic activities.</p> <p>Policy 1: Minimize the risk to life and property through the identification of potentially hazardous areas, adherence to proper construction design criteria, and provision of public information.</p> <p>Policy 7: Require that new construction and significant alterations to structures located within potential landslide areas be evaluated for site stability, including the potential impact to other properties, during project design and review.</p>

Title of Plan, Policy, Regulation (date)	Applicable Regulation
City of Tustin General Plan, Conservation/ Open Space/ Recreation Element	<p>Policy 8.2: Control erosion during and following construction through proper grading techniques, vegetation replanting, and the installation of proper drainage control improvements.</p> <p>Policy 8.3: Encourage the practice of proper soil management techniques to reduce erosion, sedimentation, and other soil-related problems.</p>
City of Irvine, Seismic Element	<p>Policy D-2(d): Require detailed site studies to determine the potential for seismic hazards for facilities which are critical in an emergency. These facilities include but are not limited to: ... major public utilities (electrical, gas, and water facilities...</p>
Mission Viejo General Plan, Public Safety Element	<p>Policy 2.1: Follow established standards for grading and construction to mitigate the potential for seismic hazards.</p> <p>Policy 2.6: Continue to implement operational guidelines and design standards, consistent with Public Utility Commission limitations, for subsurface transmission lines including natural gas, petroleum, water, and waste water which minimizes potential environmental damage resulting from operational failure due to natural or man-made catastrophes.</p>
Orange County General Plan, Safety Element, Seismic Safety and Geologic Hazards	<p>Policy 5: To encourage establishment of seismic design criteria and standards for county facilities (e.g., transmission lines, water and sewage systems, and highways), any structures housing necessary mobile units and support equipment, and other vital resources which would be needed following an earthquake (e.g., “back-up” power generation facilities and water storage).</p>
Calabasas Feeder	
Conservation Element of the City of Calabasas 2030 General Plan	<p>Policy IV-32: Regulate construction activities to eliminate potentially destructive practices that remove topsoil or place soils in areas intended to be preserved in open space, as well as practices such as dumping of construction wastes in unauthorized areas, washing out concrete trucks and spreading lime-laden water.</p>
Rialto Pipeline	
City of Rialto General Plan, Safety and Noise	<p>Policy 5-1.2: Require all construction to be in conformance with the Uniform Building Code (UBC) and the California Building Code (CBC), and to be consistent with the Municipal Code as it provides for earthquake resistant design, evacuation, and grading.</p>
City of Upland General Plan	<p>Policy SAF-3.6: Promote the upgrade, retrofitting, and/or relocation of all existing critical facilities (e.g., hospitals, schools, police stations, fire stations, water facilities, emergency operation centers, emergency access routes, public works yard, public refuge areas) and other important public facilities that do not meet current building code standards and are within areas susceptible to seismic or geologic hazards.</p>
La Verne General Plan, Public Safety	<p>Policy 2.1, Implementation Measure (b): Adhere to Chapter 70 of the <i>Uniform Building Code</i> regulating earth work and grading during construction, and hillside grading guidelines to minimize erosion.</p>
Second Lower Feeder	
Orange County General Plan, Safety Element, Seismic Safety and Geologic Hazards	<p>Policy 5: To encourage establishment of seismic design criteria and standards for county facilities (e.g., transmission lines, water and sewage systems, and highways), any structures housing necessary mobile units and support equipment, and other vital resources which would be needed following an earthquake (e.g., “back-up” power generation facilities and</p>

Title of Plan, Policy, Regulation (date)	Applicable Regulation
	water storage).
City of Yorba Linda General Plan, Public Safety Element	<p>Geologic Instability/Seismic Hazards Implementation Program 5: All construction excavations and trenches relative to human occupancy and public works infrastructure of 5 feet or deeper in mapped fault zones shall be inspected by the city for any evidence of faulting.</p> <p>Geologic Instability/Seismic Hazards Implementation Program 8: A liquefaction report shall be required for proposed projects located in areas susceptible to liquefaction. Liquefaction reports will be submitted prior to issuance of construction permits.</p>
City of Anaheim General Plan, Safety Element	<p>Goal 1.1: Minimize the risk to public health and safety and disruptions to vital services, economic vitality, and social order resulting from seismic and geologic activities.</p> <p>Policy 1: Minimize the risk to life and property through the identification of potentially hazardous areas, adherence to proper construction design criteria, and provision of public information.</p> <p>Policy 7: Require that new construction and significant alterations to structures located within potential landslide areas be evaluated for site stability, including the potential impact to other properties, during project design and review.</p>
City of Carson General Plan, Open Space and Conservation Element	Policy OSC-2.2: Minimize soil erosion and siltation from construction activities through monitoring and regulation.
Rolling Hills Estates General Plan, Public Safety Element	Policy 1.5: Support earthquake strengthening and provision of alternative or backup services, such as water, sewer, electricity, and natural gas pipelines and connections, especially in areas of high seismic or geologic high hazard or where weak segments are identified by existing or future studies.
Sepulveda Feeder	
Inglewood General Plan, Safety Element (1995)	Policy 1: Provide measures to reduce seismic impacts ... Ensure that all utility lifelines, critical facilities, and places of assembly are seismically sound.

4.6.4 Thresholds and Methodology

4.6.4.1 Thresholds of Significance

Table 4.6-11 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to geology and soils. It also indicates which impacts were determined to be less than significant in the Initial Study and therefore do not require additional analysis, and which impacts must be analyzed in the PEIR for the proposed program.

Table 4.6-11. CEQA Thresholds for Geology and Soils

Threshold	Analysis Required for the Proposed Program
<i>Would the proposed program:</i>	

Threshold <i>Would the proposed program:</i>	Analysis Required for the Proposed Program
a. Expose people or structures to 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)?	X
ii. Strong seismic groundshaking?	X
iii. Seismically related ground failure, including liquefaction?	X
iv. Landslides?	X
b. Result in substantial soil erosion or the loss of topsoil?	X
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	X
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	X
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?	N/A*
*Determined to be less than significant in the Initial Study (Appendix A).	

4.6.4.2 Methodology

Known Earthquake Fault Rupture

As documented in Section 4.6.2, this PEIR identifies known earthquake faults that could affect the pipelines in the PCCP Rehabilitation Program. For this program-level analysis, the Alquist-Priolo Earthquake Fault Zoning Act is not applicable, because the proposed program does not include structures intended for human occupancy. However, the Alquist-Priolo Earthquake Fault Zoning Map is helpful in identifying earthquake faults that could affect construction crews when rehabilitating the pipelines. The potential for impacts to occur related to fault rupture during rehabilitation anywhere along the pipelines is evaluated.

As part of any project within the PCCP Rehabilitation Program, Metropolitan would require its contractors to comply with the requirements of the California Building Code (CBC) and the California Division of Occupational Safety and Health (better known as Cal/OSHA). The analysis in this section assumes all contractors would comply with these requirements.

Strong Seismic Groundshaking

As documented in Section 4.6.2, this PEIR identifies that the study areas for all five pipelines would be subject to strong seismic groundshaking in the event of an earthquake on known or unknown faults in the region. For this program-level analysis, compliance with the requirements of the CBC and Cal/OSHA are assumed. Based on these assumptions, the potential for impacts to occur related to strong seismic groundshaking during rehabilitation anywhere along the pipelines is evaluated.

Seismically Related Ground Failure

As documented in Section 4.6.2, this PEIR identifies areas that could experience ground failure, including liquefaction, during earthquakes. For this program-level analysis, compliance with the requirements of the CBC and Cal/OSHA are assumed. Based on these assumptions, the potential for impacts to occur from seismically related ground failure during rehabilitation anywhere along the pipelines is evaluated.

Seismically Related Landslides

As documented in Section 4.6.2, this PEIR identifies areas that could be subject to seismically related landslides. For this program-level analysis, compliance with the requirements of the CBC and Cal/OSHA are assumed. Based on these assumptions, the potential for impacts related to seismically related landslides during rehabilitation anywhere along the pipelines is evaluated.

Soil Erosion

As documented in Section 4.6.2, this PEIR identifies areas where substantial soil erosion or loss of topsoil could occur. For this program-level analysis, compliance with the requirements of the CBC and Cal/OSHA are assumed. In addition, Metropolitan has included the following environmental commitments as part of all projects in the proposed program.

- Rehabilitation activities would comply with the South Coast Air Management District's Rule 403 to minimize fugitive dust, construction traffic, and particulate matter releases.
- Rehabilitation activities would incorporate water quality Best Management Practices, including a Stormwater Pollution Prevention Plan, as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management.

Based on these assumptions and environmental commitments, the potential for impacts related to soil erosion or loss of topsoil to occur during rehabilitation anywhere along the pipelines is evaluated.

Unstable Geology or Soils

As documented in Section 4.6.2, this PEIR identifies areas that could be affected by unstable geology or soils, potentially resulting in landslides, lateral spreading, subsidence, liquefaction, or collapse. For this program-level analysis, compliance with the requirements of the CBC and Cal/OSHA are assumed. Based on these assumptions, the potential for impacts related to unstable geology or soils during rehabilitation anywhere along the pipelines is evaluated.

Expansive Soils

As documented in Section 4.6.2, this PEIR identifies areas that could be affected by expansive soils. For this program-level analysis, compliance with the requirements of the CBC and Cal/OSHA are assumed. Based on these assumptions, the potential for impacts related to expansive soils during rehabilitation anywhere along the pipelines is evaluated.

4.6.5 Impacts Analysis

4.6.5.1 Program Analysis

Threshold GEO-A.I: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault

All of the feeders with the exception of the Calabasas Feeder would cross at least one Alquist-Priolo Earthquake Fault Zone. Fault rupture, if it were to occur, could affect the integrity of a pipeline and damage could occur. Although there are designated Alquist-Priolo Earthquake Fault Zones within the study area for the PCCP program, the proposed program would not include construction of structures intended for human occupancy. The proposed program would rehabilitate existing feeders, usually located in existing roadway rights-of-way, and would not be an attraction drawing a significant amount of people to the area. Fault rupture, if it were to occur in these areas, could affect construction crews and the integrity of a feeder. However, due to the infrequent occurrence of fault rupture and the relatively short duration of construction, the probability that a seismic event would coincide with construction activities is low. Furthermore, Metropolitan would require its contractors to comply with the requirements of the CBC and Cal/OSHA. Therefore, this hazard is considered to pose an acceptable level of risk of injury and material/property loss that could potentially occur from seismic activity during construction, and impacts would be less than significant. In the event that construction staging areas are situated outside the 0.5-mile study area, Metropolitan would evaluate potentially hazardous geologic conditions in jurisdictions not addressed in this PEIR.

In addition, the hazard of fault rupture at a feeder/fault crossing would exist during program operation. However, similar to construction activities, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system and would not draw a significant amount of people to the area. Therefore, operation of the PCCP program would not create a substantial risk to life or property involving rupture of a known earthquake fault, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold GEO-A.II: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Strong Seismic Groundshaking

All five feeders would be potentially subject to strong seismic shaking as a result of earthquakes on nearby or more distant faults. However, as mentioned above, the proposed program would rehabilitate existing feeders and would not include construction of structures intended for human

occupancy or draw a significant amount of people to the area. As discussed under Threshold GEO-A.I, earthquake-induced groundshaking could affect construction crews and the integrity of a feeder, resulting in injury or loss. However, due to the infrequent occurrence of seismic events and the relatively short duration of construction, the probability that a seismic event would coincide with construction activities is low. Furthermore, Metropolitan would require its contractors to comply with the requirements of the CBC and Cal/OSHA. Therefore, this hazard is considered to pose an acceptable level of risk of injury and material/property loss that could potentially occur from seismic activity during construction, and impacts would be less than significant.

In addition, the PCCP program is in Southern California, which is a seismically active area; therefore, strong seismic shaking could have adverse effects on buried feeders during operation and would result in significant impacts. However, as mentioned above, rehabilitation would be conducted in compliance with current and applicable pipeline design standards, which would minimize potential impacts. Therefore, similar to construction impacts, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system, and impacts would be less than significant.

Mitigation Measures

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold GEO-A.III: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Seismically Related Ground Failure, Including Liquefaction

The PCCP program is in Southern California, which is a seismically active area, and susceptible to liquefaction during seismic events in some areas of the PCCP program study area. Liquefaction, if it were to occur, could result in settlement and lateral spreading. These effects could damage the feeders and would result in impacts.

As mentioned above, the proposed program would rehabilitate existing feeders, usually located in existing roadway rights-of-way, and would not involve the construction of structures intended for human occupancy or draw a significant amount of people to the area. In addition, due to the infrequent occurrence of seismic events and the relatively short duration of construction, the probability that a seismic event would coincide with construction activities is low. Furthermore, Metropolitan would require its contractors to comply with the requirements of the CBC and Cal/OSHA. Therefore, this hazard is considered to pose an acceptable level of risk of injury and material/property loss that could potentially occur from seismically related ground failure including liquefaction, and impacts would be less than significant.

In addition, the hazard of liquefaction would exist over the design life of the water conveyance system. This is an existing risk for the current operation of the feeders in the study area, and operation of the proposed program would not increase this risk or potential to expose people or structures to seismically related ground failure. Additionally, as previously discussed, rehabilitation would be conducted in compliance with the most up-to-date building codes required by the state of

California and the CBC, which would minimize potential impacts. Therefore, similar to construction impacts, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold GEO-A.IV: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Landslides

Some portions of the PCCP program study area are in hilly areas that are susceptible to earthquake-induced landslides. This effect could damage the feeders and would result in impacts.

As discussed above, the proposed program would rehabilitate existing feeders, usually located in existing roadway rights-of-way, and would not involve the construction of structures intended for human occupancy or draw a significant amount of people to the area. In addition, due to the infrequent occurrence of seismic events and the relatively short duration of construction, the probability that a seismic event would coincide with construction activities is low. Furthermore, Metropolitan would require its contractors to comply with the requirements of the CBC and Cal/OSHA. Therefore, this hazard is considered to pose an acceptable level of risk of injury and material/property loss that could potentially occur from seismically related landslides, and impacts would be less than significant.

Additionally, the hazard of seismically related landslides would exist over the design life of the water conveyance system. This is an existing risk for the current operation of the feeders in the study area, and operation of the proposed program would not increase this risk or potential to expose people or structures to seismically related ground failure. Additionally, as discussed above, rehabilitation would be conducted in compliance with the most up-to-date building codes required by the state of California and the CBC, which would minimize potential impacts. Therefore, similar to construction impacts, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold GEO-B: Result in Substantial Soil Erosion or the Loss of Topsoil

Some portions of the PCCP program study area are in areas where soil erosion or loss of topsoil could occur. This effect could damage the feeders and would result in impacts.

As mentioned above, the proposed program would rehabilitate existing feeders, usually located in existing roadway rights-of-way, and the potential for soil erosion would be limited in the existing street areas. Trenching during pipeline rehabilitation would result in soil disturbance in a relatively narrow corridor along a feeder route. Also, the movement and temporary stockpiling of excavated soil could also result in short-term erosion and sedimentation if improperly handled and stored. Additionally, soil disturbance and erosion and sedimentation could occur at construction staging areas, which may or may not be within the study area. However, Metropolitan has included the following environmental commitments as part of all projects in the proposed program.

- Rehabilitation activities would comply with the South Coast Air Management District's Rule 403 to minimize fugitive dust, construction traffic, and particulate matter releases.
- Rehabilitation activities would incorporate water quality Best Management Practices, including a Stormwater Pollution Prevention Plan, as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management.

These environmental commitments would reduce potential impacts related to soil erosion and loss of topsoil during construction and, therefore, impacts would be less than significant.

As described in Chapter 3, Section 3.7.6, *Site Restoration*, once rehabilitation of a program component is complete, ground surface and work areas including staging areas would be restored to pre-construction conditions. Landscaping would also be replaced and restored to pre-construction conditions. Site restoration would also include restoration of existing roads or sidewalks damaged during rehabilitation activities. Thus, operational impacts resulting in soil erosion and loss of topsoil would be minimized and returned to pre-construction conditions. Therefore, impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold GEO-C: Be Located on a Geologic Unit or Soil that Is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse

Some areas of the PCCP program could be located on a geologic unit or soils that have been identified as potentially unstable. This could expose the feeders and workers to impacts related to landslide, lateral spreading, subsidence, liquefaction, or collapse.

However, as discussed above, the proposed program would rehabilitate existing feeders, usually located in existing roadway rights-of-way, and would not involve the construction of structures intended for human occupancy or draw a significant amount of people to the area. In addition, Metropolitan would require its contractors to comply with the requirements of the CBC and Cal/OSHA. Therefore, this hazard is considered to pose an acceptable level of risk of injury and material/property loss that could potentially occur from unstable geologic units or soils, and impacts would be less than significant.

Additionally, the hazard of unstable geologic conditions would exist over the design life of the water conveyance system. This is an existing risk for the current operation of the feeders in the study area, and operation of the proposed program would not increase this risk or potential to expose people or structures to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Additionally, as discussed above, rehabilitation would be conducted in compliance with the most up-to-date building codes required by the state of California and the CBC, which would minimize potential impacts. Therefore, similar to construction impacts, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold GEO-D: Be Located on Expansive Soil, Creating Substantial Risks to Life or Property

Some areas of the PCCP program may be underlain by expansive soils that could deform, resulting in damage to feeders and risk of injury to workers. However, as discussed above, the proposed program would rehabilitate existing feeders, usually located in existing roadway rights-of-way, and would not involve the construction of structures intended for human occupancy or draw a significant amount of people to the area. In addition, Metropolitan would require its contractors to comply with the requirements of the CBC and Cal/OSHA. Therefore, this hazard is considered to pose an acceptable level of risk of injury and material/property loss that could potentially occur from expansive soils, and impacts would be less than significant.

Additionally, the hazard of expansive soils would exist over the design life of the water conveyance system. This is an existing risk for the current operation of the feeders in the study area, and operation of the proposed program would not increase this risk or potential to expose people or structures to loss of life or damage to property. Additionally, as discussed above, rehabilitation would be conducted in compliance with the most up-to-date building codes required by the state of California and the CBC, which would minimize potential impacts. Therefore, similar to construction impacts, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.6.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

All of the geology and soils thresholds were found to be less than significant after implementation of mitigation. As discussed above, all operational impacts are existing risks for the feeders and considered acceptable for the operation of a water conveyance system. Rehabilitation of the feeders would not change this level of risk. However, impacts could occur during construction that could damage feeders and expose workers to risk of injury. These impacts would be localized to the construction sites and limited to the duration of construction. Therefore, the contribution of these impacts would not be cumulatively considerable, and construction of the proposed program would not result in cumulative geologic impacts.

Section 4.7

Greenhouse Gas Emissions

4.7.1 Introduction

This section describes the existing conditions for greenhouse gas (GHG) emissions, the regulatory framework associated with GHG emissions, the impacts on GHG emissions that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant GHG emissions impacts.

4.7.2 Existing Conditions

According to the U.S. Environmental Protection Agency (EPA), a GHG is any gas that absorbs infrared radiation in the atmosphere. This absorption traps heat within the atmosphere, maintaining the Earth's surface temperature at a level higher than would be the case in the absence of GHGs. GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and halogenated chlorofluorocarbons. Naturally occurring GHGs include water vapor, CO₂, CH₄, N₂O, and O₃. Human activities add to the levels of most of these naturally occurring gases.

Increasing levels of GHGs in the atmosphere result in an increase in the temperature of the Earth's lower atmosphere, a phenomenon that is commonly referred to as "global warming." Warming of the Earth's lower atmosphere induces a suite of additional changes, including changes in global precipitation patterns; ocean circulation, temperature, and acidity; global mean sea level; species distribution and diversity; and the timing of biological processes. These large-scale changes are collectively referred to as "global climate change."

The Intergovernmental Panel on Climate Change (IPCC) has been established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change and its potential impacts and provide options for adaptation and mitigation. As the leading authority on climate change science, IPCC's best estimates are that average global temperature rise between 2000 and 2100 could range from 0.5°F to 8.6°F (IPCC 2013). Large increases in global temperatures, as high as 8.6°F, could have massive deleterious impacts on natural and human environments.

Since the industrial revolution began in approximately 1750, the concentration of CO₂ in the Earth's atmosphere has increased from 270 parts per million (ppm) to roughly 391 ppm. Atmospheric concentrations of CH₄ and N₂O have similarly increased since the beginning of the industrial age. Since 1880, the global average surface temperature has increased by 1.5°F, the global average sea level has risen by nearly 190 millimeters (since 1901), and northern hemisphere snow cover (data available since 1920) has decreased by nearly 3 million square kilometers. These recently recorded changes can be attributed with a high degree of certainty to increased concentrations of GHGs in the atmosphere (IPCC 2013). Sinks of CO₂ (which remove rather than emit CO₂) include uptake by vegetation and dissolution into the ocean. Global GHG emissions greatly exceed the removal capacity

of natural sinks. As a result, concentrations of GHGs in the atmosphere are increasing (California Energy Commission 2006).

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants. Criteria air pollutants and toxic air contaminants occur locally or regionally, and local concentrations respond to locally implemented control measures. The long atmospheric lifetimes of GHGs allow them to be transported great distances from sources and become well mixed, unlike criteria air pollutants, which typically exhibit strong concentration gradients away from point sources. GHGs and global climate change represent cumulative impacts. GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change.

4.7.2.1 Definition of Greenhouse Gases

The GHGs listed by IPCC (CO₂, CH₄, N₂O, HFCs, PFCs, and sulphur hexafluoride [SF₆]) (2013) are discussed in this section in order of abundance in the atmosphere. California law and the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code Section 38505(g); 14 California Code of Regulations Section 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources.¹ The sources and sinks² of each of these gases are discussed in detail below. Generally, GHG emissions are quantified and presented in terms of metric tons of carbon dioxide equivalent (CO₂e) emitted per year. The primary GHGs associated with the program are CO₂, CH₄, and N₂O. HFCs, PFCs, and SF₆ are associated primarily with industrial processes and, thus, are not discussed herein.

To simplify reporting and analysis, GHGs are commonly defined in terms of global warming potential (GWP). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂e. The GWP of CO₂ is, by definition, 1. The GWP values used in this report are based on IPCC Fourth Assessment Report and United Nations Framework Convention on Climate Change reporting guidelines and defined in Table 4.7-1, below (IPCC 2007). The IPCC Fourth Assessment Report GWP values are used in the California Air Resources Board's (ARB) California inventory and the most recent AB 32 Scoping Plan estimate update (ARB 2014).

Table 4.7-1. Lifetime, Global Warming Potential, and Abundance of Several Significant GHGs

Gas	Global Warming Potential (100 years)	Lifetime (years) ^a	Atmospheric Abundance
CO ₂ (ppm)	1	50–200	394
CH ₄ (ppb)	25	9–15	1,893
N ₂ O (ppb)	298	121	326
^a Defined as the half-life of the gas. ppm = parts per million; ppb = parts per billion Sources: Myhre et al. 2013; Blasing 2014; ARB 2014.			

¹ Although water vapor plays a substantive role in the natural greenhouse effect, the change in GHGs in the atmosphere due to anthropogenic actions is enough to upset the radiative balance of the atmosphere and result in global warming.

² A sink removes and stores GHGs in another form. For example, vegetation is a sink because it removes atmospheric CO₂ during respiration and stores the gas as a chemical compound in its tissues.

CO₂ is the most important anthropogenic GHG. It accounts for more than 75 percent of all GHG emissions emitted by humans. Its atmospheric lifetime of 50 to 200 years ensures that atmospheric concentrations of CO₂ will remain elevated for decades, even after mitigation efforts to reduce GHG concentrations are promulgated (IPCC 2007). The primary sources of anthropogenic CO₂ in the atmosphere include fossil fuel usage (including motor vehicle fuels), gas flaring, cement production, and land use changes (including deforestation).

CH₄, the main component of natural gas, is the second-most abundant GHG and has a GWP of 25 (IPCC 2007). Sources of anthropogenic emissions of CH₄ include rice growing, cattle raising, natural gas combustion, landfill outgassing, and coal mining (National Oceanic and Atmospheric Administration 2005).

N₂O is a powerful GHG, with a GWP of 298 (IPCC 2007). Anthropogenic sources of N₂O include agricultural processes (e.g., fertilizer application), nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions. N₂O is also used in rocket engines and racecars and as an aerosol spray propellant. In the United States, more than 70 percent of N₂O emissions are related to agricultural soil management practices, particularly fertilizer applications.

4.7.2.2 GHG Emissions Sources

More than 97 percent of U.S. GHG emissions result from burning fossil fuels. Although many nations, including the U.S., regularly monitor and report GHG emissions, federal legislation to reduce global emissions has not been adopted, although it is the subject of much debate. EPA is presently pursuing the regulation of GHGs through the federal Clean Air Act (CAA), following a U.S. Supreme Court ruling that clarified its authority under the CAA to do so. Many states, including California, as a prominent leader, have passed legislation to reduce GHG emissions. California's GHG regulatory framework is discussed in Section 4.7.3, *Regulatory Framework*.

4.7.2.3 Greenhouse Gas Inventories

A GHG inventory is a quantification of all GHG emissions and sinks within a selected physical and/or economic boundary. GHGs can be inventoried on a large scale (i.e., for global and national entities) or a small scale (i.e., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

U.S. Greenhouse Gas Emissions Inventory

EPA estimates that total U.S. GHG emissions for 2013 amounted to 6,673 million metric tons of CO₂e (MMTCO₂e), which represents a 2.0 percent increase compared with 2012 levels but a 9.0 percent decrease from 2005 levels and a 5.9 percent decrease from 1990 levels. The largest contributors to U.S. GHG emissions in 2013 were electricity generation (31 percent), transportation (27 percent), and the industrial sector (21 percent). Emissions in the electricity generation, transportation, residential, commercial, and industrial sectors consist primarily of CO₂ (82 percent of emissions). GHG emissions from agriculture consist predominantly of CH₄ and N₂O. In general, industrial and, to a lesser extent, commercial emissions in the U.S. have declined over the last decade, while emissions in other sectors, such as transportation, have grown steadily. U.S. GHG emissions are responsible for approximately 16 percent of the global total (EPA 2015).

California Greenhouse Gas Emissions Inventory

In 2013, total California GHG emissions were estimated to be 459.3 MMTCO₂e. The transportation sector accounted for approximately 37 percent of total emissions, followed by electricity generation (20 percent), the industrial sector (23 percent), commercial and residential sources (12 percent), agriculture (8 percent), and other sources (6 percent) (ARB 2015).

Annual statewide GHG emissions inventories provide an important tool for establishing historical emission trends and tracking California's progress toward the 2020 goal. From 2000 to 2013, GHG emissions decreased by 2.0 percent. In addition, California's per capita GHG emissions have generally decreased over the last 12 years, going from 14.0 metric tons of CO₂e per person in 2001 to 12.0 in 2013, a 14 percent decrease (ARB 2015).

4.7.2.4 California GHG Emissions

California is the second-largest emitter of GHGs in the United States (just behind Texas) and the sixteenth-largest GHG emitter in the world (California Energy Commission 2006). However, because of its more stringent air pollutant emissions regulations and mild climate, California was fourth lowest in carbon emissions per capita in 2001 and fifth lowest in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (i.e., total economic output of goods and services). In 2010, California produced 452 MMTCO₂e,³ of which 38 percent were from transportation sources, 21 percent from activities related to electric power generation, and 19 percent from industrial sources (ARB 2013). Other major sources of statewide GHG emissions include mineral production, waste combustion and related land use, and forestry changes. Agriculture, forestry, commercial, and residential activities make up the balance of California's GHG emissions (ARB 2013).

4.7.3 Regulatory Framework

This section describes the plans, policies, and regulations related to GHG that are applicable to the proposed program.

4.7.3.1 Federal

Massachusetts et al. v. U.S. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations, sued EPA to regulate GHGs as a pollutant, pursuant to the federal CAA. The court ruled that the plaintiffs had standing to sue, finding that GHGs fit within the CAA's definition of a pollutant, and EPA's reasons for not regulating GHGs were insufficiently grounded.

³ GHG emissions, other than CO₂, are commonly converted into CO₂ equivalents, which take into account the differing GWP of different gases. For example, the IPCC finds that N₂O has a GWP of 310, and CH₄ has a GWP of 21. Thus, the emission of 1 ton of N₂O and 1 ton of CH₄ is represented as the emission of 310 tons of CO₂e and 21 tons of CO₂e, respectively. This allows for the summation of different GHG emissions into a single total.

4.7.3.2 State

Assembly Bill 32, the Global Warming Solutions Act of 2006/2011

Assembly Bill (AB) 32 codified the state's GHG emissions target by requiring California's global warming emissions to be reduced to 1990 levels by 2020. Since its adoption, ARB, the California Energy Commission, the California Public Utilities Commission, and the California Building Standards Commission have been developing regulations that will help the state meet the goals of AB 32 and Executive Order (EO) S-03-05. The scoping plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires ARB and other state agencies to develop and enforce regulations and other initiatives to reduce GHG emissions. Specifically, the scoping plan articulates a key role for local governments by recommending that they establish GHG emissions-reduction goals for both their municipal operations and the community that are consistent with those of the state (i.e., approximately 15 percent below current levels (ARB 2008).

Climate Change Scoping Plan

On December 11, 2008, pursuant to AB 32, ARB adopted the Climate Change Scoping Plan. This plan outlines how emissions reductions from significant sources of GHGs will be achieved via regulations, market mechanisms, and other actions. The Climate Change Scoping Plan also describes recommended measures that were developed to reduce GHG emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately affect low-income and minority communities. These measures put the state on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels.

The First Update to the Scoping Plan was approved by ARB on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next 5 years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

Executive Order S-03-05 (2005)

The goal of EO S-03-05 is to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32.

Executive Order B-30-15

Signed on April 29, 2015, EO B-30-15 set a goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The intent is for the state to achieve this interim goal in advance of AB 32's emissions target of 80 percent below 1990 levels by 2050.

Senate Bill 97

Senate Bill (SB) 97 required the Governor's Office of Planning and Research to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375, Sustainable Communities and Climate Protection Act of 2008

SB 375 requires metropolitan planning organizations to incorporate a "sustainable communities strategy" in their regional transportation plans that will achieve the GHG emissions reduction targets that were set by ARB in February 2011. SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as transit-oriented development. However, those provisions will not become effective until a sustainable communities strategy is adopted. The final targets require the Southern California Association of Governments to identify strategies to reduce per capita GHG emissions from passenger vehicles by approximately 8 percent by 2020 and 13 percent by 2035 compared with base-year (i.e., 2005) emissions. Southern California Association of Governments adopted the final 2012 Regional Transportation Plan, which incorporates the Sustainable Communities Strategy, on April 4, 2012 (SCAG 2012).

4.7.3.3 Regional

South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) is responsible for comprehensive air pollution control in the greater Los Angeles area. To provide GHG emissions guidance to local jurisdictions within the South Coast Air Basin, SCAQMD organized a working group to develop GHG emissions analysis guidance and thresholds and released an interim GHG significance threshold for stationary sources (i.e., industrial projects) where SCAQMD is lead agency. At present, SCAQMD offers no regulations or thresholds for non-SCAQMD lead agency projects.

4.7.3.4 Local

Numerous municipalities and other agencies in the Southern California region have adopted climate action plans or have developed programs and policies to comply with state-mandated GHG reductions. However, with the exception of the City of San Diego, no agencies or municipalities within the Metropolitan service area have adopted binding emissions reduction targets, and none of the pipelines in the proposed program are located in San Diego.

4.7.4 Thresholds and Methodology

4.7.4.1 Thresholds of Significance

Table 4.7-2 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to GHG emissions. These thresholds are addressed in the PEIR.

Table 4.7-2. CEQA Thresholds for Greenhouse Gas Emissions

Threshold
<i>Would the proposed program:</i>
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

4.7.4.2 Methodology

With regard to Threshold A, there are no established federal, state, or local quantitative thresholds applicable to the proposed program to determine the quantity of GHG emissions that may have a significant effect on the environment. ARB, SCAQMD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures.

For the proposed program, the most appropriate screening threshold for determining GHG emissions is the SCAQMD proposed Tier 3 screening threshold (SCAQMD 2008); therefore, a significant impact would occur if the proposed program would exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 metric tons of CO₂e per year. As the Tier 3 screening threshold proposed by SCAQMD is tied to meeting the reduction goals outlined by AB 32, this numeric threshold is also used as the basis for evaluating the proposed program with regard to Threshold B. Based on SCAQMD guidance, construction emissions are amortized over the life of the project, which is defined by SCAQMD as 30 years, and compared to the applicable interim GHG significance threshold tier.

As discussed in Section 4.3, GHG emissions were estimated using emissions factors for off-road construction equipment and on-road vehicle trips and idling derived from CalEEMod and EMFAC2011. Emissions for each of the individual sites were estimated and a full program construction scenario was developed to quantify impacts related to GHGs, which includes the following.

- An average of three relining excavation sites per mile of PCCP
- An average of one new valve/meter vault structure for every 5 miles of PCCP
- An average of one air-release/vacuum valve relocation per mile of PCCP
- 1,000 feet of parallel piping for every 10 miles of PCCP

Emissions have been amortized over the expected 30-year service life of the relined PCCP and appurtenant facilities. Because there would be no change in operational characteristics of the pipelines once rehabilitation is complete, no change in operational GHG emissions would occur.

4.7.5 Impacts Analysis

4.7.5.1 Program Analysis

Threshold GHG-A: Generate Greenhouse Gas Emissions, either Directly or Indirectly, that May Have a Significant Impact on the Environment

Short-term construction activities would result in GHG emissions from fuel combustion associated with on- and off-road construction equipment and vehicles. Emissions associated with construction are summarized in Table 4.7-3. Construction emissions are summed and amortized over the expected 30-year service life of the program. As shown in Table 4.7-3, the full program construction would result in amortized annual emissions of just over 4,700 metric tons, which exceeds the SCAQMD threshold of 3,000 metric tons. As such, impacts would be significant.

Table 4.7-3. Estimate of Total Construction GHG Emissions (metric tons)

Phase	Individual Site CO ₂ e	Full Program CO ₂ e
Typical Excavation Site	422	127,891
New Valve/Meter Vault Structure	407	8,149
Typical Below Grade Air-release/Vacuum Valve Relocation	13	1,307
Pipeline Replacement/Parallel Piping	326	3,261
Total Construction Emissions		140,609
30-year Amortized Total		4,687
Source: Appendix F.		

Mitigation Measures

With the implementation of MM AIR-1 identified in Section 4.3, *Air Quality*, GHG emissions would be reduced by 0.8 percent through the use of Tier 4 off-road construction equipment. The GHG emissions shown in Table 4.7-3 are emissions with the implementation of MM AIR-1.

Residual Impacts

Impacts that would result from the proposed program would be significant. Implementation of MM AIR-1 would reduce these impacts; however, residual impacts would still be significant and unavoidable.

Threshold GHG-B: Conflict with Any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

Metropolitan has not adopted a qualified plan, policy, or regulation to reduce GHG emissions. Therefore, the most applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions is AB 32, which codified the state's GHG emissions-reduction targets for 2020. Beyond 2020, there are no adopted enforceable plans, policies, or regulations pursuant to EO S-03-05 and

EO B-30-15 that are legally applicable to the program. Regardless, a discussion of proposed plans and discussion documents designed to help meet EO S-03-05 and EO B-30-15 targets is provided.

Consistency with Assembly Bill 32 Scoping Plan

AB 32 identified 427 MMTCO₂e as the acceptable level of GHG emissions for California in 2020, which is the same as the 1990 GHG emissions level and approximately 28.5% less than 2020 business-as-usual (BAU) conditions (596 MMTCO₂e).⁴ To reach the target level, there will have to be widespread reductions in GHG emissions across California. Some reductions will need to come in the form of changes pertaining to vehicle emissions and mileage standards. Some will come from changes pertaining to sources of electricity and increased energy efficiency at existing facilities. The remainder will need to come from plans, policies, or regulations that will require new facilities to have lower carbon intensities than they have under BAU conditions.

The AB 32 Scoping Plan details specific GHG emissions-reduction measures that target specific GHG emissions sources. The scoping plan considers a range of actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system). Also included are mobile-source emissions reduction measures (Pavley, low carbon fuel standards, vehicle efficiency measures), energy production-related emissions-reduction measures (natural gas transmission and distribution efficiency measures, natural gas extraction efficiency measures), and the Renewables Portfolio Standard (electricity). The proposed program would not conflict with the measures within the AB 32 Scoping Plan and other measures adopted by ARB but not yet included in the scoping plan. Accordingly, the program would not conflict with AB 32.

Consistency with Executive Orders S-03-05 and B-30-15

EO B-30-15 established an interim GHG reduction target of 40 percent below 1990 levels by 2030, and EO S-3-05 established a long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. Achieving these long-term GHG reduction policies will require systemic changes in how energy is produced and used.

There are a number of studies that discuss potential mechanisms for limiting statewide GHG emissions to meet the aggressive goals identified by EO B-30-15 and EO S-3-05. For example, ARB and other State agencies commissioned Energy + Environmental Economics in 2015 to develop feasible GHG reduction scenarios for 2030. Other studies include a report by the California Center for Science and Technology (2012), the California Department of Transportation's (2015) *California Transportation Plan 2040*, ARB's *First Update to the AB 32 Scoping Plan*, and a study published in *Science* that analyzes the changes that will be required to reduce GHG emissions to 80 percent below 1990 levels by 2050 (Williams et al. 2012). In general, these studies reach similar conclusions—deep reductions in GHG emissions can *only* be achieved with significant changes in electricity production, transportation fuels, and industrial processes (e.g., decarbonizing electricity production, electrifying transportation, utilizing alternative fuels for aviation).

The systemic changes that will be required to achieve EO B-30-15 and EO S-3-05, if they are legislatively adopted, will require significant policy, technical, and economic solutions. Some

⁴ ARB recently updated the AB 32 Scoping Plan and revised the 2020 BAU downward slightly to 509 MMTCO₂e, which reflects the reduced GHG emissions estimates resulting from the recent economic downturn and increased efficiencies.

changes, such as the use of alternative fuels (e.g., biofuel) to replace petroleum for aviation, cannot be accomplished without action by the federal government. Similarly, achieving the reduction goals will require California to dramatically increase the amount of electricity that is generated by renewable generation sources and, correspondingly, advance the deployment of energy storage technology and smart-grid strategies, such as price-responsive demand and the smart charging of vehicles. This would entail a significant redesign of California's electricity system, which can only be accomplished through State action. Accordingly, in evaluating the program's emissions for consistency with EO S-3-05 and EO B-30-15, it is important to note that many of the broad-scale shifts needed to meet the reduction goals are outside of the control of Metropolitan and beyond the scope of the proposed program.

The long-term climate change policy and regulatory changes that will be enacted to meet 2030 and 2050 emissions reduction targets are unknown at this time. As a consequence, the extent to which the program's emissions and resulting impacts would be mitigated through implementation of statewide (and nationwide) changes is not known. However, some of the anticipated statewide actions (e.g., decarbonization, energy efficiency, alternative transportation) can be facilitated, at least to some extent, through implementation of specific GHG reduction measures in large-scale developments.

Program features do not conflict with anticipated long-term statewide strategies to reduce GHG emissions and would help to facilitate substantial progress toward long-term targets as adopted (SB 350) and proposed (Phase 2 trucks) state regulations are fully realized. Accordingly, the program would not conflict with the goals in EO S-3-05 and EO B-30-15.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.7.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

GHG emissions are exclusively cumulative impacts; there are no non-cumulative GHG emissions impacts from a climate change perspective. No single project, when considered in isolation, can cause climate change because a single project's emissions are not enough to change the radiative balance of the atmosphere. Because climate change is the result of GHG emissions and GHGs are emitted by innumerable sources worldwide, global climate change will have a significant cumulative impact on the natural environment as well as human development and activity. As such, GHGs and climate change are cumulatively considerable, even though the contribution may be individually limited (SCAQMD 2008). SCAQMD methodology and thresholds are thus cumulative in nature. As discussed above, the program would exceed the thresholds of significance. Therefore, the proposed

program would contribute to a cumulatively significant impact related to GHG emissions and climate change.

Section 4.8

Hazards and Hazardous Materials

4.8.1 Introduction

This section describes the existing conditions related to hazards and hazardous materials, the regulatory framework associated with hazards and hazardous materials, the impacts related to hazards and hazardous materials that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant impacts related to hazards and hazardous materials.

4.8.2 Existing Conditions

The study area for hazards and hazardous materials varies with topic. Generally, for existing hazardous materials and waste sites, the study area is the pipeline easements or rights-of-way, plus 1 mile. For risks to schools, the study area is 0.25 mile on either side of the pipelines. For airports and airstrips, the study area is 2 miles on either side of the pipelines. For emergency response plans and emergency evacuation plans, the study area is 0.25 mile from the pipelines. Figures 4.8-1 through 4.8-5 show these study areas.

Generally, existing contamination is most likely at commercial and industrial sites. Industrial land uses can encompass a wide range of business operations that have the potential to create hazardous materials impacts. Industrial facilities store hazardous materials in underground storage tanks and/or aboveground storage tanks, and in designated storage locations. Age and improper maintenance of storage tanks have been common causes for soil and groundwater contamination. Improper handling and storage of hazardous material containers can lead to hazardous material incidents.

Commercial locations that may have existing contamination include vehicle repair sites, gasoline fueling stations, and dry cleaning facilities. Like industrial facilities, some commercial sites store hazardous materials in storage tanks and in designated areas within the facility. Hazardous materials spills and leaks in vehicle repair and fueling locations can lead to hydrocarbon-contaminated soil and groundwater. Improper storage and use of hazardous materials in dry cleaning facilities can lead to contaminated soil and groundwater.

Known hazardous materials sites within 1 mile of the proposed program were identified in an Environmental Data Resources (EDR) report for the study area from federal, state and local, tribal, or EDR proprietary databases (Appendix F).

Table 4.8-1. Sources for Known Hazardous Materials Site Records

Type of Record	Sources ¹
Federal	<ul style="list-style-type: none"> • National Priorities List sites (Superfund) ² • Resource Conservation and Recovery Act sites that generate, transport, store, treat and/or dispose of hazardous waste • U.S. brownfields • Hazardous Materials Incident Report System sites • Toxic Release Inventory System • Other sources
State and Local	<ul style="list-style-type: none"> • Cortese Hazardous Waste & Substances Sites List • Leaking Underground Storage Tank • Spills, Leaks, Investigations and Cleanup • California Hazardous Material Incident Report System • Department of Toxic Substances Control's EnviroStor • Other sources
Tribal	<ul style="list-style-type: none"> • Indian Leaking Underground Storage Tank • Underground Storage Tank Voluntary Cleanup Program databases • Other sources
EDR Proprietary Records	<ul style="list-style-type: none"> • EDR U.S. Historic Auto Stations • EDR U.S. Historic Cleaners • Other sources
Notes: ¹ Superfund sites generally involve complex contamination issues and cover large geographic areas. ² Some sites may be found in multiple databases and may overlap in one or more categories. Not all sites in the study area have the potential to affect activities in the study area.	

4.8.2.1 Allen-McColloch Pipeline

Known Hazardous Materials Sites

According to information obtained from the EDR report, there are multiple hazardous materials sites within 1 mile of the Allen-McColloch Pipeline alignment. Table 4.8-2 shows the number of sites identified in federal, state and local, tribal, and EDR proprietary databases.

Table 4.8-2. Known Hazardous Materials Sites in the Allen-McColloch Pipeline Study Area

Type of Database	Number of Sites Identified in EDR Report
Federal Records	104
State and Local Records	587
Tribal Records	0
EDR Proprietary Records	82

El Toro Marine Corps Air Station

One of the sites identified in Table 4.8-2 is the El Toro Marine Corps Air Station in Irvine. This is a large National Priorities List (NPL) site (approximately 4,700 acres) with multiple impacted areas

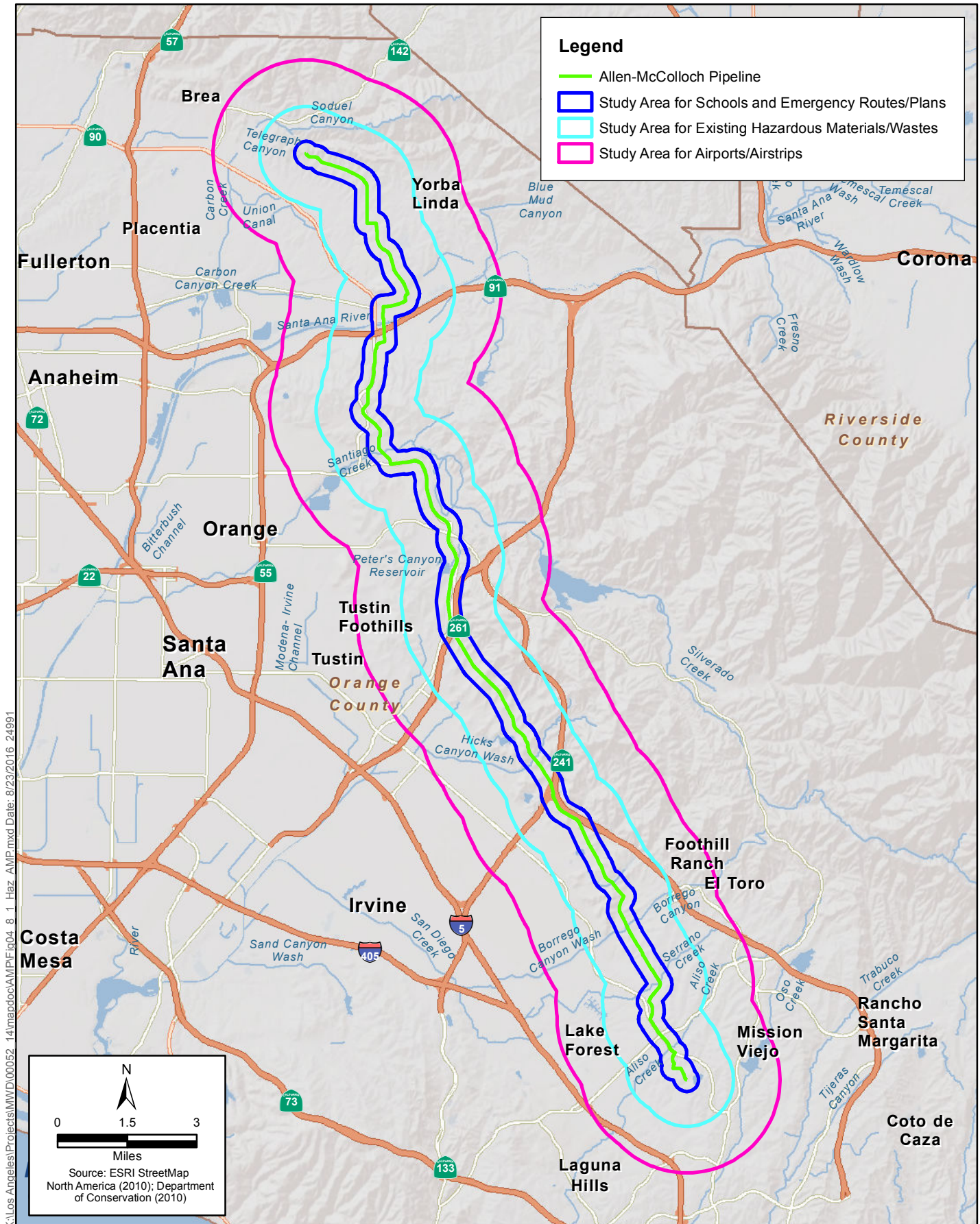


Figure 4.8-1
Allen-McColloch Pipeline Hazards Study Area
Metropolitan PCCP Program

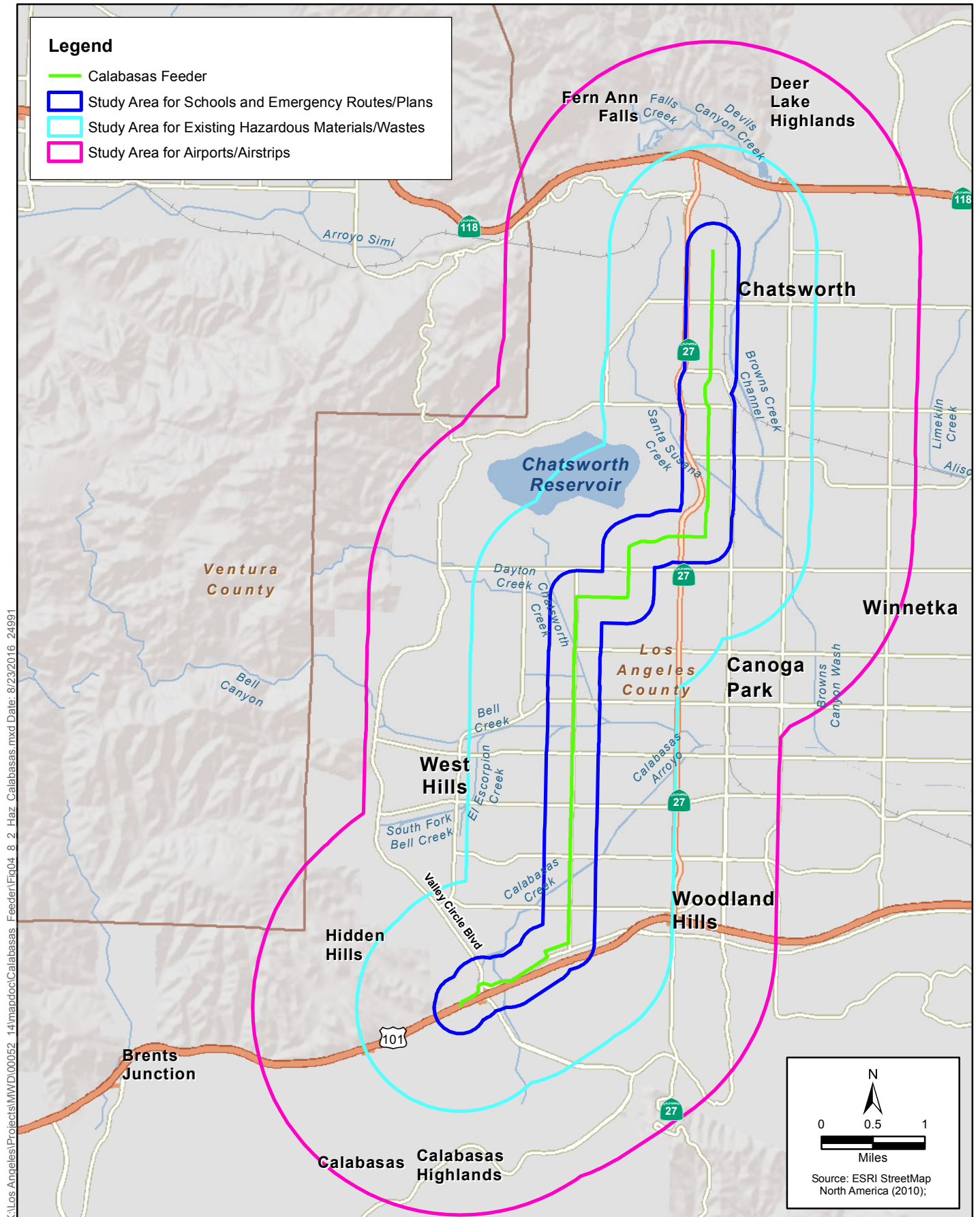


Figure 4.8-2
Calabasas Feeder Hazards Study Area
Metropolitan PCCP Program

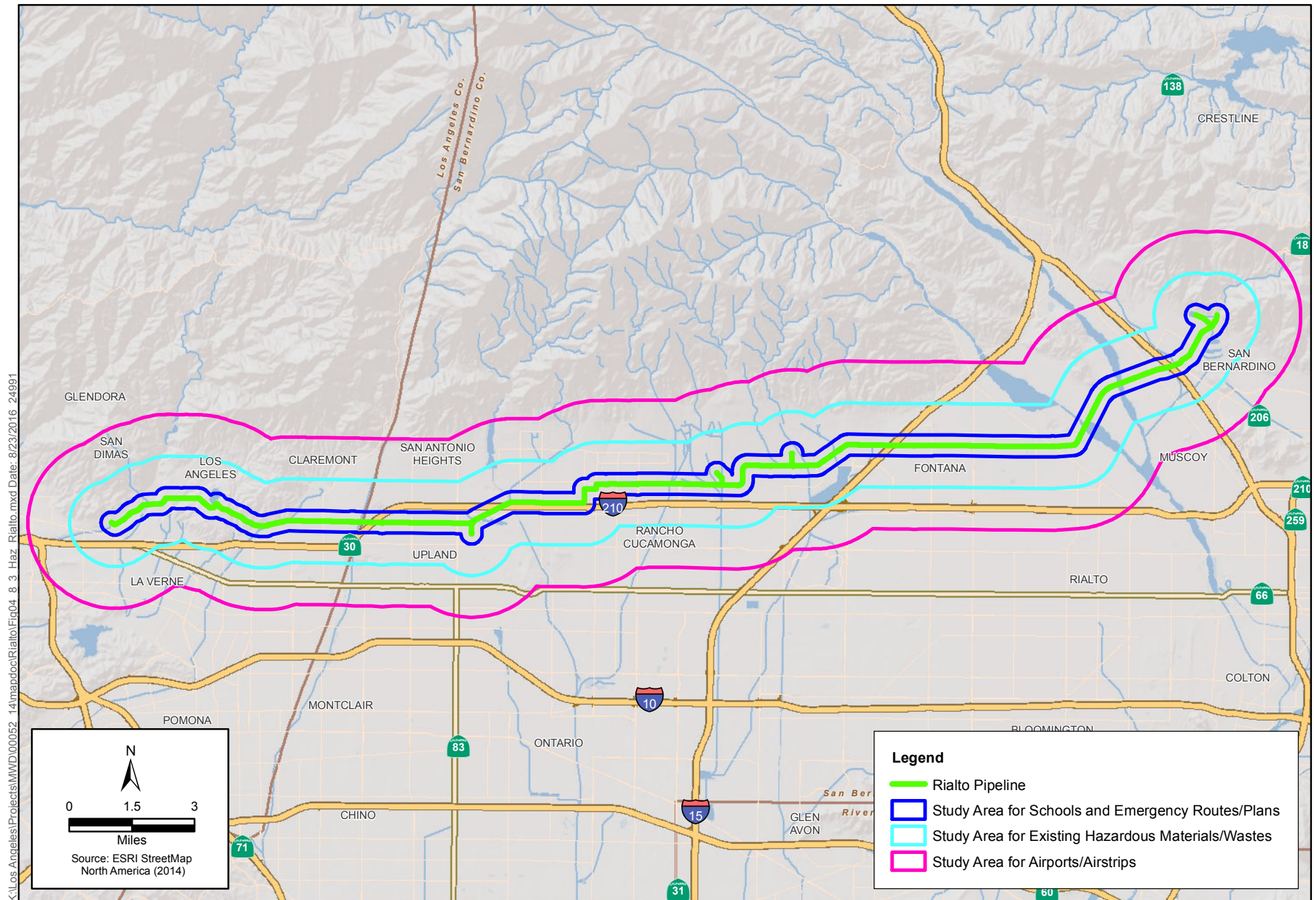


Figure 4.8-3
Rialto Pipeline Hazards Study Area
Metropolitan PCCP Program

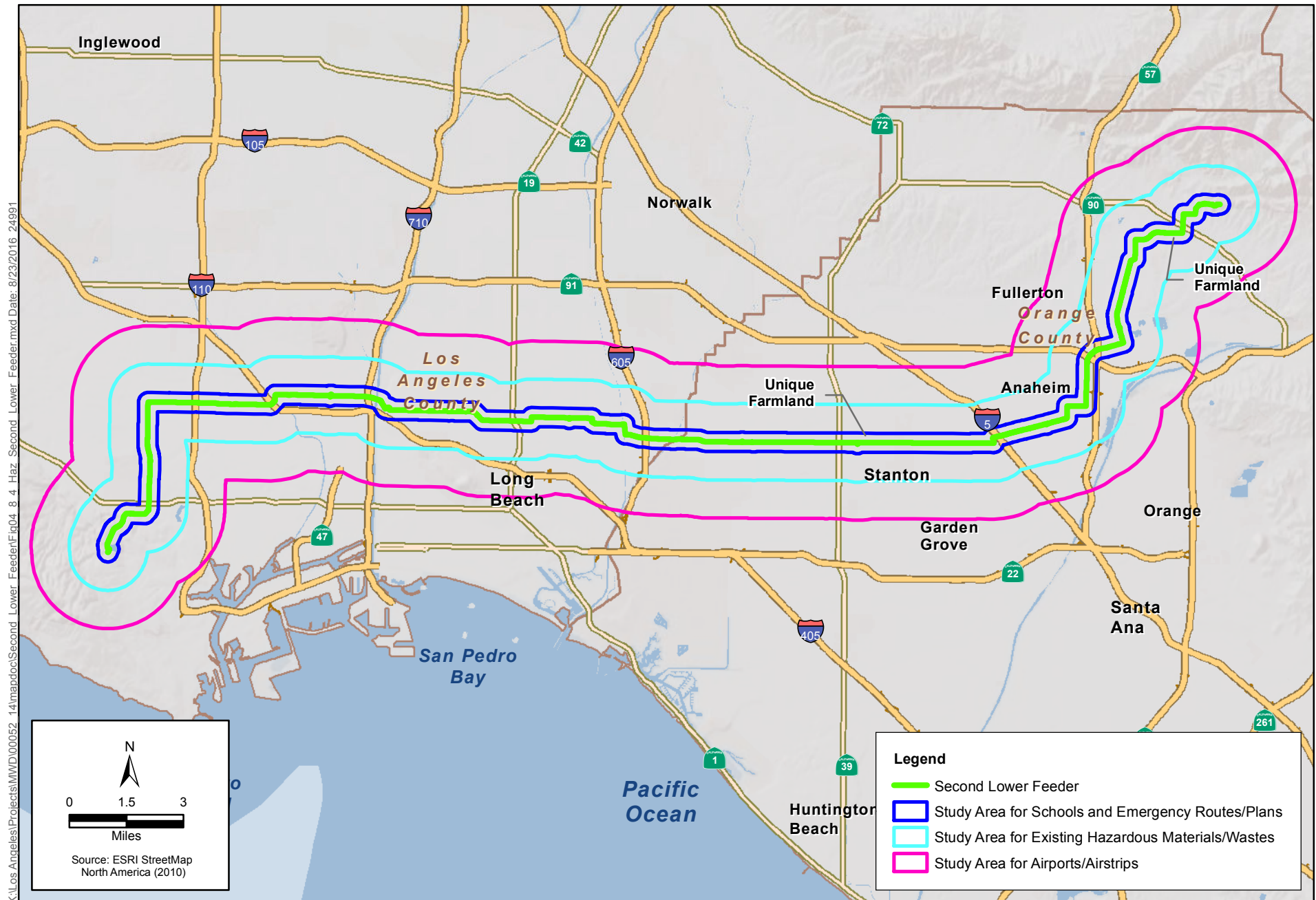


Figure 4.8-4
Second Lower Feeder Hazards Study Area
Metropolitan PCCP Program

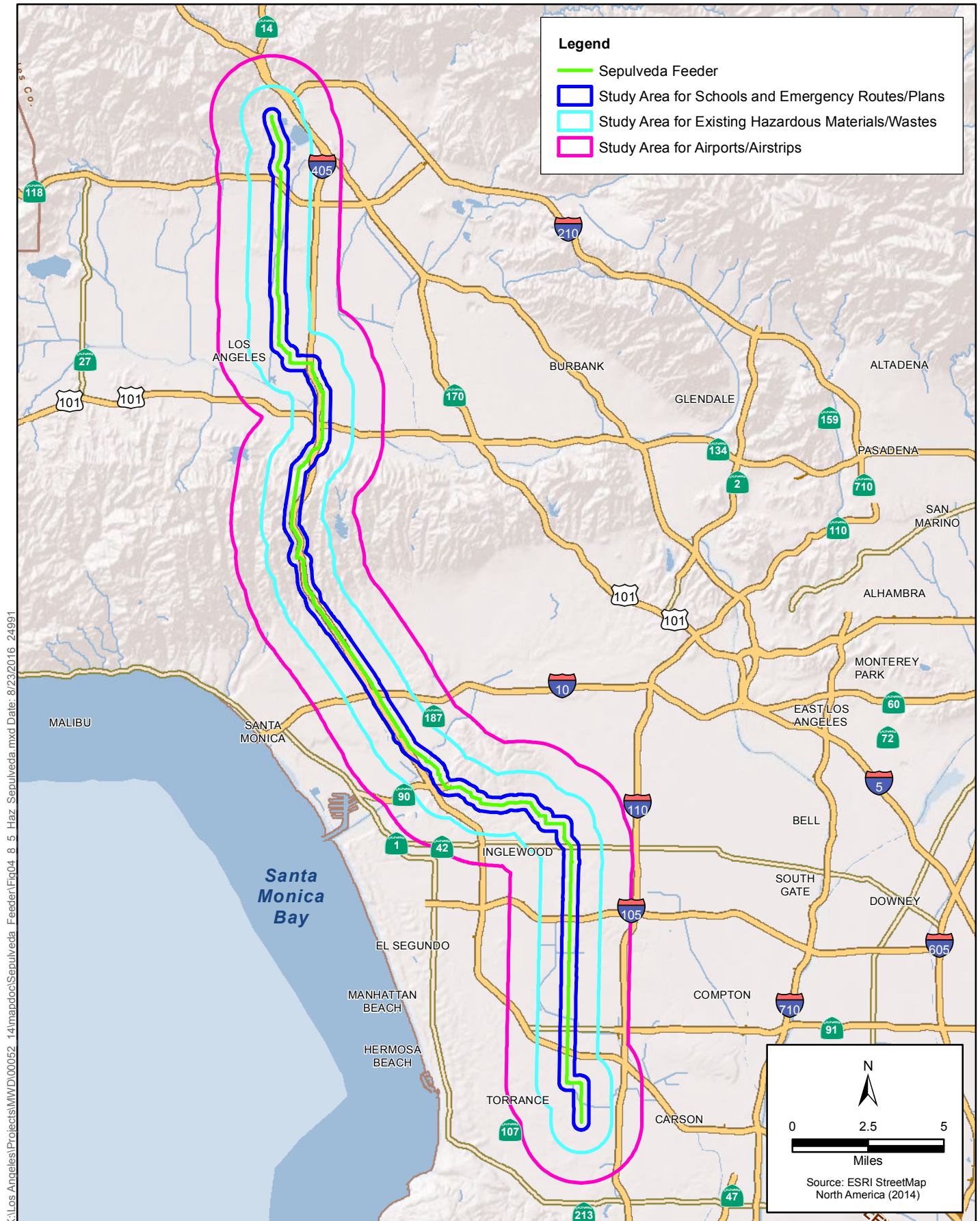


Figure 4.8-5
Sepulveda Feeder Hazards Study Area
Metropolitan PCCP Program

and contamination to both soil and groundwater. Initial environmental studies associated with the site identified 21 areas as potentially impacted on site, including the following.

- three landfill sites containing both hazardous and solid waste
- buried drums containing explosives
- low-level radioactive waste
- areas where PCBs, battery acids, leaded fuels, and other hazardous substances had been released

The site has undergone a multitude of studies and remedial activities. The site is listed as “currently on the Final NPL.” The Allen-McColloch Pipeline study area passes through the northeastern portion of the El Toro Marine Corps Air Station NPL site.

Schools

Table 4.8-3 lists schools within 0.25 mile of the Allen-McColloch Pipeline.

Table 4.8-3. Schools in the Allen-McColloch Pipeline Study Area

School	Address	Approximate Distance from Allen-McColloch Pipeline
La Entrada High	4999 Casa Loma Avenue, Yorba Linda	70 feet east
Fairmont Elementary	5241 Fairmont Boulevard, Yorba Linda	60 feet west
Bernardo Yorba Middle	5350 Fairmont Boulevard, Yorba Linda	30 feet east
Woodsboro Elementary	7575 E. Woodsboro Avenue, Anaheim	0.25 mile east
Canyon High	220 S. Imperial Highway, Anaheim	30 feet east
Imperial Elementary	400 S. Imperial Highway, Anaheim	30 feet east
Portola Springs Elementary	12100 Portola Springs, Irvine	0.20 mile west
El Toro High	25255 Toledo Way, Lake Forest	0.23 mile west
Grace Christian Elementary	26052 Trabuco Road, Lake Forest	90 feet west

Public Airports, Airport Land Use Plans, and Private Airstrips

There are no public airports, applicable airport land use plans, or private airstrips in the study area for the Allen-McColloch Pipeline.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency response and evacuation plans have been identified in the study area for the Allen-McColloch Pipeline.

- **City of Orange:** According to the City of Orange General Plan, Public Safety Element, all arterials in the city are recognized as primary emergency response routes. (City of Orange 2010)
- **City of Tustin:** According to the Tustin General Plan, Public Safety Element, Jamboree Road is an evacuation route in the Allen-McColloch Pipeline study area. (City of Tustin 2013)

- **City of Mission Viejo:** According to the City of Mission Viejo General Plan, Public Safety Element, there are city evacuation routes along Trabuco Road and Los Alisos Boulevard within the Allen-McColloch Pipeline study area. (City of Mission Viejo 2009)

Wildland Fire

According to the California Department of Forestry and Fire Protection (CAL FIRE), the Allen-McColloch Pipeline study area passes through a very high fire hazard severity zone in Santiago Oaks Regional Park just south of State Route 91 (SR-91) and in Limestone Canyon Regional Park along State Route 241 (SR-241)/State Route 261 (SR-261) (CAL FIRE 2011a).

4.8.2.2 Calabasas Feeder

Known Hazardous Materials Sites

According to information obtained from the EDR report, there are multiple hazardous materials sites within 1 mile of the Calabasas Feeder alignment. Table 4.8-4 shows the number of sites identified in federal, state and local, tribal, and EDR proprietary databases.

Table 4.8-4. Known Hazardous Materials Sites in the Calabasas Feeder Study Area

Type of Database	Number of Sites Identified in EDR Report
Federal Records	279
State and Local Records	1,009
Tribal Records	0
EDR Proprietary Records	169

Schools

Table 4.8-5 lists schools within 0.25 mile of the Calabasas Feeder.

Table 4.8-5. Schools in the Calabasas Feeder Study Area

School	Address	Approximate Distance from Calabasas Feeder
Academy for Advancement of Children with Autism	10824 Topanga Canyon Boulevard, Chatsworth (Los Angeles)	0.20 mile northwest
Nevada Avenue Elementary	22120 Chase Street, West Hills (Los Angeles)	20 feet south
Capistrano Avenue Elementary	8118 Capistrano Avenue, West Hills (Los Angeles)	30 feet north
Ingenium Charter	22250 Elkwood Street, Los Angeles	0.20 mile southeast
First United Methodist Preschool	22700 Sherman Way, West Hills (Los Angeles)	0.06 mile east
Enadia Way Elementary	22944 Enadia Way, West Hills (Los Angeles)	0.12 mile west

School	Address	Approximate Distance from Calabasas Feeder
Hamlin Charter Academy	22627 Hamlin Street, West Hills (Los Angeles)	0.12 mile east
Calabash Charter Academy	23055 Eugene Street, Woodland Hills (Los Angeles)	0.22 mile southeast

Public Airports, Airport Land Use Plans, and Private Airstrips

There are no public airports, airport land use plans, or private airstrips within 2 miles of the Calabasas Feeder alignment.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency response and evacuation plans have been identified in the study area for the Calabasas Feeder.

- **City of Los Angeles:** According to the City of Los Angeles General Plan, Safety Element, there is a city disaster route on State Route 27 (SR-27) (Topanga Canyon Boulevard) in the Calabasas Feeder study area. (City of Los Angeles 1996)
- **City of Hidden Hills:** According to the Hidden Hills General Plan, Safety Element, there is an evacuation route on Long Valley Road in the Calabasas Feeder study area. (City of Hidden Hills 1995)

Wildland Fire

There are no high fire hazard severity zones in the Calabasas Feeder study area.

4.8.2.3 Rialto Pipeline

Known Hazardous Materials Sites

According to information obtained from the EDR report, there are multiple hazardous materials sites within 1 mile of the Rialto Pipeline alignment. Table 4.8-6 shows the number of sites identified in federal, state and local, tribal, and EDR proprietary databases.

Table 4.8-6. Known Hazardous Materials Sites in the Rialto Pipeline Study Area

Type of Database	Number of Sites Identified in EDR Report
Federal Records	110
State and Local Records	417
Tribal Records	0
EDR Proprietary Records	61

B.F. Goodrich

Amongst the sites identified in the federal records in Table 4.8-6 is the B.F. Goodrich site at 3196 N. Locust Avenue, Rialto. The site is a 160-acre NPL site with impacted soil and groundwater. Contaminants of concern include perchlorate, trichloroethene, and various other chemicals. The site was used initially by the U.S. Army as a rail and storage facility for bombs, ammunition, and other ordinances. In the late 1950s and early 1960s, the B.F. Goodrich Corporation used the facility for research, development, testing, and production of solid-fuel rocket propellant and solid-fuel missile and rocket motors. The property has also been occupied by defense contractors, fireworks manufacturers, and other users. Various investigations and remediation efforts have been conducted on site. The site is listed as “currently on the Final NPL.” The Rialto Pipeline passes approximately 50 feet north of the B.F. Goodrich site along West Casa Grande Drive.

Newmark Ground Water Contamination

The Newmark Ground Water Contamination site is within the Newmark Well Field in San Bernardino. The Newmark Well Field is an area of approximately 700 square feet bounded by 48th Street, Magnolia Drive, Reservoir Drive, and the San Bernardino County Flood Control Channel. Various wells in the Newmark Well Field have been closed since the 1980s due to high levels of halogenated organic chemicals, including tetrachloroethylene and trichloroethylene. Impacts have been attributed to historic dumping occurring in the area from the late 1950s to the early 1960s. Remediation in the area has been ongoing since the late 1980s. The Rialto Pipeline passes through the northwestern portion of the contaminant plume.

Schools

Table 4.8-7 lists schools within 0.25 mile of the Rialto Pipeline.

Table 4.8-7. Schools in the Rialto Pipeline Study Area

School	Address	Approximate Distance from Rialto Pipeline
Kucera Middle	2140 W Buena Vista Drive, Rialto	0.21 mile north
Caryn Elementary	6290 Sierra Crestview Loop, Alta Loma (Rancho Cucamonga)	0.10 mile south
Los Osos High	6001 Milliken Avenue, Rancho Cucamonga	90 feet north
Chaffey College	5885 Haven Avenue, Rancho Cucamonga	100 feet north
Banyan Elementary	10900 Mirador Drive, Rancho Cucamonga	50 feet south
Rancho Heritage	9488 19th Street, Alta Loma (Rancho Cucamonga)	0.16 mile south
Pioneer Junior High	245 W 18th Street, Upland	90 feet north
Pepper Tree Elementary	1045 W 18th Street, Upland	50 feet north
Western Christian Schools	3105 Padua Avenue, Claremont	0.14 mile south
The Webb Schools	1175 W Baseline Road, Claremont	100 feet south

Public Airports, Airport Land Use Plans, and Private Airstrips

The Rialto Municipal Airport is 1.7 miles to the south of the Rialto Pipeline. The Cable Airport is approximately 1 mile south of the Rialto Pipeline. There are no private airstrips in the Rialto Pipeline study area.

Airport Land Use Plan for Rialto Municipal Airport

An airport land use plan (ALUP) is adopted for a public airport to provide for the orderly growth of the airport and the area surrounding the airport. The ALUP for the Rialto Municipal Airport was adopted in 1991 and is called the *Final Comprehensive Land Use Plan: Rialto Municipal Airport* (San Bernardino County ALUC 1991).

According to Figure III-7 of the ALUP for Rialto Municipal Airport, the Rialto Pipeline is just north and outside of the airport's safety zones, which are areas in the vicinity of the airport in which land use restrictions are established to protect the safety of the public. Because the Rialto Pipeline is outside the safety zones, the Rialto Airport ALUP is not applicable to the proposed program.

Airport Land Use Plan for Cable Airport

The ALUP for the Cable Airport was adopted in 1981 and is called the *Cable Airport Comprehensive Airport Land Use Plan* (West Valley Planning Agency ALUC 1981).

According to Figure 3 of the ALUP for Cable Airport, the Rialto Pipeline does not encroach into any of the airport's planning area boundaries. Therefore, the Cable Airport ALUP is not applicable to the proposed program.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency route has been identified in the study area for the Rialto Pipeline.

- **County of San Bernardino:** According to the San Bernardino County General Plan, Safety Element, there are county evacuation routes on Interstate 210 (I-210), Interstate 15 (I-15), Interstate 215 (I-215), and State Route 83 (SR-83) (Euclid Avenue). (San Bernardino County 2014)

Wildland Fire

According to CAL FIRE, the Rialto Pipeline study area passes through a very high fire hazard severity zone in the cities of San Bernardino (CAL FIRE 2008), Claremont, and La Verne (CAL FIRE 2011b).

4.8.2.4 Second Lower Feeder

Known Hazardous Materials Sites

According to information obtained from the EDR report, there are multiple hazardous materials sites within 1 mile of the Second Lower Feeder alignment. Table 4.8-8 shows the number of sites identified in federal, state and local, tribal, and EDR proprietary databases.

Table 4.8-8. Known Hazardous Materials Sites in the Second Lower Feeder Study Area

Type of Database	Number of Sites Identified in EDR Report
Federal Records	667
State and Local Records	2,680
Tribal Records	0
EDR Proprietary Records	280

Montrose Chemical Corp

The Montrose Chemical Corp is at 20201 S. Normandie Avenue, Torrance. It is a 13-acre site that was identified as having impacted soil and groundwater. Historic operations at the site included formulation, grinding, packaging, and distribution of dichloro-diphenyltrichloroethane (also known as DDT). During its 35 years of operation, the Montrose plant released hazardous contaminants into the surrounding environment, including surface soils, surface drainage, stormwater pathways, sanitary sewers, the Pacific Ocean, and groundwater. The U.S. Environmental Protection Agency (EPA) began oversight of the site in 1983. Numerous investigations and remediation efforts have been conducted to address contamination. The site is listed as “currently on the Final NPL.” The Second Lower Feeder passes approximately 0.08 mile south of the Montrose Chemical Corp site plume.

Schools

Table 4.8-9 lists schools within 0.25 mile of the Second Lower Feeder.

Table 4.8-9. Schools in the Second Lower Feeder Study Area

School	Address	Approximate Distance from Second Lower Feeder
Lakeview Elementary	17510 Lakeview Avenue, Yorba Linda	0.24 mile southeast
Little Friends Preschool	4221 Rose Drive, Yorba Linda	50 feet north
George Key	710 Golden Avenue, Placentia	0.22 mile northwest
Brookhaven Elementary	1851 Brookhaven Avenue, Placentia	50 feet west
El Dorado High	1651 Valencia Avenue, Placentia	20 feet east
Valencia High	500 Bradford Avenue, Placentia	0.10 mile west
Kraemer Middle	645 N. Angelina Drive, Placentia	70 feet west
Sunkist Elementary	500 N. Sunkist Street, Anaheim	20 feet east
South Junior High	2320 E. South Street, Anaheim	50 feet south
Theodore Roosevelt Elementary	1600 E. Vermont Avenue, Anaheim	30 feet south
Palm Lane Elementary	1646 W. Palm Lane, Anaheim	0.16 mile south
Loara High	1765 W. Cerritos Avenue, Anaheim	0.22 mile south
Gilbert High	1800 W. Ball Road, Anaheim	20 feet south
Magnolia High	2450 W. Ball Road, Anaheim	20 feet south
Dale Junior High	900 S. Dale Avenue, Anaheim	90 feet north

School	Address	Approximate Distance from Second Lower Feeder
Hansen Elementary	1300 S. Knott Avenue, Anaheim	0.09 mile south
Cypress High	9801 Valley View Street, Cypress	0.14 mile north
Los Alamitos High	3591 Cerritos Avenue, Los Alamitos	0.18 mile south
Keller Elementary	7020 E. Brittain Street, Long Beach	0.06 mile north
Henry K-8	3720 Canehill Avenue, Long Beach	50 feet north
Burcham Elementary	5610 E. Monlaco Road, Long Beach	0.20 mile south
Long Beach City College	4901 E. Carson Street, Long Beach	0.20 mile northwest
Charles Evans Hughes Middle	3846 California Avenue, Long Beach	50 feet north
Longfellow Elementary	3800 Olive Avenue, Long Beach	30 feet north
Los Cerritos Elementary	515 W San Antonio Drive, Long Beach	50 feet northwest
Rancho Dominguez Preparatory	4110 Santa Fe Avenue, Long Beach	50 feet north
Del Amo Elementary	21228 Water Street, Carson	0.25 mile north
Carnegie Middle	21820 Bonita Street, Carson	50 feet north
Bonita Street Elementary	21929 Bonita Street, Carson	30 feet north
Saint Philomena	21832 S Main Street, Carson	0.06 mile north
White Middle	22102 S Figueroa School, Carson	40 feet south
Meyler Street Elementary	1123 W 223rd Street, Torrance	0.13 mile south
Narbonne High	24300 S Western Avenue, Harbor City	50 feet east
Harbor City Elementary	1508 254th Street, Harbor City	0.20 mile east

Public Airports, Airport Land Use Plans, and Private Airstrips

The Joint Forces Training Base Los Alamitos is 1.2 miles south of the Second Lower Feeder. The pipeline runs through the northern portion of the Long Beach Municipal Airport. The Torrance Municipal Airport is 1.2 miles west of the Second Lower Feeder.

Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos

The ALUP for the Joint Forces Training Base Los Alamitos is the *Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos* adopted in 2002 (ALUC of Orange County 2015).

According to Appendix D of the ALUP for the Joint Forces Training Base Los Alamitos, the Second Lower Feeder is not within the airport's runway protection zones or clear zones, but is within a notification area. The notification areas are established to ensure that structures that may affect day-to-day airport operations are not built in their vicinities.

Los Angeles County Airport Land Use Plan

The *Los Angeles County Airport Land Use Plan* covers numerous airports in Los Angeles County, including Long Beach Municipal Airport (Los Angeles County ALUC 2004).

According to the Airport Influence Area map for the Long Beach Municipal Airport in the ALUP, the Second Lower Feeder crosses the northern portion of the airport property, within the airport's planning boundary/airport influence area and a runway protection zone. Runway protection zones are intended to provide for the unobstructed passage of landing aircraft through the above airspace. These zones are the most critical safety areas under the approach paths and should be kept free of all obstructions. No structures or congregation of people are allowed within runway protection zones.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency response and evacuation plans have been identified in the study area for the Second Lower Feeder.

- **City of Lakewood:** According to the City of Lakewood General Plan, Safety Element, all city arterials are recognized as primary evacuation routes. (City of Lakewood 1995)
- **City of Carson:** According to the City of Carson, Safety Element, there are city evacuation routes on Carson Street, Santa Fe Avenue, Alameda Street, Wilmington Avenue, Avalon Boulevard, Main Street, Figueroa Street, and Broadway in the Second Lower Feeder study area. (City of Carson 1982)
- **City of Los Angeles:** According to the City of Los Angeles General Plan, Safety Element, Normandie Avenue and Vermont Avenue are city disaster routes in the Second Lower Feeder study area. (City of Los Angeles 1996)
- **City of Lomita:** According to the City of Lomita General Plan, Safety Element, city evacuation routes are located on Pacific Coast Highway, Western Avenue, Narbonne Avenue, and Lomita Boulevard in the Second Lower Feeder study area. (City of Lomita 1998)
- **City of Rolling Hills Estates:** According to the Rolling Hills Estates General Plan, Safety Element, city emergency evacuation routes are located on Palos Verdes Drive East and Palos Verdes Drive North in the Second Lower Feeder study area. (City of Rolling Hills Estates 1992)

Wildland Fire

According to CAL FIRE, the Second Lower Feeder study area passes through very high fire hazard severity zones in the cities of Yorba Linda (CAL FIRE 2011a) and Rolling Hills Estates (CAL FIRE 2011b).

4.8.2.5 Sepulveda Feeder

Known Hazardous Materials Sites

According to information obtained from the EDR report, there are multiple hazardous materials sites within 1 mile of the Sepulveda Feeder alignment. Table 4.8-10 shows the number of sites identified in federal, state and local, tribal, and EDR proprietary databases.

Table 4.8-10. Known Hazardous Materials Sites in the Sepulveda Feeder Study Area

Type of Database	Number of Sites Identified in EDR Report
Federal Records	1,077
State and Local Records	3,594
Tribal Records	0
EDR Proprietary Records	683

Del Amo

The Del Amo site is a 280-acre NPL site in the city of Los Angeles that was identified in the EDR report as having impacted groundwater. A synthetic rubber manufacturing facility operated at the site from the early 1940s to the early 1970s. A groundwater investigation conducted in 1998 identified multiple areas of concern connected to the on-site groundwater contamination. Contaminants of concern have included various volatile organic compounds and semi-volatile organic compounds such as benzene, toluene, ethylbenzene, and naphthalene. Numerous investigations and remediation efforts have been conducted to address contamination. The site is listed as “currently on the Final NPL.” The Sepulveda Feeder passes approximately 0.8 mile west of the Del Amo site.

Montrose Chemical Corp

See Section 4.8.2.4 for a description of the Montrose Chemical Corp site. The Sepulveda Feeder passes approximately 0.13 mile west of the Montrose Chemical Corp site plume.

Schools

Table 4.8-11 lists schools within 0.25 mile of the Sepulveda Feeder.

Table 4.8-11. Schools in the Sepulveda Feeder Study Area

School	Address	Approximate Distance from Sepulveda Feeder
Knollwood Elementary	11822 Gerald Avenue, Granada Hills	0.06 mile east
John F. Kennedy High	11254 Gothic Avenue, Granada Hills	0.25 mile east
Tulsa Street Elementary	10900 Hayvenhurst Avenue, Granada Hills	20 feet east
Saint John Baptist de la Salle	16535 Chatsworth Street, Granada Hills	20 feet east
Mayall Street Elementary	16701 Mayall Street, North Hills (Los Angeles)	0.08 mile west
Saint Bridget of Sweden	7120 Whitaker Avenue, Lake Balboa (Los Angeles)	0.23 mile west
Berkeley Hall	16000 Mulholland Drive, Los Angeles	0.08 mile west
Milken Community Middle	15900 Mulholland Drive, Los Angeles	0.08 mile east
Milken Community High	15800 Zeldins Way, Los Angeles	0.15 mile east
Daniel Webster Middle	11330 Graham Place, Los Angeles	0.23 mile west
Clover Avenue Elementary	11020 Clover Avenue, Los Angeles	0.12 mile east
Charnock Road Elementary	11133 Charnock Road, Los Angeles	30 feet east

School	Address	Approximate Distance from Sepulveda Feeder
Culver City High	4401 Elenda Street, Culver City	0.18 mile northeast
Frank D. Parent K-8	5354 West 64th Street, Inglewood.	30 feet south
La Tijera Elementary	1415 N. La Tijera Boulevard, Inglewood	30 feet north
Centinela Elementary	1123 N. Marlborough Avenue, Inglewood	0.13 mile south
Freeman Elementary	2602 W. 79th Street, Inglewood	50 feet west
El Nido Family Center	2152 W. Manchester Avenue, Los Angeles	50 feet east
Saint Eugene	9521 Haas Avenue, Los Angeles	50 feet east
Century Park Elementary	10935 Spinning Avenue, Inglewood	0.07 mile west
Cimarron Avenue Elementary	11559 Cimarron Avenue, Hawthorne	0.06 mile east
Purche Avenue Elementary	13210 Purche Avenue, Gardena	0.06 mile west
Junipero Serra High	14830 S. Van Ness Avenue, Gardena	30 feet east
One Hundred Fifty-Sixth Street	2100 W. 156th Street, Gardena	50 feet east
Lincoln Elementary	2418 166th Street, Torrance	50 feet west
Casimir Middle	17220 Casimir Avenue, Torrance	0.06 mile west
Arlington Elementary	17800 Van Ness Avenue, Torrance	30 feet east

Public Airports, Airport Land Use Plans, and Private Airstrips

The Sepulveda Feeder runs parallel and adjacent to the western side of the Van Nuys Airport. The Santa Monica Municipal Airport is approximately 1.1 miles west of the Sepulveda Feeder. The Hawthorne Municipal Airport is 0.5 mile west of the Sepulveda Feeder. There are no private airstrips in the Sepulveda Feeder study area.

Los Angeles County Airport Land Use Plan

Van Nuys Airport, Santa Monica Municipal Airport, and Hawthorne Airport are all covered by the *Los Angeles County Airport Land Use Plan*, adopted in 1991 (Los Angeles County ALUC 2004).

According to the ALUP's Airport Influence Area map for the Van Nuys Airport, the Sepulveda Feeder is in the airport's planning boundary/airport influence area, within the northern and southern runway protection zones. As discussed in Section 4.8.2.4 for the Long Beach Airport, runway protection zones are intended to provide for the unobstructed passage of landing aircraft through the above airspace. These zones are the most critical safety areas under the approach paths and should be kept free of all obstructions. No structures or congregation of people are allowed within runway protection zones.

According to the ALUP's Airport Influence Maps for Santa Monica Municipal Airport and Hawthorne Municipal Airport, the Second Lower Feeder is not within either airport's planning boundaries. Therefore, the sections of the ALUP for these airports are not applicable to the proposed program.

Emergency Response Plans and Emergency Evacuation Plans

The following evacuation routes have been identified in the study area for the Sepulveda Feeder.

- **Inglewood:** According to the Inglewood General Plan, Safety Element, city evacuation routes are located on La Cienega Boulevard, East Florence Avenue, Crenshaw Boulevard, and South Van Ness Avenue in the Sepulveda Feeder study area. (City of Inglewood 1995)

Wildland Fire

According to CAL FIRE, the Sepulveda Feeder study area passes through a high fire hazard severity zone in the Westbridge-Canyonback Wilderness Park (CAL FIRE 2011b).

4.8.3 Regulatory Framework

This section describes the plans, policies, and regulations related to hazards and hazardous materials that are applicable to the proposed program.

4.8.3.1 Federal

Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.)

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 et seq. The RCRA was established in 1976 to protect human health and the environment, reduce waste, conserve energy and natural resources, and eliminate generation of hazardous waste. Under the authority of the RCRA, the regulatory framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste, is found in 40 CFR 260–299.

Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 103)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as “Superfund,” was enacted by Congress on December 11, 1980. This law (42 U.S.C. 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund for cleanup when no responsible party can be identified. CERCLA also enabled revision of the National Contingency Plan (NCP). The NCP (Title 40, CFR Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the NPL. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Clean Air Act (42 U.S.C. § 7401 et seq.)

The Clean Air Act was first enacted in 1963 but has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The act establishes the National Ambient Air Quality Standards and specifies future dates for achieving compliance. The Clean Air Act also mandates that the states submit and implement State Implementation Plans for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met.

Clean Water Act (33 U.S.C. 1251 et seq.)

The Clean Water Act is the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The Clean Water Act prohibits any discharge of pollutants into the nation's waters unless specifically authorized by a permit.

Toxic Substance Control Act (15 U.S.C. § 2601 et seq.)

The Toxic Substances Control Act became law on October 11, 1976. The act authorized EPA to secure information on all new and existing chemical substances, as well as to control any of the substances that were determined to cause unreasonable risk to public health or the environment.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance) are examples.

Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law 101-615)

Congress enacted the Hazardous Materials Transportation Uniform Safety Act in 1990 to clarify conflicting state, local, and federal hazardous materials transportation regulations. The act requires the Secretary of Transportation to promulgate regulations for the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The Secretary also retains authority to designate materials as hazardous when they pose unreasonable risks to health, safety, or property. The statute includes provisions to encourage uniformity among different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials.

4.8.3.2 State

California Public Resources Code, Section 21151.4

Section 21151.4 of the California Public Resources Code states that an EIR shall not be certified and a negative declaration shall not be approved for any project within 1/4 of a mile of a school involving the construction or alteration of a facility that might reasonably be anticipated to emit hazardous air emissions, handle extremely hazardous air emissions, or handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code.

Porter-Cologne Water Quality Control Act (Cal. Water Code § 13000 et seq.)

Sites that have contaminated groundwater fall within the jurisdiction of the Regional Water Quality Control Board and are subject to the requirements of the Porter-Cologne Water Quality Control Act.

Contaminated groundwater that is proposed to be discharged to surface waters or to a publicly owned treatment works would be subject to the applicable provisions of the Clean Water Act, including permitting and possibly pretreatment requirements. A National Pollutant Discharge Elimination System permit is required to discharge pumped groundwater to surface waters, including local storm drains, in accordance with California Water Code Section 13260. Additional restrictions may be imposed upon discharges to water bodies that are listed as impaired under Section 303(d) of the Clean Water Act.

Hazardous Materials Release Response Plans and Inventory Law (Cal. Health and Safety Code § 25500 et seq.)

Business and area plans were established to protect public health and safety and the environment from the handling and release or threatened release of hazardous materials. The establishment of a statewide environmental reporting system for these plans is a statewide requirement. Information related to the location, type, quantity, and health risks of hazardous materials handled, used, stored, or disposed of in the state is required to be submitted to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, etc. The information provided by business and area plans is necessary in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials.

Hazardous Waste Control Act (Cal. Health and Safety Code § 25100 et seq.)

The Department of Toxic Substances Control is responsible for the enforcement of the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65, Cal. Health and Safety Code § 25249.5 et seq.)

The Safe Drinking Water and Toxic Enforcement Act of 1986 states that no person in the course of doing business shall knowingly discharge or release a chemical known to the state to cause cancer or reproductive toxicity into water or onto or into land where such chemical passes or probably will pass into any source of drinking water.

Cortese List Statute (Cal. Gov. Code § 65962.5 et seq.)

California Government Code 65962.5 (commonly referred to as the Cortese List) includes Department of Toxic Substances Control-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the State Water Resources Control Board as having underground storage tank leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

4.8.3.3 Local

Table 4.8-12 lists the applicable hazards and hazardous materials regulations for the proposed program.

Table 4.8-12. Applicable Regulations Related to Hazards and Hazardous Materials for the Proposed Program

Title of Plan, Policy, Regulation (date)	Applicable Regulation
Allen-McColloch Pipeline	
County of Orange General Plan Safety Element 2014	Goals, Objectives, and Policies 2: To respond to all emergency incidents to oversee and ensure that these incidents involving hazardous waste and medical waste are properly mitigated. Goals, Objectives, and Policies 6: To implement and administer all mandated laws, regulations, and ordinances relating to hazardous materials, hazardous waste, and medical waste.
City of Yorba Linda General Plan Public Safety Element 1993	Goal 7: Protect public health, safety and welfare and the environment from exposure to hazardous materials and waste.
City of Anaheim General Plan Safety Element 2004	Goal 4.1: Decrease the risk of exposure for life, property and the environment to hazardous materials and hazardous waste.
City of Orange General Plan Public Safety Element 2010	Goal 4.0: Minimize risks to life, property, and the environment associated with producing, using, storing, or transporting hazardous materials.
City of Tustin General Plan Public Safety Element 2013	Goal 4: Reduce the risk to the community's inhabitants from exposure to hazardous materials and wastes.
City of Irvine General Plan Safety Element 2012	Objective J-2 Policy (d): Continue to maintain and implement the City of Irvine's Emergency Plan.
City of Lake Forest General Plan Safety and Noise Element 1994	Policy 2.2: Reduce the risk to the community from the use and transport of hazardous materials.
Calabasas Feeder	
Safety Element of the Los Angeles City General Plan 1996	VII-24: Enforce the requirement that industrial facilities and construction sites have adequate Hazardous Materials Handling and Spill Response Plans to ensure that the goals of pollutant control are consistent with the City's public safety needs and the General Plan's water quality objectives.
City of Calabasas 2030 General Plan Safety Element	Policy VII-21: Manage activities within Calabasas involving the transport, use, store or dispose of hazardous materials in a responsible manner that protects public health, safety, and the environment.
Rialto Pipeline	
City of San Bernardino General Plan Safety Chapter 2005	Goal 10.1: Protect the environment, public health, safety, and welfare from hazardous wastes. Goal 10.12: Ensure the availability and effective response of emergency services in the event of a disaster.

Title of Plan, Policy, Regulation (date)	Applicable Regulation
County of San Bernardino General Plan Safety Element 2007	Goal S2: The County will minimize the generation of hazardous waste in the County and reduce the risk posed by storage, handling, transportation, and disposal of hazardous wastes. Goal S 9: The County's emergency evacuation routes will quickly and efficiently evacuate all residents in the event of wildland fires and other natural disasters, and will ensure adequate access of emergency vehicles to all communities.
City of Rialto General Plan The Safety and Noise Chapter 2010	Goal 5-4: Protect the health and welfare of the public, environment, and economy by providing for the safe and responsible management of hazardous materials and wastes Goal 5-7: Maintain a high level of emergency response capability.
City of Fontana General Plan Safety Element 2003	Goal 5 Policy 1: The City shall strive to reduce the potential for residents, workers, and visitors to Fontana to being exposed to hazardous materials and wastes.
Rancho Cucamonga General Plan Public Health and Safety 2010	Goal PS-3: Protect City residents, businesses, and employees from the potential hazards associated with the use, storage, transport, and disposal of hazardous materials in and through Rancho Cucamonga.
City of Upland General Plan Safety Element 2015	Goal SAF-5: A community protected from harmful effects of hazardous materials and waste. Goal SAF-6: Risks associated with aircraft operations at Cable Airport and Ontario International Airport are minimized.
City of Claremont General Plan Public Safety 2009	Goal 6-2: Minimize the risk of injury loss of life and damage to property resulting from natural and human-caused disasters and conditions. Goal 6-7: Minimize the risks associated with urban and wildland fires. Goal 6-8: Minimize the improper storage and dumping of hazardous waste materials.
County of Los Angeles General Plan 2015	Goal S 4: Maintain effective County emergency response management capabilities.
City of La Verne General Plan Public Safety 1998	Goal 3 Policy 3.1: Protect the public from the dangers of hazardous waste use and transport.
City of San Dimas General Plan Safety Element 1991	Objective 1.3: Provide for the safe use and transportation of hazardous materials and wastes.
Second Lower Feeder	
County of Orange General Plan Safety Element 2014	Goals, Objectives, and Policies 6): To implement and administer all mandated laws, regulations, and ordinances relating to hazardous materials, hazardous waste, and medical waste.
City of Yorba Linda General Plan/EIR Public Safety Element 1993	Goal 8: Limit the transport of hazardous materials through the City of Yorba Linda in conformance with the State and County HAZMAT program.
City of Anaheim General Plan Safety Element 2004	Goal 4.1: Decrease the risk of exposure for life, property and the environment to hazardous materials and hazardous waste.

Title of Plan, Policy, Regulation (date)	Applicable Regulation
Buena Park General Plan Safety Element 2010	Goal SAF-4: Minimized threat to the public health and safety and to the environment posed by a release of hazardous materials.
Cypress General Plan Safety Element 2000	SAF-3: Minimize risks to life and property associated with the handling, transporting, treating, generating, and storing of hazardous materials
Los Alamitos General Plan Public Facilities and Safety Element 2015	Policy 2.6 Hazardous materials: The use and storage of hazardous materials shall comply with applicable federal, state, and local laws to prevent and mitigate hazardous materials releases.
City of Long Beach General Plan Program Public Safety Element 1975	Protection Goal 2: Protect existing land uses from the intrusion of safety hazards. Protection Goal 3: Reduce public exposure to safety hazards.
City of Lakewood Comprehensive General Plan Safety Element 1996	Goal 7.0: To ensure that the generation of hazardous waste is reduced, through elimination or recycling, to maximum extent feasible.
City of Carson General Plan Safety Element 1981	SAF-4: Minimize the threat to the public health and safety and to the environment posed by a release of hazardous materials.
Safety Element of the Los Angeles City General Plan 1996	Goal 1: A city where potential injury, loss of life, property damage and disruption of the social and economic life of the City due to fire, water related hazard, seismic event, geologic conditions or release of hazardous materials disasters is minimized.
City of Torrance General Plan Safety Element 2010	Objective S.4: To reduce the risk associated with the use, storage, transport, or disposal of hazardous waste.
Sepulveda Feeder	
Safety Element of the Los Angeles City General Plan 1996	VII-24: Enforce the requirement that industrial facilities and construction sites have adequate Hazardous Materials Handling and Spill Response Plans to ensure that the goals of pollutant control are consistent with the City's public safety needs and the General Plan's water quality objectives.
Gardena General Plan Community Safety Element 2006	PS Goal 3: Protect public health, safety and the environment from exposure to hazardous materials and other dangers.
Inglewood General Plan Safety Element 1995	Safety Goal 5: Reduce the adverse impacts of hazardous materials.
City of Torrance General Plan Safety Element 2010	Objective S.4: To reduce the risk associated with the use, storage, transport, or disposal of hazardous waste.

4.8.4 Thresholds and Methodology

4.8.4.1 Thresholds of Significance

Table 4.8-13 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to hazards and hazardous materials. These thresholds are addressed in the PEIR.

Table 4.8-13. CEQA Thresholds for Hazards and Hazardous Materials

Threshold <i>Would the proposed program:</i>
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?
e. For a project located within an airport land use plan or, where such plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

4.8.4.2 Methodology

Transport, Use, or Disposal of Hazardous Materials

The potential transport, use, or disposal of hazardous materials during rehabilitation projects included in the program is addressed in this analysis. The analysis considers the requirement of all projects to comply with existing regulations for the transport, use, and disposal of hazardous materials, and Metropolitan's standard requirements for contractors involved in rehabilitation projects.

Risk of Upset

The potential risk of a foreseeable upset or accident occurring during rehabilitation that could release hazardous materials is addressed in this analysis. The analysis considers the requirement of all projects to comply with existing regulations for the transport, use, and disposal of hazardous

materials, and Metropolitan's standard requirements for contractors involved in rehabilitation projects.

Risk to Schools

Schools within 0.25 mile of the pipeline alignments are identified in Section 4.8.2. The potential of projects in the proposed program to expose these schools to hazardous emissions, substances, or wastes is evaluated in this analysis. The analysis considers the requirement of all projects to comply with existing regulations for the transport, use, and disposal of hazardous materials, and Metropolitan's standard requirements for contractors involved in rehabilitation projects.

Exposure to Existing Hazardous Sites

Existing known hazardous materials sites are summarized in Section 4.8.2. The potential of projects in the proposed program to create a significant hazard by exposing the public or environment to the effects of these sites is evaluated at a program level in this analysis. The analysis considers the requirement of all projects to comply with existing regulations for the transport, use, and disposal of hazardous materials, and Metropolitan's standard requirements for contractors involved in rehabilitation projects. Once rehabilitation locations are identified, a project-level analysis of surrounding sites would be required to determine the likelihood of potential impacts affecting the program.

Public Airports

Existing public use airports are identified in Section 4.8.2. The potential risks of working within 2 miles of a public airport and within an ALUP during rehabilitation are evaluated.

Private Airstrips

Existing private airstrips within 2 miles of the pipelines are identified in Section 4.8.2. The potential risks of working in proximity of a private airstrip during rehabilitation are evaluated.

Emergency Response Plans/Emergency Evacuation Plans

Evacuation routes associated with existing emergency response plans and emergency evacuation plans are identified in Section 4.8.2. The potential of the projects included in the proposed program to impair the implementation of or physically interfere with these plans is evaluated.

Wildland Fires

Locations of pipelines in areas with risk of wildland fires are identified in Section 4.8.2. The potential risks of working within these risk areas during rehabilitation are evaluated.

4.8.5 Impacts Analysis

4.8.5.1 Program Analysis

Threshold HAZ-A: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials

Construction activities associated with the proposed program would require transport, use, and disposal of hazardous materials such as solvents, paints, oils, grease, and fuels. Such transport, use, and disposal must be compliant with applicable regulations such as the regulations discussed in Section 4.8.3, *Regulatory Framework*. Although solvents, paints, oils, grease, and fuels would be transported, used, and disposed of during the construction phase, these materials are typically used in construction projects and would not represent the transport, use, and disposal of acutely hazardous materials. Additionally, and as part of the proposed program, Metropolitan's contractors would implement the following environmental commitments during rehabilitation activities.

- Rehabilitation activities would incorporate Best Management Practices (BMPs), including a Stormwater Pollution Prevention Plan (SWPPP), as applicable, for sediment and erosion control, pollutant treatment, outlet protection, and general site management.
- A Spill Emergency Response Plan would be prepared prior to the start of construction and be responsible for ensuring that hazardous materials and waste are handled, stored, and disposed of in accordance with applicable federal and state laws and regulations. All materials and fuels within the staging areas and excavation sites and work zones would be stored in a manner that reduces the potential for spills.

Due to the implementation of these environmental commitments and because compliance with existing regulations is mandatory, the proposed program would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

After rehabilitation is complete, the operation of the pipelines in the proposed program would be the same as the existing condition. Therefore, there would be no impacts related to hazardous materials associated with operation of the program pipelines.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold HAZ-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

As discussed in Threshold HAZ-A, construction activities associated with the proposed program would require transport, use, and disposal of hazardous materials such as solvents, paints, oils, grease, and fuels, which could result in upset or accidents that could release hazardous materials into the environment. Such transport, use, and disposal must be compliant with applicable regulations such as the regulations discussed in Section 4.8.3, *Regulatory Framework*. As discussed above, the proposed program would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; therefore, the risk of upset and accidents involving the release of hazardous materials into the environment would be less than significant.

After rehabilitation is complete, the operation of the pipelines in the proposed program would be the same as the existing condition. Therefore, there would be no impacts related to risk of upset and accidents involving the release of hazardous materials into the environment associated with operation of the program pipelines.

(See Threshold HAZ-D for potential release of hazardous materials related to existing known and unknown hazardous materials sites.)

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold HAZ-C: Emit Hazardous Emissions or Involve Handling Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School

As discussed in Section 4.8.2, *Existing Conditions*, there are multiple schools within 0.25 mile of the program pipelines. In addition, Metropolitan may use portions of school sites, including playing fields or school parking lots, as construction staging areas.

Although rehabilitation would involve hazardous materials typical of a construction project (as discussed above under Threshold HAZ-A), it is expected that the proposed program would be operated in compliance with the federal, state, and local regulations discussed in Section 4.8.3, *Regulatory Framework*. Additionally, any potential construction-related hazardous releases would be from commonly used materials such as fossil fuels, solvents, and paints and would not include substances listed in 40 CFR 355, Appendix A, Extremely Hazardous Substances and Their Threshold Planning Quantities. Any such releases of commonly used materials would be localized and immediately contained and cleaned up.

See Threshold HAZ-D regarding encountering existing hazardous materials during rehabilitation. As discussed there, it is possible that construction activities related to the proposed program may encounter contaminated media from nearby hazardous materials sites during excavations, potentially exposing the surrounding environment, including nearby schools, to hazardous conditions. These potential impacts would be significant. Implementation of MM HAZ-1 through MM HAZ-4 would reduce potential impacts on the surrounding environment, including school sites within 0.25 mile, to less-than-significant levels.

After rehabilitation is complete, the operation of the pipelines in the proposed program would be the same as the existing condition. Therefore, there would be no impacts on schools associated with operation of the program pipelines.

Mitigation Measures

Impacts that would result from the proposed program would be significant, but implementation of MM HAZ-1 through MM HAZ-4 (see discussion under Threshold HAZ-D) would reduce these impacts so that residual impacts would be less than significant.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM HAZ-1 through MM HAZ-4 would reduce these impacts so that residual impacts would be less than significant.

Threshold HAZ-D: Be Located on a Site That Is Included on a List of Hazardous Materials Sites and, as a Result, Create a Significant Hazard to the Public or the Environment

Rehabilitation activities would encounter numerous sites found in various environmental databases as discussed in Section 4.8.2, *Existing Conditions*. In some cases, the existing pipelines traverse areas within or near NPL sites. It is expected that most industrial and commercial facilities within 1 mile of the pipes that deal with storage, use, and disposal of hazardous materials comply with all appropriate federal, state, and local regulations, such as the regulations discussed in Section 4.8.3, *Regulatory Framework*, to ensure safety of the surrounding public and environment. However, it is possible that construction activities may encounter contaminated media during excavations either at known or unknown sites, resulting in a significant hazard to the construction workers, the public, or the environment. This would be a significant impact. Implementation of MM HAZ-1 through MM HAZ-4 would reduce potential impacts to less-than-significant levels.

After rehabilitation is complete, the operation of the pipelines in the proposed program would be the same as the existing condition. Therefore, there would be no impacts related to hazards to the public or environment associated with operation of the program pipelines.

Mitigation Measures

MM HAZ-1: Project-Level Hazardous Materials Sites Assessment Prior to Construction Activities

To avoid exposure of construction workers, the public, or the environment to previously identified hazardous materials, during design, qualified Metropolitan staff or consultant(s) will

~~retain a professional environmental consultant~~ specializing in hazardous materials impact assessment will to conduct a project-level analysis to determine if there are existing hazardous materials sites in the vicinity of the construction site and potential for existing hazardous materials sites to affect construction. This assessment will consist of a search for environmental-related information present in publicly accessible databases. The information will be reviewed to determine if the construction footprint or adjacent properties are listed in the databases. If the construction footprint or adjacent properties are listed in the databases, qualified Metropolitan staff or consultant(s) ~~the professional environmental consultant~~ will determine the potential risk to construction workers, the public, or the environment from rehabilitation activities and identify all necessary avoidance, abatement, remediation, cleanup, disposal, monitoring, reporting, notifications, and/or other measures to prevent significant impacts.

MM HAZ-2: Encountering Unreported Hazardous Materials

To avoid exposure of construction workers, the public, or the environment to unreported hazardous materials in the soil, contractors will be required to inspect any site to be used for excavation, work zones, staging, or other rehabilitation-related activities prior to beginning construction. If odiferous, stained, or discolored soil is encountered, qualified Metropolitan staff or consultant(s) ~~a professional environmental consultant~~ specializing in the identification and handling of hazardous materials will be retained to assess the site. Identification of possible hazardous materials would typically involve soil samples and laboratory analysis. The suspect soil will be isolated, covered, and avoided by construction personnel until analytical results are reviewed by qualified personnel. Soils identified as hazardous or contaminated will be handled, transported, and treated in accordance with all federal, state, and local existing hazardous materials regulations ~~and based the professional environmental consultant's direction.~~

MM HAZ-3: Engineering Controls and Best Management Practices during Construction

To minimize human exposure to potential contaminants, during construction contractors will employ the use of engineering controls and BMPs. Engineering controls and construction BMPs will include, but are not limited to, the following:

- Contractor employees working on site handling hazardous materials on contaminated media will be certified in the Occupational Health and Safety Administration's 40-hour Hazardous Waste Operations and Emergency Response training.
- Contractors will water or mist soil as it is being excavated and stockpiled or loaded onto transportation trucks.

MM HAZ-4: Encountering Contaminated Groundwater

To avoid exposure of construction workers, the public, or the environment to contaminated groundwater, suspect water removed from excavation areas (but not including dewatering of the pipelines themselves) will be tested by a qualified laboratory ~~professional environmental consultant~~ specializing in the identification and handling of hazardous materials ~~and classified as hazardous or non-hazardous based on laboratory results.~~ If groundwater is considered hazardous, Metropolitan will notify the Regional Water Quality Control Board and local Environmental Health agencies regarding assessment and remediation requirements.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM HAZ-1 through MM HAZ-4 would reduce these impacts so that residual impacts would be less than significant.

Threshold HAZ-E: For a Project Located within an Airport Land Use Plan or, Where Such Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard for People Residing or Working in the Project Area

Although the program pipelines are within 2 miles of several public airports, they are not within areas covered by ALUPs, except as described below.

The Second Lower Feeder is within a notification area for the ALUP for the Joint Forces Training Base Los Alamitos. Notification areas are established to ensure that structures that may affect day-to-day airport operations are not built in their vicinities. The proposed program would not include aboveground structures, except for small valve boxes and electrical panels. These structures would not affect airport operations. Therefore, the program would not result in a safety hazard for people residing or working in the vicinity of the Joint Forces Training Base Los Alamitos.

The Second Lower Feeder crosses under a portion of the Long Beach Municipal Airport and is within a runway protection zone. The Sepulveda Feeder runs parallel and adjacent to the western side of the Van Nuys Airport and is within the northern and southern runway protection zones. Runway protection zones are intended to provide for the unobstructed passage of landing aircraft through the above airspace. These zones are the most critical safety areas under the approach paths and should be kept free of all obstructions. No structures or congregation of people are allowed within runway protection zones. If any aboveground rehabilitation activities were to occur in these runway protection zones, construction equipment and/or personnel could interfere with airport operations. Also, where pipelines cross under runway or taxiway areas, there is the potential for below-ground construction activities to affect or be affected by airport operations and safety. Impacts would be significant. Implementation of MM HAZ-5 would reduce potential impacts to less-than-significant levels.

The only permanent aboveground elements of the proposed program would be manhole covers, valve boxes, and electrical panels. If these aboveground elements were located in a runway protection zone, they could interfere with airport operations and safety. Impacts would be significant. Implementation of MM HAZ-6 would reduce potential impacts to less-than-significant levels.

Mitigation Measures

MM HAZ-5 Construction Activities within Runway Protection Zones

During the design phase for any projects in the program within the runway protection zones for Long Beach Municipal Airport or Van Nuys Airport (even where all construction would be accessed from outside the runway protection zones), project engineers will coordinate with the management of Long Beach Municipal Airport (Second Lower Feeder) or Van Nuys Airport (Sepulveda Feeder), as appropriate, to determine the methods of construction that will be necessary to avoid impacts on airport operations and safety. All operations and safety

requirements of the airports will be incorporated into the construction design packages. All necessary requirements will be implemented during construction.

MM HAZ-6 Aboveground Elements in Runway Protection Zones

To avoid airport operations and safety impacts, no permanent aboveground elements of the proposed program, such as manhole covers, valve boxes, or electrical panels, will be located within runway protection zones (at Long Beach Municipal Airport for the Second Lower Feeder and Van Nuys Airport for the Sepulveda Feeder) without prior approval of the management of the appropriate airport.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM HAZ-5 and MM HAZ-6 would reduce these impacts so that residual impacts would be less than significant.

Threshold HAZ-F: For a Project within the Vicinity of a Private Airstrip, Result in a Safety Hazard for People Residing or Working in the Project Area

No private airstrips are in the vicinity of any of the pipelines; therefore, the project would not result in safety hazards to workers involved in the rehabilitation activities associated with the proposed program.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

Threshold HAZ-G: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan

As discussed in Section 4.8.2, *Existing Conditions*, in some cases the proposed program pipelines are within street rights-of-way that serve as emergency response routes and/or evacuation routes. If excavation were to take place in roadways that serve as emergency/excavation routes and capacity of the affected streets was reduced during construction (such as reducing four lanes to two lanes), the ability of these streets to serve as emergency/evacuation routes may be impaired. This would be a significant impact during construction. Implementation of MM HAZ-7 would reduce these impacts to less-than-significant levels.

Once rehabilitation is complete, contractors would be required to return the street to pre-construction conditions. Therefore, there would be no long-term impacts on emergency response or evacuation.

Mitigation Measures

MM HAZ-7: Maintaining Emergency/Evacuation Routes

To avoid impacts on emergency/evacuation routes, excavation sites will typically not be placed in roadways that serve as designated emergency/evacuation routes. If such streets cannot be avoided, the contractor will work with the local jurisdiction responsible for the emergency/evacuation routes to maintain adequate capacity. This will be accomplished by utilizing unused portions of the street right-of-way for travel lanes (such as temporarily prohibiting parking, restriping medians or parkway space, or detouring bike lanes) or by detouring the emergency/evacuation route to other roadways during construction. If detours are necessary, appropriate notification of emergency personnel and temporary signage will be used to direct emergency/evacuation traffic during construction.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM HAZ-7 would reduce these impacts so that residual impacts would be less than significant.

Threshold HAZ-H: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Areas where Wildlands Are Adjacent to Urbanized Areas or where Residences Are Intermixed with Wildlands

Implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. As discussed in Section 4.8.2, *Existing Conditions*, portions of the Allen-McColloch Pipeline, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder exist within CAL FIRE Very High Fire Hazard Severity Zones.

Although fire can be a significant threat in in these areas, people or structures would not be exposed to significant risk of loss, injury, or death due to the proposed program. The proposed program would not include habitable structures and would only bring a small number of people (construction workers) into the fire hazard severity zones during rehabilitation. Therefore, impacts related to exposing people or structures to risks involving wildland fires would be less than significant. (See Threshold HAZ-G regarding emergency/evacuation routes.)

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.8.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of

local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

The proposed program would not have a cumulatively considerable contribution to hazards and hazardous materials impacts. If hazardous materials release were to occur as a result of proposed program implementation, impacts would be site specific (and typically in small, localized quantities) and would not combine with other hazardous material impacts in the surrounding area. In addition, construction activities would be required to follow existing regulations, environmental commitments, and mitigation measures, thus reducing potential impacts on the surrounding environment and negating potential cumulative impacts. Therefore, impacts would not be cumulatively considerable.

Section 4.9

Hydrology and Water Quality

4.9.1 Introduction

This section describes the existing conditions for hydrology and water quality, the regulatory framework associated with hydrology and water quality, the impacts on hydrology and water quality that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant hydrology and water quality impacts.

4.9.2 Existing Conditions

The study area for hydrology and water quality is the pipeline easements or rights-of-way and 0.25 mile on either side of the alignments (a half-mile corridor).

4.9.2.1 Allen-McColloch Pipeline

There are 11 watersheds in Orange County that are grouped by similar characteristics into three Watershed Management Areas: North, Central, and South. The Allen-McColloch Pipeline is located across the North, Central, and South Watershed Management Areas.

The North Watershed Management Area encompasses 376 square miles in northern Orange County and is bordered by Los Angeles County to the north and west and San Bernardino County to the east (OCPW 2011). The three watersheds in this area are the San Gabriel River/Coyote Creek, Anaheim Bay-Huntington Harbour, and the Santa Ana River watersheds. All three watersheds lie within the Santa Ana Regional Water Quality Control Board (RWQCB) boundary.

The Central Watershed Management Area encompasses the entire Newport Bay watershed and the northern portion of the adjacent Newport Coastal Streams watershed and encompasses an area of approximately 154 square miles with overland flows draining toward the Pacific Coast into Newport Bay. The planning area, approximately 40 miles south of Los Angeles and 70 miles north of San Diego, is highly urbanized and is within the jurisdiction of the Santa Ana RWQCB.

The South Watershed Management Area includes the area that encompasses the San Juan Hydrologic Unit. The San Juan Hydrologic Unit is a collection of coastal watersheds that covers 496 square miles in San Diego, Orange, and Riverside counties. The San Juan Hydrologic Unit is naturally divided by major water bodies and represents an important water resource in one of the most arid regions of the nation. It comprises seven major watersheds: (1) Newport Coast, (2) Laguna Coastal Streams, (3) Aliso Creek, (4) Dana Point Coastal Streams (Salt Creek), (5) San Juan Creek, (6) San Clemente Coastal Streams, and (7) San Mateo Creek.

Surface Water Hydrology and Watersheds

The portion of the Allen-McColloch Pipeline in the North Watershed Management Area is within the Santa Ana River watershed (OCPW 2009d). The Santa Ana River watershed is the largest in Orange

County, covering approximately 210 square miles. The river begins almost 75 miles away in the San Bernardino Mountains, crossing central Orange County before emptying into the Pacific Ocean. The river serves as the main tributary to the watershed, with Santiago Creek being the largest tributary within Orange County.

The portion of the Allen-McColloch Pipeline in the Central Watershed Management Area is within the Newport Bay watershed (OCPW 2009b). The Newport Bay watershed drains approximately 152 square miles to the Pacific Ocean within southern Orange County. The watershed encompasses all waters draining to Newport Bay. The principal watercourse of the Newport Bay watershed is San Diego Creek. The main tributary to San Diego Creek is Peters Canyon Wash; smaller tributaries include Serrano Creek, Borrego Canyon Wash, Agua Chinon Wash, Bee Canyon Wash, Sand Canyon Wash, and Bonita Canyon Creek.

The portion of the Allen-McColloch Pipeline in the South Watershed Management Area is within the Aliso Creek and San Juan Creek watersheds (OCPW 2009a, 2009c). Aliso Creek is the main water body in the Aliso Creek watershed; it is a long, narrow coastal canyon with headwaters in the Cleveland National Forest. The Aliso Creek watershed is approximately 35 square miles. The creek ultimately discharges into the Pacific Ocean at Aliso Beach. The Aliso Creek watershed is mainly an urbanized area, with the exception of the Cleveland National Forest in the upper watershed and the Aliso Wood Canyon Regional Park in the lower watershed. The San Juan Creek watershed covers approximately 160 square miles; its main tributary, San Juan Creek, originates in the Santa Ana Mountains district of the Cleveland National Forest in the easternmost part of Orange County. The Arroyo Trabuco and Oso Creek are smaller tributaries.

Local Surface Water Hydrology

The northern portion of the Allen-McColloch Pipeline is situated on pervious surfaces associated with a golf course and natural lands. The alignment then follows street rights-of-way and developed areas (impervious surface) until crossing the Santa Ana River (Figure 4.9-1). The alignment crosses the Santa Ana River Reach 2 and adjacent recharge basins near Imperial Highway. The Santa Ana River Reach 2 and adjacent recharge basins in this location are natural soft bottom (pervious surface) to allow for recharge from the river. The alignment then follows street rights-of-way and developed areas (impervious surface), with the exception of few pervious hillside areas, until reaching Santiago Creek (Figure 4.9-1). The alignment crosses Santiago Creek Reach 1 near the intersection of Santiago Canyon Road and Cannon Street. Santiago Creek in this location is natural soft bottom (pervious surface) to allow for recharge from the creek. The remainder of the alignment typically follows street rights-of-way and developed areas (impervious surface).

The central portion of the Allen-McColloch Pipeline alignment is primarily situated on pervious surfaces associated with Peters Canyon Reservoir and agricultural and undeveloped lands until reaching the city of Lake Forest. Several washes are crossed through the agricultural and undeveloped lands including Borrego Canyon Wash, Serrano Creek, Aliso Creek, and smaller unnamed washes (Figure 4.9-1). These washes are natural soft bottom (pervious surface) where crossed by the Allen-McColloch Pipeline. The alignment then generally follows street rights-of-way and developed areas (impervious surface), with the exception of a few pervious hillside areas.

The southern portion of the Allen-McColloch Pipeline is primarily situated on impervious surfaces associated with street rights-of-way and developed areas.

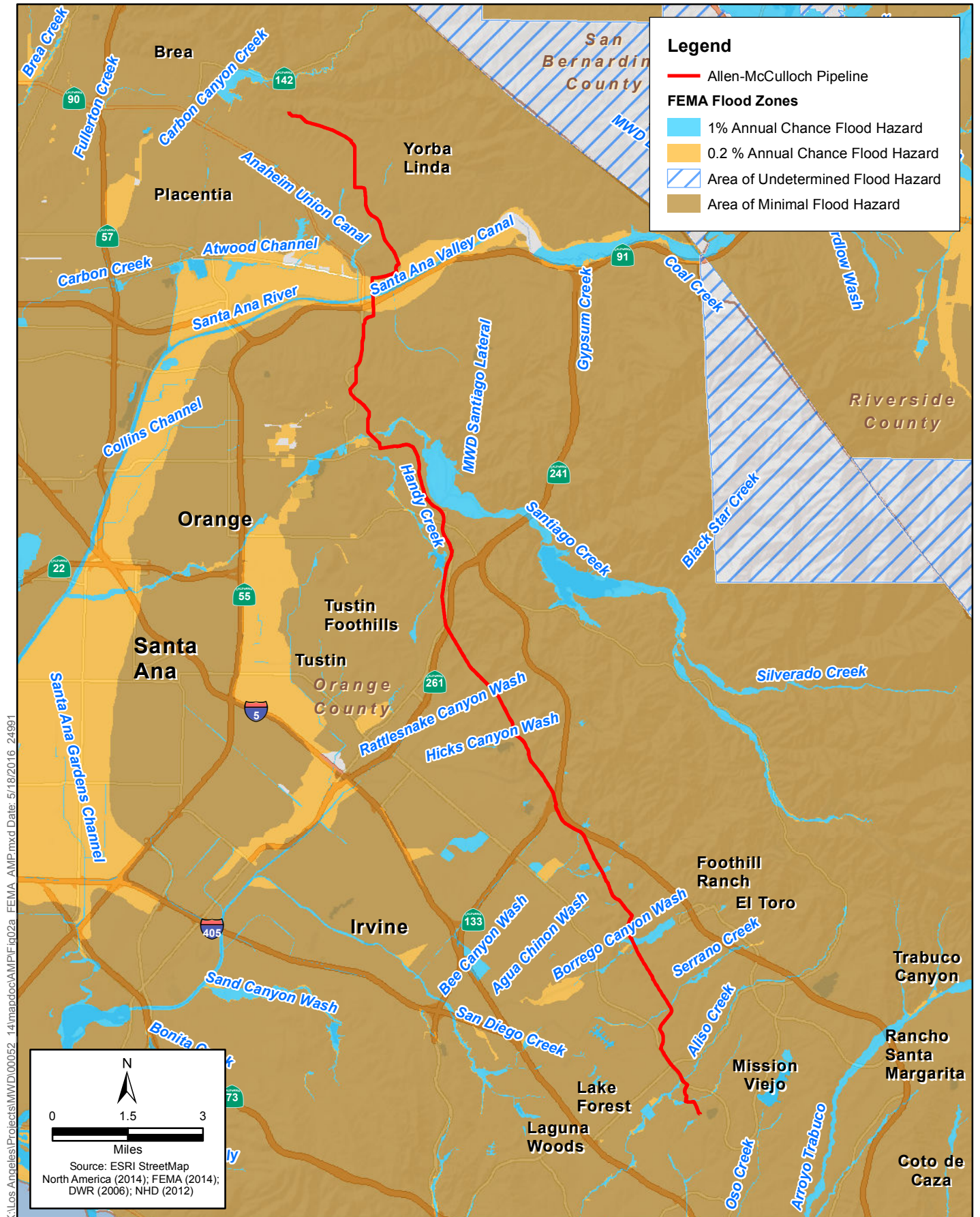


Figure 4.9-1
FEMA Flood Zones near the Allen-McColloch Pipeline
Metropolitan PCCP Program

The majority of the Allen-McColloch Pipeline alignment is within an area of minimal flood hazard (Figure 4.9-1). Where the alignment crosses the above-mentioned water bodies, the flood zone risk elevates to the 1 and 2 percent annual chance flood hazard.

Groundwater Hydrology

The northern portion of the Allen-McColloch Pipeline is situated over the Orange County groundwater basin (DWR 2013). The Orange County Basin is bounded by Coyote Hills and Chino Hills on the north, the Santa Ana Mountains on the northeast, the San Joaquin Hills on the south, and the Pacific Ocean and the Newport-Inglewood fault zone on the southwest (DWR 2004e). The Orange County Basin is separated from the Central Basin along Coyote Creek and the county line, although there is no physical barrier between the two basins. The Newport-Inglewood fault zone acts as a barrier to flow from the ocean along most of its length in Orange County except at ancient river-crossing gaps, most notably the Alamitos Gap along the Los Angeles County line and the Talbert Gap in Huntington Beach and Costa Mesa.

Orange County Water District (OCWD) currently owns and operates more than 1,000 acres of groundwater recharge ponds in and adjacent to the Santa Ana River and Santiago Creek. Water sources used for recharge include Santa Ana River baseflow and stormflow, Santiago Creek flows, imported water from Metropolitan and from the upper Santa Ana River watershed, and previously treated water from OCWD.

Water Quality

Under Section 303(d) of the Clean Water Act (CWA), the State Water Resources Control Board (SWRCB) is required to develop a list of impaired water bodies that do not meet water quality standards after the minimum technology-based effluent limitations have been implemented for point sources.¹ Lists are to be priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the total maximum amount of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards, established by the U.S. Environmental Protection Agency (EPA). The 303(d) listed impairments of receiving waters within the Allen-McColloch Pipeline study area and downstream receiving waters are shown in Table 4.9-1.

¹ A *point source* is an identifiable source of pollution where pollutants are discharged, such as a pipe, ditch, ship, factory, or sewage treatment plant. *Non-point sources* are sources of pollution that are widely distributed in the environment, such as land runoff and precipitation.

Table 4.9-1. Overview of Water Quality Impairments in the Allen-McColloch Pipeline Study Area

Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
Santa Ana River Reach 2	Indicator Bacteria	Source Unknown	2021
Borrego Creek	Ammonia (unionized) Indicator Bacteria	Other Urban Runoff Unknown Nonpoint Source	2021
Serrano Creek	Ammonia (unionized) Indicator Bacteria pH	Source Unknown	2021
Aliso Creek	Indicator Bacteria Phosphorus Selenium Total Nitrogen as N Toxicity	Nonpoint Source Natural Sources Unknown Nonpoint Source Natural Sources Source Unknown	EPA TMDL approval 2005 2019 2021 2019 2019
Source: SWRCB 2011.			

Seiche, Tsunami, and Mudflow

A seiche is a temporary disturbance or oscillation in water levels of a water body, most often caused by earthquakes. No large bodies of permanently stored water are located such that they would affect the Allen-McColloch Pipeline study area in the event of earthquake-induced failure or seiches. The Rattlesnake Reservoir is approximately 0.1 mile to the west of the pipeline.

A tsunami is a series of traveling ocean waves of great length and long period, which are generated by disturbances associated with earthquakes in oceanic and coastal regions. The Allen-McColloch Pipeline study area is over 8 miles from the Pacific Ocean at its closest point along the alignment. As a result, the study area is not subject to inundation from tsunami and is not identified by the California Department of Conservation as a designated tsunami area.

In general, the northern and southern ends of the Allen-McColloch Pipeline are located in relatively flat areas that are susceptible to mudflows. The middle segment of the alignment is within a hilly area, but the majority of the area is planted with agricultural crops and not subject to mudflows.

4.9.2.2 Calabasas Feeder

The Calabasas Feeder is within the Los Angeles River watershed.

Surface Water Hydrology and Watersheds

The Los Angeles River watershed covers a land area of 834 square miles (DPW 2007c). The eastern portion spans from the Santa Monica Mountains to the Simi Hills and the western portion spans from the Santa Susana Mountains to the San Gabriel Mountains. The watershed encompasses and is shaped by the path of the Los Angeles River, which flows from its headwaters in the mountains eastward to the northern corner of Griffith Park, where the channel turns southward through the Glendale Narrows before it flows across the coastal plain and into San Pedro Bay near Long Beach. Much of the watershed is highly developed, with residential (36 percent), open space and

agricultural (44 percent), and commercial/industrial/transportation (20 percent) being the predominant land uses. Overall, the watershed is approximately one-third impervious. Most portions of the Los Angeles River are completely channelized for flood protection, as are many of its tributaries including Compton Creek, Rio Hondo, Arroyo Seco, and Tujunga Wash. They are fed by a complex underground network of storm drains and a surface network of tributaries. Several dams and reservoirs have been constructed within the watershed for flood control and groundwater recharge.

Local Surface Water Hydrology

The majority of the Calabasas Feeder alignment is situated on impervious surfaces associated with street rights-of-way and developed areas. However, the alignment does cross over several concrete creeks, including Santa Susana Creek, Chatsworth Creek, Bell Creek, and Calabasas Creek (Figure 4.9-2). The alignment crosses over Santa Susana Creek near the intersection of Nordhoff Street and Owensmouth Avenue; the concrete channel is below street level. The alignment crosses over Chatsworth Creek near the intersection of Fallbrook Avenue and Saticoy Street; the concrete channel is below street level. The alignment then follows street rights-of-way and developed areas (impervious surface) until it crosses over Bell Creek near the intersection of Fallbrook Avenue and Sherman Way; the concrete channel is below street level. The alignment then follows rights-of-way and developed areas (impervious surface) until it crosses over Calabasas Creek near the intersection of Fallbrook Avenue and E. Hatteras Way; the concrete channel is below street level.

The majority of the Calabasas Feeder study area is within an area of minimal flood hazard (Figure 4.9-2). The very southern portion of the study area is within an area of 2 percent annual chance flood.

Groundwater Hydrology

The Calabasas Feeder study area is in the San Fernando Groundwater Basin (DWR 2013). The San Fernando Groundwater Basin is bounded on the northwest by the Santa Susana Mountains, on northeast by the San Gabriel Mountains, on the east by the San Raphael Hills, on the south by the Santa Monica Mountains, and on the west by the Simi Hills (DWR 2004d). The San Fernando Groundwater Basin underlies the upper Los Angeles River watershed and is an important source of drinking water for the cities of Los Angeles, Glendale, Burbank, San Fernando, La Cañada-Flintridge, and the unincorporated area of La Crescenta.

Recharge of the San Fernando Groundwater Basin is from a variety of sources. Spreading of imported water and runoff occurs in the Pacoima, Tujunga, and Hansen spreading grounds. Runoff contains natural streamflow from the surrounding mountains, precipitation falling on impervious areas, reclaimed wastewater, and industrial discharges. Water flowing in surface washes infiltrates, particularly in the eastern portion of the basin.

Groundwater levels in the San Fernando Groundwater Basin have undergone a general decline during recent years. Probable causes of this decline include increased urbanization and runoff leaving the basin, reduced artificial recharge, and continued groundwater extractions by the major pumping parties, the cities of Los Angeles, Burbank, and Glendale. The Upper Los Angeles River Area Watermaster is monitoring this situation and efforts to reverse this trend are underway.

Water Quality

The Los Angeles River and selected tributaries are impaired by pollutants mainly because of the watershed's large, dense population and the amount of impervious ground surface that prevents large quantities of runoff from infiltrating into the soils. The 303(d) listed impairments of receiving waters within the Calabasas Feeder study area and downstream receiving waters are shown in Table 4.9-2.

Table 4.9-2. Overview of Water Quality Impairments in the Calabasas Feeder Study Area

Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
Los Angeles River Reach 6	Coliform Bacteria	Nonpoint Source	EPA TMDL approval 2015
	Selenium	Source Unknown	EPA TMDL approval 2005
Bell Creek	Coliform Bacteria	Nonpoint Source	EPA TMDL approval 2009
Source: SWRCB 2011.			

Seiche, Tsunami, and Mudflow

No large bodies of permanently stored water are located such that they would affect the site in the event of earthquake-induced failure or seiches. The Chatsworth Reservoir is a dry reservoir approximately 0.3 mile to the west of the Calabasas Feeder; the reservoir was drained in 1972 and taken out of service due to safety concerns.

The Calabasas Feeder study area is over 8 miles from the Pacific Ocean at its closest point along the alignment. As a result, the study area is not subject to inundation from tsunami and is not identified by the California Department of Conservation as a designated tsunami area.

In general, the Calabasas Feeder is in relatively flat areas that are not susceptible to mudflows.

4.9.2.3 Rialto Pipeline

The Rialto Pipeline is within the counties of San Bernardino and Los Angeles. Within San Bernardino County, the Rialto Pipeline is situated across three watersheds: the Santa Ana River, Cucamonga Creek, and San Antonio watersheds. Within Los Angeles County, the Rialto Pipeline is within the San Gabriel River watershed.

Surface Water Hydrology and Watersheds

The Santa Ana River watershed is the largest stream system in Southern California. The headwaters originate in the San Bernardino Mountains and are discharged to the Pacific Ocean approximately 100 miles to the southwest in Orange County. The Santa Ana River watershed covers over 2,650 square miles of widely varying forested, rural, and urban terrain and covers the more populated urban areas of San Bernardino, Riverside, and Orange counties, as well as a lesser portion of Los Angeles County. The Upper Santa Ana River watershed consists of many tributaries flowing to the Santa Ana River. These tributaries exhibit a range of development from natural streams to concrete-lined channels. Many of the streams flow through heavily developed areas.

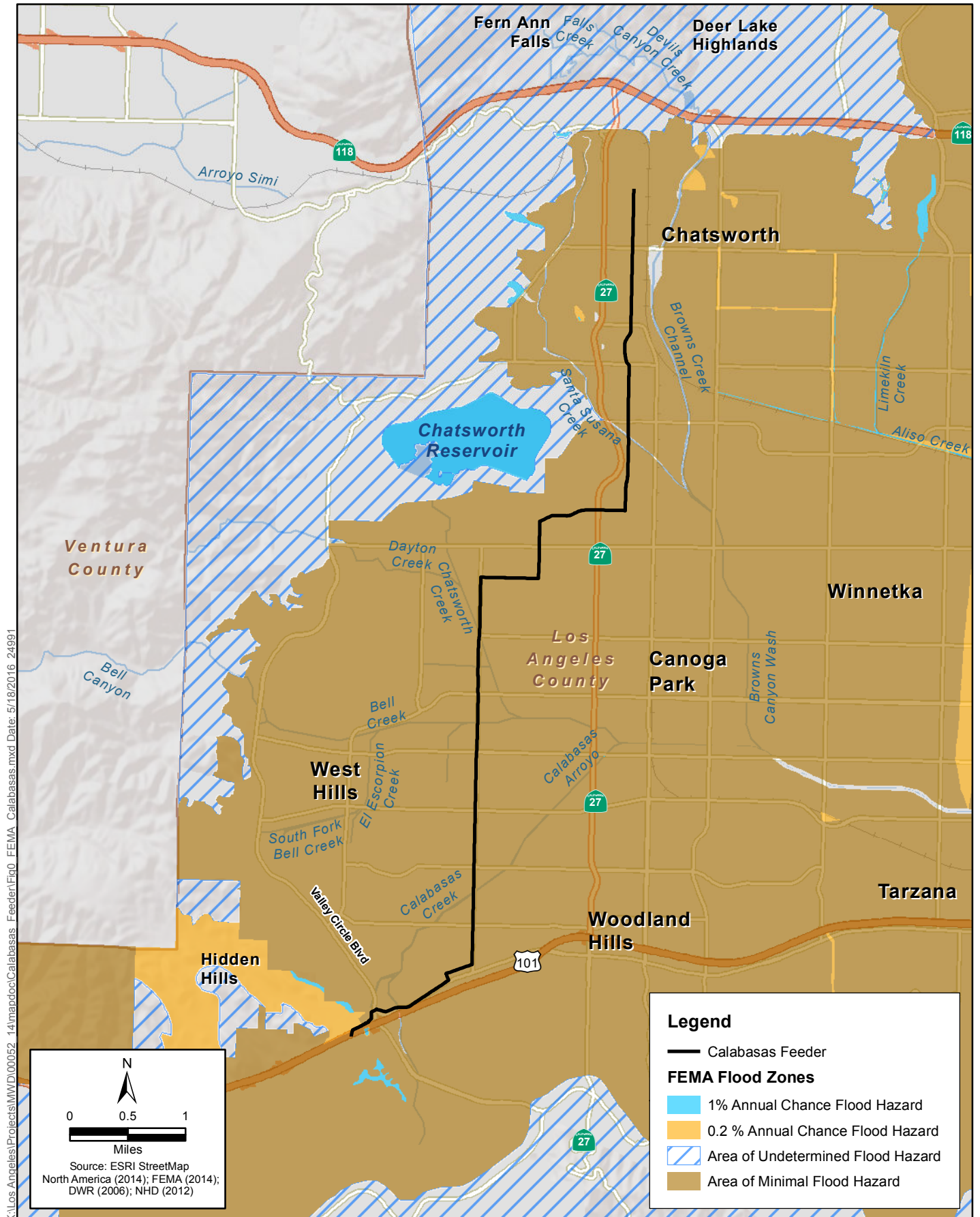


Figure 4.9-2
FEMA Flood Zones near the Calabasas Feeder
Metropolitan PCCP Program

The Cucamonga Creek watershed is approximately 92 square miles (Santa Ana RWQCB 2012; San Bernardino County 2015). The watershed includes portions of the cities of Chino, Ontario, Rancho Cucamonga, and Upland and sections of unincorporated Riverside and San Bernardino counties. The main water bodies in the watershed are Santa Ana River Reach 3 and Cucamonga Creek. Lower Deer Creek, West Cucamonga Channel, Upper Deer Canyon Wash, and Demens Creek are the main tributaries to Cucamonga Creek. There are numerous local storm drain outfalls discharging runoff into the channel and its tributaries.

The San Antonio watershed is at the western boundary of San Bernardino County and includes portions of the counties of San Bernardino, Los Angeles, and Riverside, all of the city of Montclair, and portions of the cities of Pomona, Claremont, Upland, Ontario, Chino, and Chino Hills (San Bernardino County 2015). The main water bodies in the watershed are Santa Ana River Reach 3, San Antonio Channel, and Chino Creek. Little Chino Creek, English Canyon, Carbon Canyon Creek, Los Serranos Channel, and Chino storm drain are the main tributaries.

The San Gabriel River watershed is in the eastern portion of Los Angeles County (DPW 2007d). It is bound by the San Gabriel Mountains to the north, most of San Bernardino County/Orange County to the east, the division of the Los Angeles River from the San Gabriel River to the west, and the Pacific Ocean to the south. The watershed drains into the San Gabriel River from the San Gabriel Mountains, flowing 58 miles south until its confluence with the Pacific Ocean. Major tributaries to the San Gabriel River include Walnut Creek, San Jose Creek, Coyote Creek, and numerous storm drains entering from the 19 cities that the San Gabriel River passes through. Channel flows pass through different sections in the San Gabriel River, diverting from the riverbed into four different spreading grounds, held behind several rubber dams for controlled flow and groundwater recharge, and controlled through 10 miles of concrete channel bottom from below Whittier Narrows Dam to past Coyote Creek.

Local Surface Water Hydrology

The portion of the Rialto Pipeline study area in the Santa Ana River watershed is situated along both pervious and impervious areas. The impervious areas are generally associated with residential and industrial land uses and the pervious areas are drainage features and undeveloped lands. Beginning from the eastern end of the Rialto Pipeline, the alignment follows street rights-of-way through residential and industrial areas (impervious surface) before crossing Cable Creek, Cajon Wash, and Lytle Creek (Figure 4.9-3). Cable Creek, Cajon Wash, and Lytle Creek in this location are natural soft bottom (pervious surface) to allow for recharge. The alignment then follows street rights-of-way and residential and industrial areas (impervious surface) before crossing East Etiwanda Creek west of Interstate 15 (I-15), followed by Day Creek and Deer Creek (Canyon Wash) crossings. East Etiwanda Creek is concrete lined (impervious surface) through the study area. Day Creek and Deer Canyon Wash are both natural and concrete lined. The alignment then continues to follow street rights-of-way and developed (impervious surface) until crossing Cucamonga Creek and then San Antonio Creek. Cucamonga Creek and San Antonio Creek are concrete lined (impervious surface) through the study area. The remainder of the alignment is within Los Angeles County and typically follows street rights-of-way and developed areas (impervious surface), but does cross Marshall Creek and San Dimas Wash, which are both natural soft bottom (pervious surface).

A large portion of the Rialto Pipeline alignment is within an area of minimal flood hazard (Figure 4.9-3). Where the alignment crosses the above-mentioned water bodies, the flood zone risk elevates

to the 1 and 2 percent annual chance flood hazard. Portions of the alignment are in areas of undetermined flood hazards.

Groundwater Hydrology

The Rialto Pipeline study area is in the Upper Santa Ana Valley groundwater basins in San Bernardino County and includes Bunker Hill, Rialto, Chino, and Cucamonga subbasins (SBVMWD 2015; DWR 2013).

The Bunker Hill Subbasin consists of the alluvial materials that underlie the San Bernardino Valley (DWR 2004i). This subbasin is bounded by contact with consolidated rocks of the San Gabriel Mountains, San Bernardino Mountains, and Crafton Hills, and by several faults. The southern boundary is the Banning fault, the eastern boundary is the Redlands fault, the San Andreas fault is roughly the northern boundary, the Glen Helen fault abuts the northwestern boundary, and the southwestern boundary is the San Jacinto fault. The Santa Ana River, Mill Creek, and Lytle Creek are the main tributary streams in the subbasin. Recharge to the Bunker Hill Subbasin historically has resulted from infiltration of runoff from the San Gabriel and San Bernardino Mountains. The Santa Ana River, Mill Creek, and Lytle Creek contribute more than 60 percent of the total recharge to the groundwater system. Lesser contributors include Cajon Creek, San Timoteo Creek, and most of the creeks flowing southward out of the San Bernardino Mountains. The subbasin is also replenished by deep percolation of water from precipitation and resulting runoff, percolation from delivered water, and water spread in streambeds and spreading grounds.

The Rialto-Colton Subbasin underlies a portion of the upper Santa Ana Valley in southwestern San Bernardino County and northwestern Riverside County (DWR 2004h). This subbasin is bounded by the San Gabriel Mountains on the north, the San Jacinto fault on the east, the Box Spring Mountains on the south, and the Rialto-Colton fault on the west. Lytle Creek drains this part of the valley southeastward to its confluence with the Santa Ana River in the southern part of the subbasin. The principal recharge areas are Lytle Creek in the northwestern part of the subbasin, Reche Canyon in the southeastern part, and the Santa Ana River in the south-central part. Lesser amounts of recharge are provided by percolation of precipitation to the valley floor, underflow, and irrigation and septic returns.

The Chino Subbasin is bounded on the east by the Rialto-Colton fault and on the southeast by the contact with impermeable rocks forming the Jurupa Mountains and low divides connecting the exposures (DWR 2004f). The subbasin is bounded on the south by contact with impermeable rocks of the Puente Hills and by the Chino fault, on the northwest by the San Jose fault, and on the north by impermeable rocks of the San Gabriel Mountains and by the Cucamonga fault. San Antonio Creek and Cucamonga Creek drain the surface of the subbasin southward to join the Santa Ana River. Groundwater recharge to the subbasin occurs by direct infiltration or precipitation on the subbasin floor, by infiltration of surface flow, and by underflow of groundwater from adjacent basins. The five recharge facilities in the subbasin are Deer Creek, Day Creek, East Etiwanda, San Sevaie, and Victoria.

The Cucamonga Subbasin underlies the northern part of upper Santa Ana Valley (DWR 2004g). It is bounded on the north by contact of alluvium with the San Gabriel Mountains and on the west, east, and south by the Red Hill fault. This portion of the upper Santa Ana Valley is drained by Cucamonga and Deer Creeks to the Santa Ana River. Recharge to the subbasin is provided by infiltration of stream flow, percolation of rainfall to the valley floor, underflow from the San Gabriel Mountains,

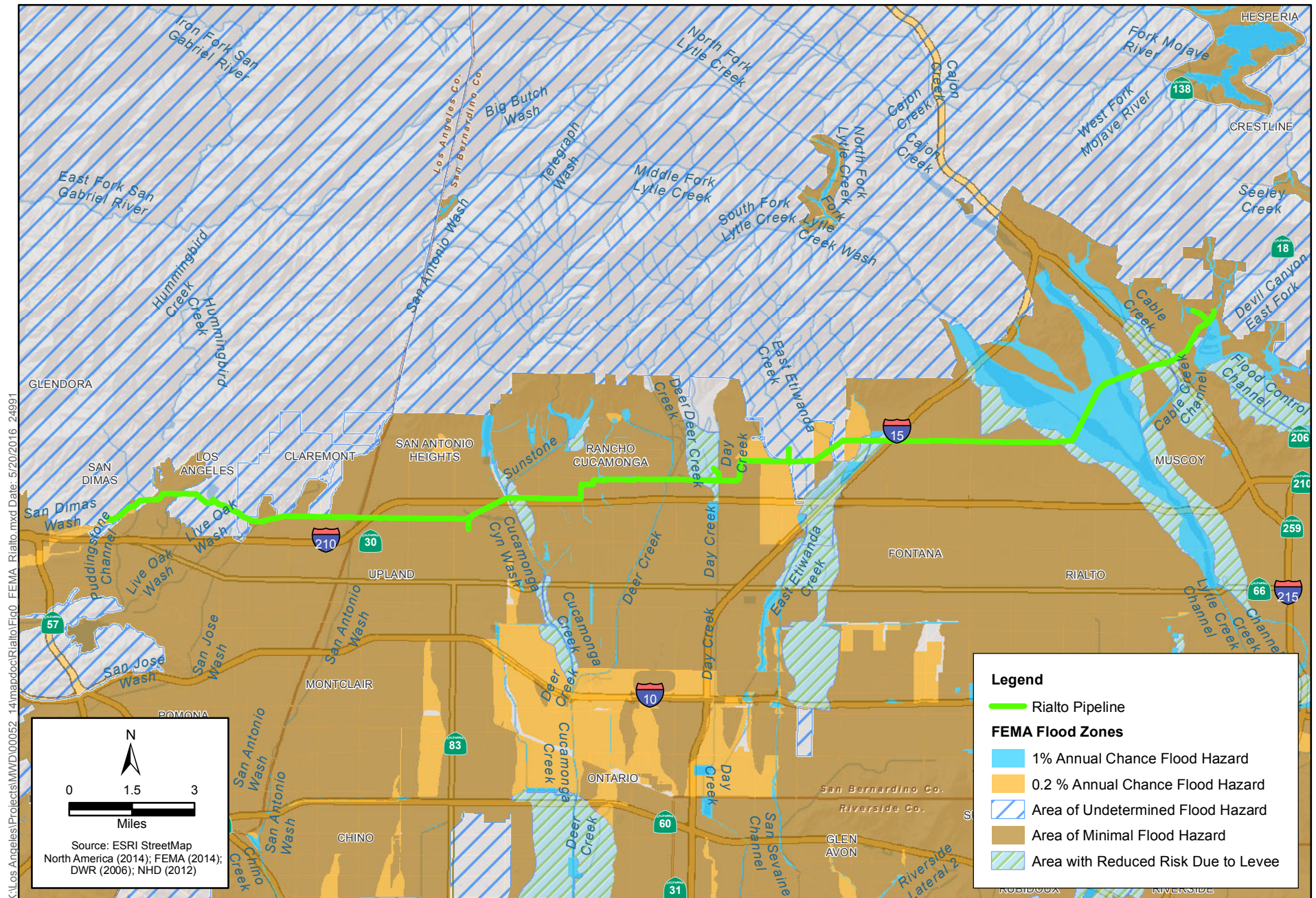


Figure 4.9-3
FEMA Flood Zones near the Rialto Pipeline
Metropolitan PCCP Program

and return irrigation flow. Additional recharge to the subbasin is from storm flow at spreading grounds along Cucamonga Creek and near Red Hill and Alta Loma.

Water Quality

The 303(d) listed impairments of receiving waters within the Rialto Pipeline study area and downstream receiving waters are shown in Table 4.9-3.

Table 4.9-3. Overview of Water Quality Impairments in the Rialto Pipeline Study Area

Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
Lytle Creek	Pathogens	Nonpoint Source	2019
San Antonio Creek	pH	Nonpoint Source	2021
Source: SWRCB 2011.			

Seiche, Tsunami, and Mudflow

No large bodies of permanently stored water are situated such that they would affect the Rialto Pipeline study area in the event of earthquake-induced failure or seiches. A portion of the Rialto Pipeline alignment (on Banyan Street between Haven Avenue and Archibald Avenue) is within a dam inundation area (San Bernardino County 2010). However, this area is considered a recharge basin and is not always filled with water that could result in inundation.

The Rialto Pipeline study area is over 30 miles from the Pacific Ocean at its closest point along the alignment. As a result, the study area is not subject to inundation from tsunami and is not identified by the California Department of Conservation as a designated tsunami area.

In general, the Rialto Pipeline alignment is in relatively flat areas that are not susceptible to mudflows. A portion of the western alignment is within the foothills; however, the majority of the area is naturally vegetated and not subject to mudflows.

4.9.2.4 Second Lower Feeder

The Second Lower Feeder is within Orange and Los Angeles counties. Within Orange County, the Second Lower Feeder is within the North Watershed Management Area. Within Los Angeles County, the pipeline is within the San Gabriel River watershed.

The North Watershed Management Area encompasses 376 square miles in northern Orange County and is bordered by Los Angeles County to the north and west and by San Bernardino County to the east. The three watersheds in this area are the Santa Ana River, San Gabriel River/Coyote Creek, and Anaheim Bay-Huntington Harbour. All three watersheds lie within the Santa Ana RWQCB boundary.

Surface Water Hydrology and Watersheds

The Santa Ana River watershed is the largest in Orange County, covering approximately 210 square miles. The river begins almost 75 miles away in the San Bernardino Mountains, crossing central Orange County before emptying into the Pacific Ocean. The river serves as the main tributary to the watershed with Santiago Creek being the largest tributary within Orange County.

The Lower San Gabriel River/Coyote Creek watershed is approximately 86 square miles within the northwestern corner of Orange County and includes parts of the cities of Anaheim, Brea, Buena Park, Cypress, Fullerton, La Habra, La Palma, Los Alamitos, Placentia, and Seal Beach. The primary surface water body within the watershed is Coyote Creek, which flows from Los Angeles County to the San Gabriel River. Carbon Creek flows from the foothills to the San Gabriel River and has six retarding basins. Other creeks/channels include Brea Creek, Moody Creek, Fullerton Creek, and Los Alamitos Channel.

The Anaheim-Bay Huntington Harbour watershed is approximately 80 square miles south and includes portions of the cities of Anaheim, Cypress, Fountain Valley, Garden Grove, Huntington Beach, Los Alamitos, Santa Ana, Seal Beach, Stanton, and Westminster. Surface water systems provide drainage within this watershed, including the Bolsa Chica Channel that provides drainage to Anaheim Bay-Huntington Harbour, and the East Garden Grove-Wintersburg Channel that carries flow to Bolsa Bay and ultimately to Huntington Harbour. Westminster Channel connects to the Bolsa Chica Channel and Sunset Channel.

The San Gabriel River watershed is in the eastern portion of Los Angeles County. (See description in Section 4.9.2.3, *Rialto Pipeline*.)

Local Surface Water Hydrology

The portion of the Second Lower Feeder alignment in the North Watershed Management Area is situated along both pervious and impervious areas. The impervious areas are generally associated with residential and industrial land uses and the pervious areas are drainage features and undeveloped lands. Beginning from the eastern end of the Second Lower Feeder, the alignment generally follows street rights-of-way through residential, commercial, and industrial areas (impervious surface) before crossing the Anaheim Union Canal (Figure 4.9-4). Anaheim Union Canal in this location is concrete lined (impervious surface). The alignment then follows street rights-of-way and developed areas (impervious surface) before crossing Carbon Creek west of Anaheim Lake. Carbon Creek is riprap lined (pervious surface) through the study area. The alignment then continues to follow street rights-of-way and developed (impervious surface) until crossing Carbon Canyon Creek near the intersection of Ball Road and Valley View Street. Carbon Canyon Creek has concrete walls with riprap lining (pervious surface) through the study area. The alignment then continues to follow street rights-of-way and developed areas (impervious surface) until crossing Coyote Creek near the Los Angeles County line. Coyote Creek is concrete lined (impervious surface) through the study area. The remainder of the alignment is within Los Angeles County and follows street rights-of-way and developed areas (impervious surface), and crosses the Artesia-Norwalk Drain, San Gabriel River Reach 1, an unnamed drainage, Los Angeles River Reach 1, and Dominguez Channel Estuary, which are all concrete-lined drainages (impervious surface).

A large portion of the Second Lower Feeder alignment is within an area of minimal flood hazard (Figure 4.9-4). Where the alignment crosses the above-mentioned water bodies, the flood zone risk elevates to the 1 and 2 percent annual chance flood hazard.

Groundwater Hydrology

The Second Lower Feeder study area is in the Coastal Plain of Orange County Groundwater Basin and the Coastal Plain of Los Angeles Groundwater Basin, Central Subbasin, in Los Angeles County (DWR 2013).

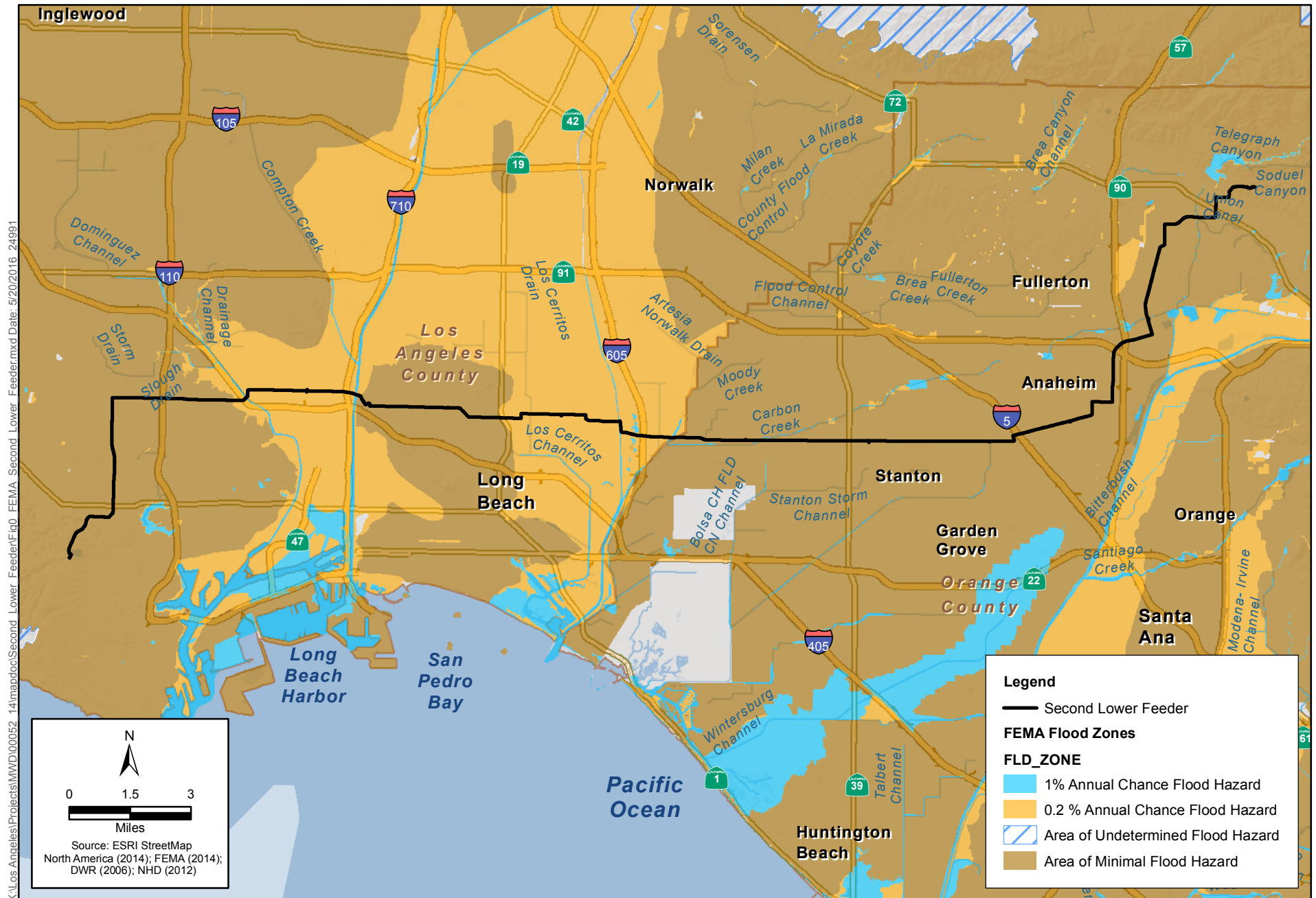


Figure 4.9-4
FEMA Flood Zones near the Second Lower Feeder Pipeline
Metropolitan PCCP Program

The Coastal Plain of Orange County Groundwater Basin underlies northern and central Orange County and covers an area of approximately 350 square miles, bordered by the Coyote Hills and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest (OCWD 2015a). The basin boundary extends to the Orange County-Los Angeles County line to the northwest, where groundwater flow is unrestricted across the county line into the Coastal Plain of Los Angeles Groundwater Basin. The groundwater basin is divided into three major aquifer systems—the Shallow, Principal, and Deep—which are hydraulically connected, as groundwater is able to flow between them via leakage through the intervening aquitards or discontinuities in the aquitards (OCWD 2015b). Recharge to the basin is derived from percolation of Santa Ana River flow, infiltration of precipitation, and injection into wells. The Santa Ana River flow contains natural flow, reclaimed water, and imported water that is spread in the basin forebay.

The Central Subbasin occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles Groundwater Basin (DWR 2004c). This subbasin is commonly referred to as the “Central Basin” and is bounded on the north by a surface divide called the La Brea high, and on the northeast and east by emergent, less permeable Tertiary rocks of the Elysian, Repetto, Merced, and Puente Hills. The southeastern boundary between the Central Basin and Coastal Plain of Orange County Groundwater Basin roughly follows Coyote Creek, which is a regional drainage province boundary. The southwestern boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift. The Los Angeles and San Gabriel rivers drain inland basins and pass across the surface of the Central Basin on their way to the Pacific Ocean. Groundwater enters the Central Basin through surface and subsurface flow and by direct percolation of precipitation, stream flow, and applied water, and replenishes the aquifers dominantly in the forebay areas where permeable sediments are exposed at ground surface. Natural replenishment of the subbasin’s groundwater supply is largely from surface inflow through Whittier Narrows (and some underflow) from the San Gabriel Valley. Percolation into the Los Angeles Forebay Area is restricted due to paving and development of the surface of the forebay. Imported water purchased from Metropolitan and recycled water from the Whittier and San Jose treatment plants are used for artificial recharge in the Montebello Forebay at the Rio Hondo and San Gabriel River spreading grounds.

Water Quality

The 303(d) listed impairments of receiving waters within the Second Lower Feeder study area and downstream receiving waters are shown in Table 4.9-4.

Table 4.9-4. Overview of Water Quality Impairments in the Second Lower Feeder Study Area

Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
Coyote Creek	Ammonia	Point Source	2019
	Dissolved Copper	Source Unknown	EPA TMDL approval 2007
	Diazinon	Source Unknown	2019
	Indicator Bacteria	Source Unknown	2009
	Lead	Major Municipal Point Source-wet weather discharge	EPA TMDL approval 2007
	pH	Source Unknown	2019

Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
	Toxicity	Point Source	2008
San Gabriel River Reach 1	Coliform Bacteria	Source Unknown	2019
	pH	Source Unknown	2009
Los Angeles River Reach 1	Ammonia	Point/Non-Point Source	2004
	Cadmium	Source Unknown	2005
	Coliform Bacteria	Point/Non-Point Source	2009
	Dissolved Copper	Point Source	2005
	Cyanide	Source Unknown	2019
	Diazinon	Source Unknown	2019
	Lead	Point/Non-Point Source	2005
	Nutrients (algae)	Point/Non-Point Source	2004
	pH	Point/Non-Point Source	2003
	Trash	Nonpoint Source Surface Runoff Urban Runoff/Storm Sewers	2008
	Dissolved Zinc	Point/Non-Point Source	2005
Dominguez Channel Estuary	Ammonia	Point/Non-Point Source	2019
	Benthic Community Effects	Point/Non-Point Source	2019
	Benzo(a)anthracene	Source Unknown	2019
	Benzo(a)pyrene	Source Unknown	2019
	Chlordane (tissue)	Point/Non-Point Source	2019
	Chrysene	Source Unknown	2019
	Coliform Bacteria	Point/Non-Point Source	2007
	DDT (tissue and sediment)	Point/Non-Point Source	2019
	Dieldrin (tissue)	Point/Non-Point Source	2019
	Lead (tissue)	Point/Non-Point Source	2019
	PCBs	Source Unknown	2019
	Phenanthrene	Source Unknown	2019
	Pyrene	Source Unknown	2019
	Sediment Toxicity	Atmospheric Deposition Nonpoint Source Surface Runoff Urban Runoff/Storm Sewers	2021
	Zinc (sediment)	Point/Non-Point Source	2019
Source: SWRCB 2011.			

Seiche, Tsunami, and Mudflow

No large bodies of permanently stored water are located such that they would affect the Second Lower Feeder study area in the event of earthquake-induced failure or seiches.

The Second Lower Feeder study area is over 3 miles from the Pacific Ocean at its closest point along the alignment. Due to the topography and elevation of the study area, the portion of the alignment closest to the Pacific Ocean is not subject to inundation from tsunami and is not identified by the California Department of Conservation as a designated tsunami area.

In general, the Second Lower Feeder is in relatively flat areas that are not susceptible to mudflows.

4.9.2.5 Sepulveda Feeder

The Sepulveda Feeder is in Los Angeles County within the Los Angeles River, Santa Monica Bay, and Dominguez Channel watersheds.

Surface Water Hydrology and Watersheds

The Los Angeles River watershed covers a land area of 834 square miles. (See description in Section 4.9.2.2, *Calabazas Feeder*.)

The Santa Monica Bay watersheds include the North Santa Monica Bay, South Santa Monica Bay, Ballona Creek, and Marina Del Rey watersheds; the Sepulveda Feeder study area is within Ballona Creek watershed (DPW 2007a). Ballona Creek flows as an open channel for just under 10 miles from mid-Los Angeles (south of Hancock Park) through Culver City, reaching the Pacific Ocean at Playa del Rey (Marina del Rey Harbor) (City of Los Angeles 2016). The estuary portion (from Centinela Avenue to the outlet) is soft bottomed, while the remainder of the creek is lined in concrete. Ballona Creek is fed by a network of underground storm drains. Major tributaries of the creek and estuary include Centinela Creek, Sepulveda Channel, Benedict Canyon Channel, and numerous storm drains (DPW 2016a).

The Dominguez watershed is within the southern portion of Los Angeles County and encompasses approximately 133 square miles of land and water (DPW 2016b). Approximately 96 percent of the land is developed. Residential development covers nearly 40 percent of the watershed, and another 41 percent is made up by industrial, commercial, and transportation uses. Rather than being defined by the natural topography of its drainage area, the Dominguez watershed boundary is defined by a complex network of storm drains and smaller flood control channels. The Dominguez Channel extends from Los Angeles International Airport to Los Angeles Harbor.

Local Surface Water Hydrology

The portion of the Sepulveda Feeder in the Los Angeles River watershed is situated along both pervious and impervious areas. The impervious areas are generally associated with residential and industrial land uses and the pervious areas are drainage features. Beginning from the northern end of the Sepulveda Feeder, the alignment generally follows street rights-of-way through developed areas (impervious surface) before crossing Bull Creek near State Route 118 (SR-118) (Figure 4.9-5). Bull Creek in this location is channelized underground. The alignment then follows street rights-of-way and developed areas (impervious surface) before crossing an unnamed concrete flood control channel that confluences with Bull Creek; the alignment once again crosses Bull Creek approximately 0.25 mile from the confluence with the flood control channel (near the intersection of Hayvenhurst Avenue and Plummer Street). The alignment then continues to follow street rights-of-way and developed areas (impervious surface) until crossing the Los Angeles River Reach 4 near the intersection of U.S. Highway 101 (US-101) and Interstate 405 (I-405). The Los Angeles River is concrete lined (impervious surface) through the Sepulveda Feeder study area.

The portion of the Sepulveda Feeder in the Ballona Creek watershed is situated along both pervious and impervious areas. The impervious areas are generally associated with residential and transportation land uses and the pervious areas are drainage features and undeveloped land. Beginning from the northern end of the Ballona Creek watershed, the alignment generally follows I-405, developed areas, and street rights-of-way before crossing Ballona Creek. Ballona Creek in this area is concrete lined. The alignment then follows street rights-of-way and developed areas (impervious surface) before crossing Dominguez Channel. Dominguez Channel in this area is concrete lined.

A large portion of the Sepulveda Feeder alignment is within an area of minimal flood hazard (Figure 4.9-5). A small portion of the alignment is within an area of undetermined flood hazards.

Groundwater Hydrology

The Sepulveda Feeder study area is in the San Fernando Groundwater Basin (described in Section 4.9.1.2) and the Coastal Plain of Los Angeles Groundwater Basin, Santa Monica and West Coast subbasins, in Los Angeles County (DWR 2013).

The Santa Monica Subbasin underlies the northwestern part of the Central Basin (DWR 2004a). It is bounded by impermeable rocks of the Santa Monica Mountains on the north and by the Ballona escarpment, an abandoned erosional channel from the Los Angeles River, on the south. The subbasin extends from the Pacific Ocean on the west to the Inglewood fault on the east. Ballona Creek is the dominant hydrologic feature and drains surface waters to the Pacific Ocean. Replenishment of groundwater in the Santa Monica Basin is mainly by percolation of precipitation and surface runoff onto the subbasin from the Santa Monica Mountains. The Inglewood fault appears to inhibit replenishment by underflow from the Central Basin to the east, though some inflow may occur at its northern end.

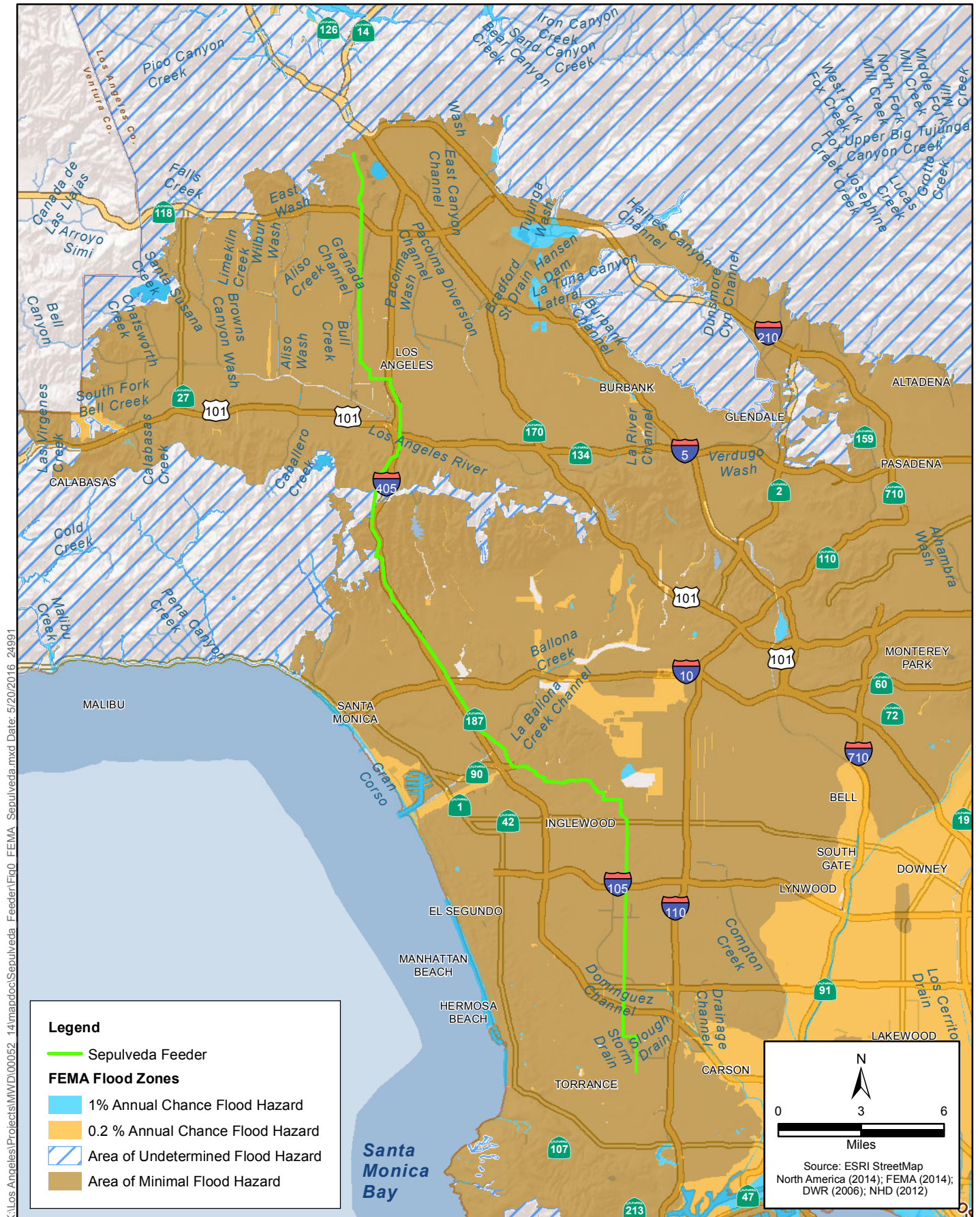
The West Coast Basin is bounded on the north by the Ballona escarpment, on the east by the Newport-Inglewood fault zone, and on the south and west by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills (DWR 2004b). The surface of the subbasin is crossed in the south by the Los Angeles River through the Dominguez Gap and the San Gabriel River through the Alamitos Gap, both of which then flow into San Pedro Bay. Natural replenishment of the basin's groundwater supply is largely limited to underflow from the Central Basin through and over the Newport-Inglewood fault zone. Water spread in the Central Basin percolates into aquifers there, and eventually some cross the Newport-Inglewood fault to supplement the groundwater supply in the West Coast Basin.

Water Quality

The 303(d) listed impairments of receiving waters within the Sepulveda Feeder study area and downstream receiving waters are shown in Table 4.9-5.

Table 4.9-5. Overview of Water Quality Impairments in the Sepulveda Feeder Study Area

Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
Bull Creek	Indicator Bacteria	Source Unknown	2021



Water Body	Listed Impairments	Potential Sources	Estimated EPA TMDL Completion
Los Angeles River Reach 4	Ammonia	Point/Non-Point Source	2004
	Coliform Bacteria	Point/Non-Point Source	2019
	Copper	Source Unknown	2005
	Lead	Point/Non-Point Source	2005
	Nutrients (algae)	Point/Non-Point Source	2004
	Trash	Nonpoint Source Surface Runoff Urban Runoff/Storm Sewers	2008
Ballona Creek	Cadmium (sediment)	Point/Non-Point Source	205
	Coliform Bacteria	Point/Non-Point Source	2007
	Dissolved Copper	Non-Point Source	2005
	Cyanide	Source Unknown	2019
	Lead	Source Unknown	2005
	Selenium	Source Unknown	2005
	Toxicity	Source Unknown	2005
	Trash	Source Unknown	2001
	Viruses	Point/Non-Point Source	2007
	Zinc	Source Unknown	2005
Dominguez Channel (lined portion above Vermont Avenue)	Ammonia	Point/Non-Point Source	2019
	Copper	Point/Non-Point Source	2019
	Diazinon	Source Unknown	2021
	Indicator Bacteria	Point/Non-Point Source	2007
	Lead	Point/Non-Point Source	2019
	Toxicity	Point/Non-Point Source	2021
	Zinc	Point/Non-Point Source	2019
Source: SWRCB 2011.			

Seiche, Tsunami, and Mudflow

No large bodies of permanently stored water are located such that they would affect the Sepulveda Feeder study area in the event of earthquake-induced failure or seiches.

The Sepulveda Feeder is over 3.5 miles from the Pacific Ocean at its closest point along the alignment. As a result, the study area is not subject to inundation from tsunami and is not identified by the California Department of Conservation as a designated tsunami area.

In general, the Sepulveda Feeder alignment is in relatively flat areas that are not susceptible to mudflows, with the exception of the alignment through the Santa Monica Mountains. A portion of the alignment travels through the Santa Monica Mountains; however, the majority of the alignment is in developed areas and is not subject to mudflows.

4.9.3 Regulatory Framework

This section describes the plans, policies, and regulations related to hydrology and water quality that are applicable to the proposed program.

4.9.3.1 Federal

Clean Water Act (33 U.S.C. § 1251 et seq.)

The federal CWA of 1977 (33 U.S. Code Section 1251 et seq.), which amended the federal Water Pollution Control Act of 1972, establishes the basic structure for regulating discharges of pollutants into waters of the United States (not including groundwater). The CWA delegates authority to EPA to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained and implemented within compliance. In addition, the CWA requires the states to adopt water quality standards for receiving water bodies and to have those standards approved by EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses.

Section 303: Impaired Water Bodies (303(d) list) and Total Maximum Daily Loads

Under Section 303(d) of the CWA, SWRCB is required to develop a list of impaired water bodies that do not meet water quality standards (promulgated under the National Toxics Rule or the California Toxics Rule) after the minimum technology-based effluent limitations have been implemented for point sources. Lists are to be priority ranked for development of a TMDL. A TMDL is a calculation of the total maximum amount of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The California RWQCBs and EPA are responsible for establishing TMDL waste-load allocations and incorporating improved load allocations into water quality control plans, NPDES permits, and waste discharge requirements. Section 305(b) of the CWA requires that states assess the status of water quality conditions within the state in a report to be submitted every 2 years.

Section 402: National Pollutant Discharge Elimination System Permits

Section 402(p) of the CWA was amended in 1987 to require EPA to establish regulations for permitting of municipal and industrial (including active construction sites) stormwater discharges under the NPDES permit program. EPA published final regulations for industrial and municipal stormwater discharges on November 16, 1990. The NPDES program requires all industrial facilities and municipalities of a certain size that discharge pollutants into waters of the United States to obtain a permit. Stormwater discharges in California are commonly regulated through general and individual NPDES permits, which are adopted by SWRCB or the RWQCBs and are administered by the RWQCBs. EPA requires NPDES permits to be revised to incorporate waste-load allocations for TMDLs when the TMDLs are approved (40 Code of Federal Regulations [CFR] 122).

4.9.3.2 State

Responsibility for the protection of water quality in California resides with SWRCB and the nine RWQCBs. SWRCB establishes statewide policies and regulations for the implementation of water

quality control programs mandated by federal and state water quality statutes and regulations. The Los Angeles, Santa Ana, and San Diego RWQCBs and SWRCB implement a number of federal and state laws regarding water quality, the most important of which are the State of California's Porter-Cologne Water Quality Control Act and the federal CWA.

Porter-Cologne Water Quality Control Act (Cal. Water Code § 13000 et seq.)

The State of California's Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California, including the California Toxics Rule, the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan, or SIP), Inland Surface Water Quality Standards, the California Urban Water Management Act, and NPDES permits. SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. The Porter-Cologne Water Quality Control Act authorizes SWRCB to adopt, review, and revise policies for all waters of the state (including both surface and groundwater) and directs the RWQCBs to develop regional water quality control plans (Basin Plans). Section 13170 of the California Water Code also authorizes SWRCB to adopt Basin Plans on its own initiative.

The RWQCBs are required, by law, to develop, adopt, and implement a Basin Plan for the entire region. The principal elements of the Basin Plan are a statement of beneficial water uses that the RWQCBs will protect; water quality objectives needed to protect the designated beneficial water uses; and strategies and time schedules for achieving the water quality objectives. The water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements (WDRs).

National Pollutant Discharge Elimination System Permits

Construction General Permit

Pursuant to CWA Section 402(p) and as related to the goals of the Porter-Cologne Water Quality Control Act, SWRCB has issued a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit), adopted September 2, 2009 (SWRCB 2012). Every construction project that disturbs 1 or more acres of land surface or that is part of a common plan of development or sale that disturbs more than 1 acre of land surface would require coverage under this Construction General Permit. To obtain coverage under this Construction General Permit, the landowner or other applicable entity must file Permit Registration Documents prior to the commencement of construction activity, which include a Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SWPPP) prepared by a Qualified SWPPP Developer, and mail the appropriate permit fee to SWRCB.

Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least 1 acre of total land area. The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges; and (2) to describe and ensure the implementation of best management practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater discharges. BMPs are intended to reduce impacts to the maximum extent practicable (MEP), which is a standard created

by Congress to allow regulators the flexibility necessary to tailor programs to the site-specific nature of municipal stormwater discharges. The SWPPP is required to be implemented and monitored regularly by a Qualified SWPPP Practitioner. Reducing impacts to the MEP generally relies on BMPs that emphasize pollution prevention and source control, with additional structural controls as needed. The Construction General Permit requires that specific minimum BMPs are incorporated into the SWPPP, depending on the project's sediment risk to receiving waters based on the project's erosion potential and receiving water sensitivity to sediment.

Municipal Separate Storm Sewer System

CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4 Permit). Phase I MS4 Permit regulations cover medium (serving between 100,000 and 250,000 people) and large (serving more than 250,000 people) municipalities. Phase II (Small MS4 Permit) regulations require that stormwater management plans/programs be developed by municipalities with populations smaller than 100,000, including non-traditional Small MS4s, which are facilities such as military bases, public campuses, and prison and hospital complexes.

MS4 Permits require that cities and counties develop and implement programs and measures, including BMPs, control techniques, system design and engineering methods, and other measures as appropriate, to reduce the discharge of pollutants in stormwater to the maximum extent possible. As part of permit compliance, these permit holders have created stormwater management plans for their respective locations. These plans outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. These requirements may include multiple measures to control pollutants in stormwater discharge. During implementation of specific projects under the program, project applicants are required to follow the guidance contained in the stormwater management plans as defined by the permit holder in that location.

SWRCB is advancing Low-Impact Development (LID) in California as a means of complying with municipal stormwater permits. LID incorporates site design, including among other things the use of vegetated swales and retention basins and minimization of impermeable surfaces, to manage stormwater to maintain a site's predevelopment runoff rates and volumes.

4.9.3.3 Regional

Regional Water Quality Control Boards

The RWQCBs develop and implement Basin Plans that consider regional beneficial uses, water quality characteristics, and water quality problems.

Basin Plans and Water Quality Objectives

The preparation and adoption of Basin Plans is required by the California Water Code (Section 13240) and supported by the CWA. Section 303 of the CWA requires states to adopt water quality standards that "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." According to Section 13050 of the California Water Code, Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected, water quality objectives to protect those uses, and a program of

implementation needed for achieving the objectives. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control.

Water quality standards are set forth in the regional Basin Plan. Designated beneficial uses, along with water quality objectives to meet beneficial uses, compose the relevant water quality standards. Water quality objectives are achieved primarily through the establishment and enforcement of WDRs. All dischargers of waste to waters of the state are subject to regulation under the Porter-Cologne Water Quality Control Act. This includes both point- and nonpoint-source dischargers. All current and proposed discharges to land must be regulated under WDRs, waivers of WDRs, a Basin Plan prohibition, or some combination of these administrative tools. Discharges of waste directly to state waters would be subject to an individual or general NPDES permit, which also serves as a WDR.

The RWQCBs specifically designate beneficial uses for surface and groundwater; set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy; and describe implementation programs to protect all waters in the region. In cases where the Basin Plan does not contain a criterion for a particular pollutant, other criteria are used to establish a water quality objective. These may be applied from SWRCB documents (e.g., the Inland Surface Waters Plan, the Pollutant Policy Document) or from water quality criteria developed under Section 304(a) of the CWA, which requires development of criteria for water quality that accurately reflect the latest scientific knowledge (e.g., California Toxics Rule).

Discharges from artificial conveyances, such as flood control channels and minor lakes that are part of the storm drain system, may not have designated beneficial uses or water quality objectives. For those waters that don't have specific beneficial uses or water quality objectives, the tributary rule² applies.

Stormwater Management Programs

The proposed program study area is within the jurisdiction of the Los Angeles, Santa Ana, and San Diego RWQCBs.

Los Angeles RWQCB

Los Angeles County Municipal Stormwater NPDES Permit (MS4 Permit)

The current MS4 Permit for Los Angeles County (Order No. R4-2012-0175, as amended by SWRCB Order WQ 2015-0075) was adopted on November 8, 2012, became effective December 28, 2012, and will expire on December 28, 2017. Order No. R4-2012-0175 is the fourth iteration of the stormwater permit for the MS4s in the Los Angeles region, which includes the Los Angeles County Flood Control District, county of Los Angeles, and 84 incorporated cities (including the study area cities in Los Angeles County) within the county watersheds, excluding the city of Long Beach. The permit contains requirements that are necessary to improve efforts to reduce the discharge of pollutants in stormwater runoff to the MEP and achieve water quality standards. This permit

² The "tributary rule" refers to any streams not specifically listed in the Basin Plan that are deemed to have the same beneficial uses and water quality objectives of the listed stream, river, or lake to which they are a tributary.

requires that runoff is addressed during the major phases of urban development (planning, construction, and operation) in order to reduce the discharge of pollutants from stormwater to the MEP, effectively prohibiting non-stormwater discharges and protecting receiving waters. The MS4 Permit also includes construction requirements for implementation of minimum construction site BMPs for erosion, sediment, non-stormwater management, and waste management on construction sites.

The permit also requires the design and implementation of specific post-construction controls to mitigate stormwater pollution, prior to project completion, for all “new development” and “redevelopment” projects that meet certain criteria as specified in the permit. During operation of new development or redevelopment, the permit prohibits non-stormwater discharges from the development (with some conditional exceptions), and requires BMPs to eliminate discharges to the MEP. Stormwater effluent must meet water quality-based effluent limitations, or water quality standards for discharge leaving the site, and must not cause or contribute to the exceedance of receiving water limitations (water quality standards for receiving waters).

Redevelopment projects are all discretionary permit projects or project phases that have not been deemed complete for processing. The proposed program may be considered a redevelopment project subject to permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution, should the following criteria apply within the Los Angeles program study area (except the City of Long Beach).

1. Where redevelopment results in an alteration to more than 50 percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, the entire project must be mitigated.
2. Where redevelopment results in an alteration of less than 50 percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, only the alteration must be mitigated, and not the entire development.
 - a. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility, or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways that does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

Long Beach City Municipal Stormwater NPDES Permit (MS4 Permit)

In March 2014, Los Angeles RWQCB reissued the City of Long Beach MS4 Storm Water Permit as WDR Order R4-2014-0024 (NPDES Permit No. CAS004003). Pursuant to this MS4 Permit, the City of Long Beach is required to develop and implement Minimum Control Measures as part of a Stormwater Management Program. In order to comply with the updated MS4 Permit, the *Low Impact Development (LID) Best Management Practices (BMP) Design Manual* was developed (City of Long Beach 2013) in advance of the final permit, which details actions for compliance with the LID regulations adopted in City Ordinance No. ORD-10-035, such as land development policies pertaining to LID and hydromodification for new development and significant redevelopment projects. The use of LID BMPs in project planning and design is to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration,

evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and non-structural design components that restore these water quality functions into the project's land plan.

One component of the New Development/Significant Redevelopment section of the City's Stormwater Management Plan is the provision to prepare a project-specific LID Plan to infiltrate, evapotranspire, and/or capture and use stormwater runoff to prevent pollutants from leaving the site. If partial or complete on-site compliance is infeasible, the LID Plan is required to comply with, at a minimum, all applicable Standard Urban Stormwater Management Plan (SUSMP) requirements. This includes operation and maintenance requirements for all structural or treatment control BMPs required for specific categories of developments to reduce pollutants in post-development runoff to the MEP. All development and redevelopment in Long Beach is subject to LID requirements of the City's Department of Development Services' *Low Impact Development (LID) Best Management Practices (BMP) Design Manual*, except for the following projects.

- A development or redevelopment that does not require a building permit
- A development or redevelopment creating, adding, or replacing less than 500 square feet of impervious surface area
- A development or redevelopment involving only emergency construction activity required to immediately protect public health and safety
- A development or redevelopment involving the grinding/overlaying and replacement of existing parking lots
- A development or redevelopment involving only re-striping of permitted parking lots
- A redevelopment resulting in land-disturbing activities or replacement of 50 percent or less of an existing building, structure, or impervious surface area
- An infrastructure project within the public right-of-way
- A development or redevelopment involving only activity related to gas, water, cable, or electricity services on private property
- A project involving only exterior movie and television production sets, or façades on an existing developed site
- A development or redevelopment where LID requirements are technically infeasible

As required by the City's LID Ordinance on stormwater quality management, all development or redevelopment that does not meet the above-listed exemptions must submit a LID Plan to the City for approval prior to the City issuing any building or grading permits.

The proposed program may be considered exempt from compliance with the Long Beach MS4 Permit should the infrastructure project occur only within the public right-of-way, involve only activity related to water on private property, or not require a building permit. Should any of these conditions not apply, the proposed program may be subject to the Long Beach MS4 Permit.

Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles

Discharges of treated or untreated groundwater generated from permanent or temporary dewatering operations or other applicable wastewater discharges not specifically covered in other

general or individual NPDES permits are currently regulated under a regional general permit, General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (General Permit) (Order No. R4-2013-0095, NPDES No. CAG994004). Permittees are required to monitor their discharges from groundwater extraction waste from construction and dewatering activities to ensure that proposed effluent limitations for constituents are not exceeded.

Construction dewatering wastes (except stormwater) are regulated as low-threat discharges to surface waters. An NOI and Report of Waste Discharge must be submitted to the Los Angeles RWQCB to comply with this General Permit. Based on the depth to groundwater, it is anticipated that the proposed program would require groundwater dewatering during construction, and would be subject to the requirements of this General Permit within Los Angeles RWQCB jurisdiction. During the design phase, each pipeline segment is evaluated with site-specific boring tests to determine exact location and potential for groundwater during construction activities. Sites that require dewatering activities due to groundwater encountered on site are required to either obtain permission to discharge to the sanitary sewer system through the local sewer agency or file for the General Permit to discharge to the MS4.

Santa Ana RWQCB

Orange County Municipal Stormwater NPDES Permit (MS4 Permit)

Orange County is split into two RWQCB jurisdictional areas. North and central Orange County (any area north of El Toro Road) are part of the Santa Ana RWQCB. South Orange County (any area south of El Toro Road) is part of the San Diego RWQCB. The County of Orange (unincorporated area) and cities of Laguna Hills, Laguna Woods, and Lake Forest have land area in both regions.

Stormwater discharges from northern and central Orange County are currently regulated under the Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff (Order No. R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062) (MS4 Permit). The MS4 Permit requires that discharges from the MS4s shall not cause or contribute to exceedances of receiving water quality standards (designated beneficial uses and water quality objectives) for surface water or groundwater.

The Orange County Flood Control District and certain cities within the county are all co-permittees of this MS4 Permit (including the Orange County study area cities except Mission Viejo); are responsible for the management of storm drain systems within their jurisdictions; and are required to implement management programs, monitoring programs, implementation plans, and all BMPs within each respective jurisdiction and to take any other actions as may be necessary to meet the MEP standard. Provisions for a Monitoring and Reporting Program and compliance inspections are incorporated in the MS4 Permit and include requirements for construction site inspections, including review of erosion control and BMP implementation plans and effectiveness. Each co-permittee is also required to enforce its ordinances and permits at all construction sites.

Developments that qualify as a development or redevelopment project, as specified by criteria in the MS4 Permit, are required to develop a site-specific water quality management plan (WQMP), which includes site design, source control, and treatment control elements to reduce the discharge of pollutants in urban runoff. The WQMP requires identification of hydrologic conditions of concern, which are defined as a significant impact on downstream channels caused by an alteration in the

project site hydrologic regime. Alterations in a hydrologic regime include the following for a 2-year frequency storm event: increases in runoff volume, decreases in infiltration, changes in time of concentration, potential for increases in post-development downstream erosion, and potential for adverse downstream impacts on physical structure and aquatic and riparian habitat.

Significant redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in the addition or replacement of less than 50 percent of the impervious surfaces of a previously existing developed site, and the existing development was not subject to WQMP requirements, the numeric sizing criterion applies only to the addition or replacement, and not to the entire developed site. Where redevelopment results in the addition or replacement of more than 50 percent of the impervious surfaces of a previously existing developed site, the numeric sizing criterion applies to the entire development. The proposed program may be considered a redevelopment project subject to permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, should the above-listed criteria apply within the Orange County program study area (except the City of Mission Viejo).

San Bernardino County Municipal Stormwater NPDES Permit (MS4 Permit)

On January 29, 2010 the Santa Ana RWQCB adopted Order No. R8-2010-0036 (NPDES Permit CAS618036), the area-wide MS4 Permit for the Santa Ana Region of San Bernardino County. This order was the fourth permit issued to the permit area since 1990 and it expired on January 29, 2015.³ The MS4 program currently designates the Flood Control District as the principal permittee. The County of San Bernardino and the study area cities of Fontana, Rancho Cucamonga, Rialto, San Bernardino, and Upland are designated as co-permittees. The permit contains provisions for receiving water limitations, discharge prohibitions, and stormwater management, monitoring, and reporting for reducing pollutants to the MEP standard.

The County developed a Model Area-Wide Local Implementation Plan (LIP) in July 2010 that was approved by the Santa Ana RWQCB in January 2011. The LIP, a requirement of the MS4 Permit, describes how the permittees implement the requirements of the MS4 Permit within their own jurisdictions. In addition, the County developed an in-depth Technical Guidance Document for WQMPs in July 2011. Accordingly, the LIP and Technical Guidance Document are the principal documents that comprehensively translate the MS4 Permit requirements into standards, conditions of approval, and actions that manage water quality in the local MS4. Each permittee shall require a project-specific WQMP for priority projects as early as possible during the environmental review or planning phase (land use entitlement). The combination of site design/LID BMPs (where feasible), source control, and/or treatment control BMPs, including regional treatment systems, in project-specific WQMPs shall address all identified pollutants and hydrologic conditions of concern from new development and/or significant redevelopment projects.

Significant redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site subject to discretionary approval of the permittee. Redevelopment does not include routine maintenance activities that are conducted to

³ Although this permit has expired, it is still in effect until a new permit has been issued.

maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in the addition or replacement of less than 50 percent of the impervious surfaces of a previously existing developed site, and the existing development was not subject to WQMP requirements, the numeric sizing criterion applies only to the addition or replacement, and not to the entire developed site. Where redevelopment results in the addition or replacement of more than 50 percent of the impervious surfaces of a previously existing developed site, the numeric sizing criterion applies to the entire development. The proposed program may be considered a redevelopment project subject to permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, should the above-listed criteria apply within the San Bernardino County program study area.

General Waste Discharge Requirements for Low-Threat Discharges to Surface Waters

Low-threat discharges are currently regulated under a regional general permit, General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant Threat to Water Quality (Low Threat Discharge General Permit) (Order No. R8-2015-0004, NPDES No. CAG998001). Low-threat discharges are not expected to cause toxicity; therefore, no toxicity limits are specified in the Low Threat Discharge General Permit. However, effluent limitations are specified for TDS, Total Inorganic Nitrogen, Total Petroleum Hydrocarbons, Total Residual Chlorine, Suspended Solids, Sulfides, Oil and Grease, and pH.

Construction dewatering wastes (except stormwater) are regulated as low-threat discharges to surface waters. An NOI and Report of Waste Discharge must be submitted to the Santa Ana RWQCB to comply with this Low Threat Discharge General Permit. Based on the depth to groundwater expected in many segments of the program area, it is anticipated the proposed program would require groundwater dewatering during construction and would be subject to the requirements of this Low Threat Discharge General Permit within the Santa Ana RWQCB jurisdiction.

San Diego RWQCB

Orange County Municipal Stormwater NPDES Permit (MS4 Permit)

On May 8, 2013, the San Diego RWQCB approved a regional MS4 Permit for San Diego, southern Orange, and southwestern Riverside counties (Order No. R9-2013-0001). The region-wide NPDES Permit (commonly referred to as the Regional MS4 Permit) sets the framework for municipalities, such as the City of Mission Viejo, to implement a collaborative watershed-based approach to restore and maintain the health of surface waters. The Regional MS4 Permit requires development of Water Quality Improvement Plans that will allow permittees to prioritize and address pollutants through an appropriate suite of BMPs in each watershed.

To implement the requirements of the Regional MS4 Permit, the co-permittees developed a Drainage Area Master Plan (DAMP) that includes a Model New Development and Redevelopment Program. Per the requirements in the DAMP and the Regional MS4 Permit, the permittees are required to adopt a LIP to implement the DAMP and Regional MS4 Permit in their jurisdictions. Using the LIP as a guide, the permittees will approve WQMPs for new development and redevelopment projects within their jurisdictions as part of the development plan and entitlement approval process. WQMPs for new development and significant redevelopment projects that fall under specific priority project categories must include Site Design, Routine Structural and Nonstructural, and Treatment Control BMPs; include an Operations and Maintenance Plan; and

address LID retention/biofiltration and hydromodification criteria. The priority project categories are those determined by the San Diego RWQCB to have the greatest potential to affect receiving waters with polluted runoff.

A Priority Development Project is defined as a redevelopment project that creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. The proposed program may be considered a Priority Redevelopment Project subject to permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, should the above-listed criteria apply within the south Orange County program study area (Mission Viejo).

General Waste Discharge Requirements for Discharges from Groundwater Extraction and Similar Discharges to Surface Waters

On March 12, 2008, the San Diego RWQCB issued the General WDRs for Discharges from Groundwater Extraction and Similar Discharges to Surface Waters within the San Diego Region Except for San Diego Bay (Order No. R9-2008-0002, Permit No. CAG919002) (Groundwater Discharge Permit). This permit regulates discharges of treated and untreated groundwater from construction to surface waters. It specifies the discharge prohibitions, receiving water limitations, monitoring and reporting program requirements, and general compliance determination criteria for groundwater dewatering during construction activities and drilling, construction, and purging of wells. Dischargers are required to collect and analyze representative groundwater samples for all constituents listed in the Groundwater Discharge Permit. Based on the results, dischargers would be required to provide treatment for any toxic compounds detected above the applicable screening levels. To obtain coverage under the Groundwater Discharge Permit, each permittee must submit an NOI to begin the application process.

4.9.3.4 Local

Table 4.9-6 lists the applicable hydrology and water quality regulations for the proposed program.

Table 4.9-6. Applicable Hydrology and Water Quality Regulations for the Proposed Program

Local Agency	Title of Plan, Policy, Regulation (date)	Applicable Regulation
Allen-McColloch Pipeline		
City of Yorba Linda	Municipal Code Chapter 16.04, Water Quality Control	The purpose of this chapter is to participate in the improvement of water quality and comply with federal requirements for the control of urban pollutants to stormwater runoff. This section of the Municipal Code requires compliance with the municipal NPDES permit and other applicable laws or regulations.
City of Anaheim	Municipal Code Chapters 17.04, 10.09, and 10.19	Chapter 17.04, Grading, Excavations, Fills, Watercourses, reduces the potential for excessive stormwater runoff and erosion and sediment transport; Chapter 10.09, NPDES, ensures compliance with the Municipal Stormwater NPDES Permit and minimization of water quality degradation; and Chapter 10.19, Landscape Water Efficiency, reduces the

Local Agency	Title of Plan, Policy, Regulation (date)	Applicable Regulation
		potential for dry-weather runoff.
City of Orange	Local Implementation Plan (2011)	The City LIP implements the various programs of the DAMP such as the inspection of industrial and commercial businesses, construction projects, new development projects, illegal discharges/illicit connections, and other requirements. The plan describes the activities that the City is currently undertaking to meet the requirements of its NPDES permits and to make meaningful improvements in urban water quality.
City of Tustin	Guidelines for Preliminary Water Quality Management Plans (2015)	The Guidelines identify projects requiring a WQMP. The preliminary WQMP is designed to address a project's quality and quantity of stormwater runoff to allow for the implementation of LID and hydromodification control BMPs. The combination of Site Design, Source Control, and LID and Treatment Control BMPs must adequately address all identified potential pollutants and hydrologic conditions of concern.
City of Irvine	City Council Ordinance No. 10-06 (2010) / Local Implementation Plan (LIP) (2007)	The purpose of the ordinance is to continue the City's participation in the improvement of water quality and to ensure adequate legal authority exists for the City to enforce federal and state requirements for the control of pollutants from stormwater/urban runoff.
City of Lake Forest	Local Implementation Plan (2010)	The City LIP is the principal stormwater guidance and compliance document specific to the City's jurisdiction. The LIP provides description and detail of the City's water quality program implementation activities. The LIP is designed to work in conjunction with the Orange County DAMP.
City of Mission Viejo	Local Implementation Plan (2010)	The City LIP describes the City-specific programs and activities that are being implemented to meet the requirements of the NPDES permit. The City's implementation of the LIP and related countywide programs are managed by the Public Works Department, which coordinates the development, implementation, and administration of the stormwater program for the City overall.
Calabasas Feeder		
City of Los Angeles	City of Los Angeles Low-Impact Development Ordinance and Manual (2011)	The City of Los Angeles institutionalized the use of LID techniques for development and redevelopment projects. Subsequent to the adoption of the Stormwater LID Ordinance, the City prepared the <i>Development Best Management Practices Handbook: Low Impact Development Manual</i> , dated June 2011, to describe the required BMPs.
City of Hidden Hills	Storm Water Management and Discharge Control Ordinance	The intent of the ordinance is to protect and enhance the quality of watercourses, water bodies, and wetlands within the City in a manner consistent with the Municipal NPDES Permit. The ordinance is intended to provide the City with the legal authority necessary to control discharges to and from those portions of the stormwater system over which it has jurisdiction.
City of Calabasas	Standard Urban Storm Water Mitigation Plan (2005)	The SUSMP was developed as part of the municipal stormwater program to address stormwater pollution from new development and redevelopment. The SUSMP contains a

Local Agency	Title of Plan, Policy, Regulation (date)	Applicable Regulation
		list of the minimum required BMPs that must be used for a designated project. Additional BMPs may be required on a case-by-case basis.
Rialto Pipeline		
City of San Bernardino	Municipal Code Chapter 8.80, Storm Water Drainage System	The purpose of the chapter is to ensure the health, safety, and general welfare of the residents by prescribing regulations to effectively prohibit non-storm water discharges into the City's stormwater drainage system.
City of Rialto	Municipal Code Chapter 12.60, Municipal Separate Storm Sewer System	The intent is to protect and enhance the quality of watercourses, water bodies, groundwater, and wetlands within the City in a manner consistent with the Municipal NPDES Permit. This chapter is also intended to confirm and consolidate the City's legal authority necessary to control discharges to and from those portions of the MS4 over which it has jurisdiction. This chapter is also intended to ensure the health, safety, and general welfare of the residents by prescribing reasonable regulations to control effectively non-stormwater discharges containing pollutants into the city's MS4 to the MEP.
City of Fontana	Municipal Code Chapter 23-Article IX, Preventing Discharge of Pollutants Into Storm Drains	The purpose is to protect and enhance the water quality of watercourses, water bodies, groundwater, and wetlands in a manner consistent with federal, state, and local laws and regulations, and to implement the requirements of the City's NPDES permit. The environmental manager is authorized to impose BMPs on all users of the storm drain system, including users from existing residential or commercial development.
City of Rancho Cucamonga	Local Implementation Plan (2015)	The LIP describes how the City implements the requirements of the MS4 Permit within its own jurisdiction. Accordingly, the Municipal Stormwater Management Plan and the LIP are the principal documents that comprehensively translate the MS4 Permit requirements into actions that manage water quality in the local MS4. The LIP provides information regarding stormwater management requirements associated with new development or significant redevelopment projects.
City of Upland	Title 13 Public Services, Chapter 13.32, Environmental Quality Enterprise, Article IV. Stormwater Drainage Management	This section of the Municipal Code requires compliance with the Municipal NPDES Permit and other applicable laws or regulations.
City of Claremont	Chapter 8.28 of Title 8, Stormwater and Runoff Pollution Control (2014)	The purpose of the chapter is to protect the health and safety of the residents by protecting the beneficial uses, marine habitats, and ecosystems of receiving waters from pollutants carried by stormwater and non-stormwater discharges.
City of La Verne	Municipal Code Chapter 13.50 Stormwater And Urban Runoff Pollution Control	The purpose is to protect and enhance the water quality of watercourses, water bodies, groundwater, and wetlands in a manner consistent with the CWA. The purpose is to eliminate non-stormwater discharges to the municipal storm drain; control the discharge from spills, dumping, or disposal of materials other than stormwater to municipal storm drains;

Local Agency	Title of Plan, Policy, Regulation (date)	Applicable Regulation
		and reduce pollutants in stormwater discharges to the MEP. This section of the Municipal Code requires compliance with the Municipal NPDES Permit.
City of San Dimas	Municipal Code Chapter 14.11, Stormwater Management and Discharge	This section of the Municipal Code requires the submittal of an urban stormwater mitigation plan prior to the submittal of an application for a new development project, which shall be designed to reduce project runoff through incorporation of design elements and principles that include maximizing the percentage of permeable surfaces on site, minimizing the amount of stormwater directed to impermeable areas, and minimizing parking lot pollution through the effective use of BMPs.
Second Lower Feeder		
City of Yorba Linda	Municipal Code Chapter 16.04, Water Quality Control	The purpose of this chapter is to participate in the improvement of water quality and comply with federal requirements for the control of urban pollutants to stormwater runoff. This section of the Municipal Code requires compliance with the SUSMP.
City of Placentia	Municipal Code Chapter 16.20, Stormwater Runoff And Urban Pollutant Control	The purpose of the chapter is to participate in the improvement of water quality and comply with federal requirements for the control of urban pollutants to stormwater runoff, which enters the network of storm drains throughout Placentia. This section of the Municipal Code requires compliance with the Municipal NPDES Permit and Orange County DAMP.
City of Anaheim	Municipal Code Chapters 17.04, 10.09, and 10.19	Chapter 17.04, Grading, Excavations, Fills, Watercourses, reduces the potential for excessive stormwater runoff and erosion and sediment transport; Chapter 10.09, NPDES, ensures compliance with the Municipal Stormwater NPDES Permit and minimization of water quality degradation; and Chapter 10.19, Landscape Water Efficiency, reduces the potential for dry-weather runoff.
City of Buena Park	Municipal Code Chapter 13.32, Stormwater Drainage	This section of the Municipal Code requires compliance with the Municipal NPDES Permit.
City of Cypress	Local Implementation Plan	The LIP describes the activities the City performs to comply with the permit requirements. This includes the incorporation of design criteria containing water quality protection measures into all new development and redevelopment projects that occur within the City. This is done through the preparation of a WQMP. A Model WQMP document has been developed to assist in this preparation.
City of Los Alamitos	Municipal Code Chapter 8.44, Stormwater and Urban Runoff Pollutant Controls	The purpose of this chapter is to protect the health and safety of the waters of the state and the United States, those who recreate in and consume food from those waters, and marine habitats and ecosystems. This section of the Municipal Code requires compliance with the Municipal NPDES Permit.
City of Long Beach	Municipal Code Chapter 18.74, Low	Requires the use of LID standards and practices in future developments and redevelopments to encourage the beneficial

Local Agency	Title of Plan, Policy, Regulation (date)	Applicable Regulation
	Impact Development Standards (2010)	use of rainwater and urban runoff; reduce stormwater/urban runoff while improving water quality; reduce off-site runoff and provide increased groundwater recharge; and reduce erosion and hydrologic impacts downstream. The requirement to incorporate LID standards into the design plans of development and redevelopment projects to mitigate stormwater quality impacts is implemented through the City's plan review and approval process.
City of Lakewood	Stormwater and Runoff Pollution Control Ordinance	The City adopted the same ordinance as the County of Los Angeles stormwater and runoff pollution control ordinance. The purpose is to protect the beneficial uses, marine habitats, and ecosystems of receiving waters from pollutants carried by stormwater and non-stormwater discharges.
City of Carson	Storm Water Management and Discharge Control Ordinance	This section of the Municipal Code requires compliance with the Municipal NPDES Permit.
City of Los Angeles	City of Los Angeles Low-Impact Development Ordinance and Manual (2011)	The City of Los Angeles institutionalized the use of LID techniques for development and redevelopment projects. Subsequent to the adoption of the Stormwater LID Ordinance, the City prepared the <i>Development Best Management Practices Handbook: Low Impact Development Manual</i> to describe the required BMPs.
City of Torrance	Municipal Code Chapter 10, Storm Water And Urban Runoff Pollution Control	This section of the Municipal Code requires compliance with the Municipal NPDES Permit.
City of Lomita	Stormwater and Runoff Pollution Control Ordinance	The City adopted the same ordinance as the County of Los Angeles stormwater and runoff pollution control ordinance. The ordinance requires compliance with the Municipal NPDES Permit.
City of Rolling Hills Estates	Municipal Code Chapter 8.38, Stormwater and Urban Runoff Pollution Control	The purpose of this chapter is to implement the City's municipal NPDES permit by reducing pollutants in stormwater discharges to the MEP and incorporating BMPs and other mitigation measures and design features regarding stormwater runoff in new development and redevelopment projects.
Sepulveda Feeder		
City of Los Angeles	City of Los Angeles Low-Impact Development Ordinance and Manual (2011)	The City of Los Angeles institutionalized the use of LID techniques for development and redevelopment projects. Subsequent to the adoption of the Stormwater LID Ordinance, the City prepared the <i>Development Best Management Practices Handbook: Low Impact Development Manual</i> to describe the required BMPs.
City of Culver City	Municipal Code Chapter 5.05, Storm Water And Urban Runoff Pollution Control	The purpose of this chapter is to implement the City's municipal NPDES permit by reducing pollutants in stormwater discharges to the MEP and incorporating BMPs and other mitigation measures and design features regarding stormwater runoff in new development and redevelopment

Local Agency	Title of Plan, Policy, Regulation (date)	Applicable Regulation
		projects.
City of Gardena	Municipal Code Chapter 8.70, Storm Water And Runoff Pollution Control	The purpose of this chapter is to protect the public health, welfare, and safety and to reduce the quantity of pollutants being discharged to waters of the United States through the elimination of non-stormwater discharges to the municipal stormwater system, the elimination of the discharge of pollutants into the municipal storm drain system, the reduction of pollutants in stormwater discharges to the MEP, and the protection and enhancement of the quality of the waters of the United States in a manner consistent with the provisions of the CWA.
City of Hawthorne	Municipal Code Chapter 8.50, Storm Water And Runoff Pollution Control	This section of the Municipal Code requires compliance with the Municipal NPDES Permit.
City of Inglewood	Municipal Code Article 16, Stormwater Management And Discharge Control	The ordinance requires discharges to the storm drain to be composed entirely of stormwater except as permitted; appropriate BMPs; regular sweeping and cleaning of all parking lots with 25 or more spaces; and compliance with all applicable NPDES requirements.
City of Torrance	Municipal Code Chapter 10, Storm Water And Urban Runoff Pollution Control	This section of the Municipal Code requires compliance with the Municipal NPDES Permit.

4.9.4 Thresholds and Methodology

4.9.4.1 Thresholds of Significance

Table 4.9-7 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to hydrology and water quality. It indicates which impacts were determined to be less than significant in the Initial Study and therefore do not require additional analysis and which impacts must be analyzed in the PEIR for the proposed program.

Table 4.9-7. CEQA Thresholds for Hydrology and Water Quality

Threshold	Analysis Required for the Proposed Program
<i>Would the proposed program:</i>	
a. Violate any water quality standards or waste discharge requirements?	X
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits	N/A*

Threshold <i>Would the proposed program:</i>	Analysis Required for the Proposed Program
have been granted)?	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?	X
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	X
e. 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?	X
f. Otherwise substantially degrade water quality?	X
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	N/A*
h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	N/A*
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	N/A*
j. Expose people or structures to inundation by seiche, tsunami, or mudflow?	X
*Determined to be less than significant in the Initial Study (Appendix A).	

4.9.4.2 Methodology

Water Quality Standards and Waste Discharge Requirements

This analysis identifies applicable water quality standards and waste discharge standards for the program pipeline alignments and determines if the typical construction scenarios would be consistent with these standards. This analysis assumes that each project would incorporate Metropolitan's environmental commitments and typical BMPs and comply with applicable regulations. Mitigation is provided to reduce potentially significant impacts to less-than-significant levels. ~~and/or to require further analysis at the project level, if necessary.~~

As part of the program, Metropolitan has agreed to implement the following environmental commitment related to water quality standards and waste discharge requirements, and this commitment is considered part of the program for analysis purposes.

- Sediment and Erosion Control – Post Construction BMPs.** The Contractor shall submit its construction Storm Water Pollution Prevention Plan (SWPPP) for projects over one acre or Water Pollution Control Plan (WPCP) for projects under one acre, whichever is required by the project, to the Engineer for review and approval. The submitted SWPPP or WPCP shall be fully compliant with the requirements of the SWRCB, Construction Storm Water Program. Upon acceptance of Contractor-prepared SWPPP, Metropolitan will file the SWPPP together with the

Notice of Intent (NOI) and obtain a Waste Discharge Identification number (WDID) from the SWRCB. At a minimum, the SWPPP or WPCP shall contain the following, as required:

- Names and qualifications of its SWPPP Manager, Qualified SWPPP Developer (QSD), and Qualified SWPPP Practitioner (QSP).
- Site and source descriptions (including the elements and characteristics specific to the site).
- Descriptions of BMPs for erosion and sediment control, which shall:
 - Prevent runoff from flowing over unprotected slopes.
 - Keep disturbed areas to the minimum necessary for construction.
 - Control sediment transport within the site and prevent sediment transport from the site, using appropriate BMPs, including but not limited to check dams, fiber rolls sand bags, and siltation fences. Reduce sediment transport off site through construction of appropriately designed desilting and retention ponds.
 - Remove and dispose of all construction-generated siltation collected within or behind BMPs, including retention ponds.
 - Confine soil disturbance activities to the dry season, whenever possible. If construction needs to be scheduled for the wet season, ensure that erosion and sediment transport control measures are implemented prior to disturbance of soil and/or vegetation.
 - Stabilize disturbed areas as quickly as possible but in no case shall the time of stabilization exceed the time limits specified by the Permit.
 - Maintain existing temporary controls until they are replaced with permanent controls.
 - Maintain and improve existing controls as necessary to comply with the Permit for construction activity.
- BMPs for construction waste handling and disposal.
- Implementation of approved local plans.
- A sampling plan and/or sampling contingency plan, as required and based on project risk level.
 - The Contractor shall make visual inspections of all erosion control and sediment transport devices as necessary to ensure proper operation not less than once per week, and promptly before and after every rainstorm and at least every 24 hours during an extended rainfall event. If such inspection reveals that additional measures are needed to prevent erosion and sediment transport, the Contractor shall promptly maintain, modify, or install additional devices as needed. The Contractor shall use the forms in the SWPPP for all inspections, and all completed forms shall be included in the SWPPP, and submitted to Metropolitan.
 - The Contractor shall perform routine maintenance, which shall include maintenance and repair of BMPs, debris removal, silt/sediment removal, clearing of vegetation around flow control devices to prevent clogging, and maintenance of healthy vegetative cover.
- Comply with post-construction BMPs for post-construction erosion and sediment control prepared by Metropolitan.

- Non-storm water management.
- All annual compliance certifications, monitoring program reports, and data as required by terms and conditions of the CGP [Construction General Permit] and SWPPP.
- **Dewatering.** If required, the Contractor shall obtain coverage and comply with the applicable NPDES Dewatering Permit for hydrostatic testing, leak testing and disinfection water, and uncontaminated groundwater if discharged into storm drain. Construction (non-storm) waters may include, but are not limited to water from hydrostatic and other leak tests. Waters shall not be discharged to inland surface waters, including storm drains, or groundwater bodies, without first meeting the discharge requirements of the applicable NPDES Dewatering Permit. Waters shall not be discharged into sanitary sewers or storm water drains without first obtaining permits required by all applicable agencies.

Drainage Patterns, Erosion, and Siltation

This analysis considers the typical construction scenarios that would be part of the proposed program to determine if they may result in water discharge, alteration of drainage patterns, increased runoff, and impacts related to erosion or siltation. This analysis assumes that each project would incorporate Metropolitan's environmental commitments and typical BMPs and comply with applicable regulations. ~~Mitigation is provided to reduce potentially significant impacts to less than significant levels and/or to require further analysis at the project level, if necessary.~~

Drainage Patterns, Runoff, and Flooding

This analysis considers the typical construction scenarios that would be part of the proposed program to determine if they may result in water discharge, alteration of drainage patterns, increased runoff, and impacts related to flooding on or off the rehabilitation sites. This analysis determined if the proposed program would create or contribute to runoff water that would exceed the capacity of existing or planned drainage systems or provide substantial additional sources of polluted runoff. This analysis assumes that each project would incorporate Metropolitan's environmental commitments and typical BMPs and comply with applicable regulations. ~~Mitigation is provided to reduce potentially significant impacts to less than significant levels and/or to require further analysis at the project level, if necessary.~~

Water Quality

Impacts of the program on surface water quality are analyzed considering the program-related sources of pollution during rehabilitation, such as sediments and other construction materials. The proposed program is analyzed for potential impacts on beneficial uses and water quality objectives (i.e., pollutants of concern) of receiving waters. Receiving waters with CWA Section 303(d) impaired water quality are identified, along with the impairment (pollutant/stressor) and an indication of whether the impairment would have the potential to be further affected by projects in the proposed program. Surface water quality impacts are discussed for land disturbance activities occurring near water bodies or storm drains, pipe dewatering into surface waters, and other potential impacts related to stormwater or non-stormwater discharges. This analysis assumes that each project would incorporate Metropolitan's environmental commitments and typical BMPs and comply with applicable regulations. ~~Mitigation is provided to reduce potentially significant impacts to less than significant levels and/or to require further analysis at the project level, if necessary.~~

Seiche, Tsunami, and Mudflow

Areas within the study area for each pipeline that are subject to seiche, tsunami, or mudflow are identified in Section 4.9.2. This analysis addresses how the projects in the proposed program would relate to these factors, if rehabilitation activities were to occur in the subjected areas. This analysis assumes that each project would incorporate Metropolitan's environmental commitments and typical BMPs and comply with applicable regulations. ~~Mitigation is provided to reduce potentially significant impacts to less-than-significant levels and/or to require further analysis at the project level, if necessary.~~

4.9.5 Impacts Analysis

4.9.5.1 Program Analysis

Threshold WQ-A: Violate Any Water Quality Standards or Waste Discharge Requirements

Multiple excavation areas would be needed to rehabilitate the pipelines and buried equipment vaults included in the proposed program. For each mile of PCCP line, from three up to five excavation sites may be necessary (though fewer sites would be necessary in most locations). Each excavation area would be approximately 20 feet wide and 50 feet long and would be on average approximately 15 to 20 feet deep; however, these dimensions would vary from site to site based upon the size and depth of the pipe or vault to be rehabilitated. Construction of each excavation area would require the use of heavy equipment and construction-related chemicals, such as fuels, oils, grease, solvents, and paints, that would be stored in limited quantities on site. In the absence of proper controls, these construction activities could result in accidental spills or disposal of potentially harmful materials used during construction that could wash into and pollute surface waters or groundwater. Materials that could potentially contaminate the construction area from a spill or leak include diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids.

Existing surface improvements, such as road pavements, sidewalks, and landscaping, would be removed at each excavation area, and soils would be excavated and temporarily removed from the site to expose the existing pipeline. Once rehabilitation is complete, the excavation area would be backfilled with soils originally excavated, and the surface of each excavation area and surrounding work zone would be restored to existing conditions. This would involve repaving existing roads, replacing or repairing existing sidewalks, and replanting landscaping. Metropolitan would incorporate Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*, into each project to minimize any construction-related runoff impacts.

Because the proposed program would be implemented incrementally over time, there would be no single construction discharge permitting process. Instead, as construction of each of the proposed projects is initiated, individual construction discharge permits would be acquired. As identified in Section 4.9.4.2, *Methodology*, where the anticipated total disturbance for a facility would be greater than 1 acre, coverage under the statewide Construction General Permit (SWRCB Water Quality Order 2009-0009-DWQ) would be fulfilled by submitting an NOI to comply with the Construction

General Permit and having a Qualified SWPPP Developer prepare and implement the SWPPP, among other things. The SWPPP would include BMPs to control erosion, sedimentation, and hazardous materials release from construction sites into surface waters. Construction BMPs would be designed to minimize erosion and sedimentation and prevent spills. Various BMPs may be needed at different times during construction, because activities are constantly changing site conditions. Selection of erosion control BMPs is based on minimizing disturbed areas, stabilizing disturbed areas, and protecting water quality. Selection of sediment control BMPs is based on retaining sediment on site and controlling the site perimeter. In addition, the SWPPP identifies the following: equipment storage, cleaning, and maintenance areas/activities; points of ingress and egress to the construction site; material loading, unloading, and storage practices and areas, including construction materials, building materials, and waste materials; and materials, equipment, or vehicles that may come in contact with stormwater. These measures would prevent excavated and eroded soils, construction materials, or debris from being transported to receiving waters.

If anticipated disturbance is less than 1 acre, the Construction General Permit would not apply. Instead, the project would be required to comply with minimum BMPs as specified by the applicable MS4 Permit (Los Angeles, Long Beach, Orange County, San Bernardino), which would similarly require implementation of BMPs to provide erosion control, sediment control, and waste management strategies for construction sites.

In select areas, shallow groundwater may be present and could potentially interfere with construction activities, requiring groundwater dewatering in support of construction. Metropolitan would incorporate Groundwater Dewatering standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*, into each project to minimize any construction-related dewatering impacts. If groundwater dewatering is determined to be necessary during construction, an NOI to comply with the applicable Groundwater Dewatering General Permit would be required. Dewatering typically involves the extraction of shallow groundwater and subsequent discharge into nearby storm drains or other receiving bodies in order to facilitate the construction of underground facilities. Compliance with the conditions of the applicable general permit would ensure that dewatering discharges would not elevate pollutant concentrations beyond existing water quality limitations or otherwise deleteriously affect beneficial use of receiving waters.

Because the precise location of the PCCP line improvements and the appropriate construction techniques are not known at this time, the specific location of potential effects cannot be determined. However, the sensitive water resources identified along the program pipelines (as identified in Section 4.9.2) could be affected by the proposed program improvements, resulting in impacts on hydrology and water quality. While the work generally would be performed in areas of low environmental sensitivity (street rights-of-way), there are several channels and streams the proposed program crosses that could be potentially affected. The following discussion breaks down the different impacts that could occur on the various water resources within the program area. The analyses describe the impacts on water resources in terms of impervious and pervious surfaces. Impervious surfaces are further broken down to describe impacts within the paved right-of-way and concrete channels. Pervious surfaces are broken down further to describe impacts within natural channels and on natural lands.

Paved Right-of-Way (Impervious)

The existing PCCP lines are predominantly within public rights-of-way. Construction would generally take place in the existing public rights-of-way because that is the current location of the

pipeline. Impacts on hydrology and water quality would be minimized in these paved right-of-way areas. Existing surface improvements, such as road pavements, sidewalks, and landscaping, would be removed at each excavation area, and soils would be excavated and temporarily removed from the site to expose the existing pipeline. Soil stockpiles would be located away from drainage courses, drain inlets, or concentrated flows of stormwater. Non-active soil stockpiles would be covered and contained within temporary perimeter sediment barriers, such as berms, dikes, silt fences, or sandbag barriers. Because excavation areas would be on average approximately 15 to 20 feet deep, potential pollutants generally would be contained within the excavated areas, minimizing the potential discharge of pollutants from the project site to receiving waters. Because Metropolitan would require the contractor to comply with all applicable NPDES regulations, including the Municipal and Construction General permits (Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*), and because the proposed work would occur predominantly in public rights-of-way and below ground, impacts would be less than significant.

Concrete Channel (Impervious)

The existing PCCP lines cross several concrete channels with the program study area (as identified in Section 4.9.2). The surface waters the proposed program facilities cross are channelized and thus have a set drainage pattern; no excavation areas would occur within or adjacent to concrete channels to minimize the potential for discharge to these drainages. Proposed facility operations would not involve the alteration of these channels. It is anticipated the bed and banks of each concrete channel would not be altered because the primary component simply retrofits the existing pipeline under the channels. Because Metropolitan would require the contractor to comply with all applicable NPDES regulations, including the Municipal and Construction General permits (Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*), and because the proposed work would not occur within the concrete channel, impacts would be less than significant. New pipeline alignments across the concrete channels would require further environmental review and may be subject to additional permitting requirements.

Natural Channel/Streams (Pervious)

The existing PCCP lines cross several natural channels with the program area (as identified in Section 4.9.2). The natural channels the proposed program facilities cross are not channelized and thus have a meandering drainage pattern, such as Cajon Wash and Lytle Creek; no excavation areas would occur within or adjacent to natural channels to minimize the disturbance to these natural drainages. Proposed facility operations would not involve the alteration of these channels. It is anticipated the bed and banks of each natural channel would not be altered because the primary component simply retrofits the existing pipeline under the channels. Because Metropolitan would require the contractor to comply with all applicable NPDES regulations, including the Municipal and Construction General permits (Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*), and because the proposed work would not occur within the bed and banks of the natural channel, impacts would be less than significant. New pipeline alignments across the natural channels would require further environmental review and would be subject to additional permitting requirements.

Natural Land (Hillside/Undeveloped) (Pervious)

While the existing PCCP line is predominantly within public rights-of-way, several portions of the Allen-McColloch Pipeline, Rialto Pipeline, and Sepulveda Feeder traverse natural lands, including hillsides and undeveloped and agricultural land uses. Some of these natural areas are also associated with natural drainages; no excavation areas would occur within or adjacent to natural drainages to minimize the disturbance to these natural drainages. Impacts on hydrology and water quality generally would be minimized in these natural areas. Existing landscaping would be removed at each excavation area, and soils would be excavated and temporarily removed from the site to expose the existing pipeline. Soil stockpiles would be located away from drainage courses, drain inlets, or concentrated flows of stormwater. Non-active soil stockpiles would be covered and contained within temporary perimeter sediment barriers, such as berms, dikes, silt fences, or sandbag barriers. Because excavation areas would be on average approximately 15 to 20 feet deep, potential pollutants generally would be contained within the excavated areas, minimizing the potential discharge of pollutants from the project site to receiving waters. Once rehabilitation is complete, the excavation area would be backfilled with soils originally excavated, and the surface of each excavation area and surrounding work zone would be restored to existing conditions. Because Metropolitan would require the contractor to comply with all applicable NPDES regulations, including the Municipal and Construction General permits (Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*), and because the work zone would be restored to existing conditions, impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold WQ-C: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, in a Manner that Would Result in Substantial Erosion or Siltation On or Off Site

The proposed program facilities would not alter the course of a stream or river. The proposed program would not involve the alteration of these channels, nor is it expected to increase the flow within these channels. As a result, there would be no increase in erosion or siltation along river or stream channels.

Implementation of the proposed program could alter existing drainage patterns at each project site in other ways. Construction would include excavation and the overall disturbance of existing hardscape and landscape, would expose bare soil, and could temporarily alter drainage patterns with the potential to cause erosion and sedimentation. Adherence to applicable NPDES regulations, including the Municipal and Construction General permits (Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*), would ensure erosion or siltation does not occur on site through implementation of

erosion and sediment control BMPs during construction of the projects. These requirements would include the implementation of BMPs for erosion, sediment, non-stormwater management, and waste management, as described further in Threshold WQ-A. Furthermore, once rehabilitation is complete, the excavation area would be backfilled with soils originally excavated, and the surface of each excavation area and surrounding work zone would be restored to existing conditions. With implementation of erosion and sediment control BMPs and restoration of the site, construction-related impacts related to alteration of an existing drainage pattern that could result in substantial erosion or siltation on or off site from the proposed program would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold WQ-D: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding On or Off Site

The proposed program facilities would not alter the course of a stream or river. The proposed program would not involve the alteration of these channels, nor is it expected to increase the flow within these channels. As a result, there would be no associated potential for flooding.

Implementation of the proposed program could alter existing drainage patterns at each project site in other ways. The presence of new aboveground facilities at each project site may change the extent of permeable or impermeable surfaces, which could alter the direction and volume of overland flows during both wet and dry periods. Aboveground enclosures are typically located on sidewalk median strips and house back-flow preventer valves and air vents. For aboveground enclosures on existing impervious surfaces, the addition of the structure would not alter the drainage pattern and no impact would occur. However, for aboveground enclosures on existing pervious surfaces, the addition of the structure may alter the drainage pattern, resulting in flooding on or off site. Given the small size of these structures, they are unlikely to significantly affect the drainage pattern. However, because the precise location of the aboveground facilities and the appropriate construction techniques are not known at this time, the specific location of potential effects cannot be determined. During project design of aboveground enclosures, overland flows and drainage at each project site with pervious conditions would be assessed and drainage facilities designed such that no net increase in runoff would occur, in accordance with the applicable MS4 Permit. As required by MM HYD-1, a grading and drainage plan would be developed during project design for aboveground facilities within pervious areas and implemented to ensure no increase in flooding on or off site. This also would ensure no substantial increases in erosion or sedimentation and no exceedance of the existing capacity of stormwater drainage systems. Impacts would be less than significant with mitigation.

Mitigation Measures

MM HYD-1 Implementation of a Grading and Drainage Plan.

Prior to construction of aboveground project facilities, Metropolitan will prepare a grading and drainage plan that identifies anticipated changes in flow that would occur on site and minimizes any potential increases in flooding, erosion, or sedimentation potential in accordance with applicable regulations and in coordination with requirements for the county and/or the city in which the facility would be located. ~~The In accordance with local requirements,~~ the plan will identify and implement best management practices and other measures to ensure that potential increases in stormwater flows and erosion are minimized.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM HYD-1 would reduce these impacts so that residual impacts would be less than significant.

Threshold WQ-E: 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

Runoff could be generated during construction of the proposed program facilities during a storm event or from non-stormwater discharges, such as water used for dust control or hydrostatic testing of the pipelines. If BMPs are improperly installed, this could result in runoff that could overwhelm the stormwater drainage system or result in sedimentation. Stormwater controls would be necessary to prevent runoff in amounts that would overwhelm the stormwater drainage system and to prevent pollutants, such as sediments, to increase in concentration and discharge from the project site. Metropolitan would incorporate Sediment and Erosion Control – Post Construction BMPs standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*, into each project to minimize any construction-related runoff impacts. Metropolitan would also incorporate Groundwater Dewatering standard practices and requirements, as identified in Section 4.9.4.2, *Methodology*, into each project to minimize any construction-related dewatering impacts. Dewatering typically involves the extraction of shallow groundwater and subsequent discharge into nearby storm drains or other receiving bodies in order to facilitate the construction of underground facilities. Compliance with the conditions of the applicable general permit would ensure that dewatering discharges would not elevate pollutant concentrations.

Moreover, the work generally would be performed in areas of low environmental sensitivity (public rights-of-way); no excavation areas would be within or adjacent to channels to minimize the disturbance to these drainages. However, the Second Lower Feeder crosses the Dominguez Channel near the I-405 and Carson Street intersection. The downstream receiving waters of the Dominguez Channel Estuary is a 303(d)-listed water body as impaired for sediment toxicity. As a result, this waterway is particularly sensitive to sediment discharges, and additional BMPs may be necessary during construction to control and capture sediment from the project site to prevent discharge. As required by the RWQCB, the SWPPP or WPCP would identify the water body as sensitive for sediment and would implement BMPs to ensure the beneficial uses and water quality objectives are upheld. BMPs would be regularly inspected and monitored for performance during construction activities. Additional BMPs would be installed as necessary to ensure the waterways are protected

to the MEP. Metropolitan would be required to comply with all applicable regulations and permits as noted under Threshold WQ-A. Therefore, impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold WQ-J: Expose People or Structures to Inundation by Seiche, Tsunami, or Mudflow

The program study area does not include coastal areas that could be subject to tsunami. The program area includes some areas that are adjacent to enclosed bodies of water that could be subject to seiche under extreme conditions. However, the flood inundation area is a pre-existing condition within the project area, and the placement of the proposed project facilities in the inundation area would not exacerbate this condition. The proposed program facilities consist of either subterranean improvements or low-profile features (permanent appurtenant structures) that are generally not considered susceptible to substantive damage from these hazards. Aboveground enclosures, typically located on sidewalk median strips, house back-flow preventer valves and air vents. No permanent structures would be staffed and any potential damage the aboveground enclosures might incur would likely be relatively easily repaired. As a result, the potential impact on structures subject to inundation by seiche would be less than significant.

In general, the proposed program would be in relatively flat areas that are not susceptible to mudflows. However, small portions of the Allen-McColloch Pipeline, Rialto Pipeline, and Sepulveda Feeder are within hilly areas that may be susceptible to mudflow under extreme conditions. However, the proposed program is an existing facility, and the proposed program would not add new aboveground facilities that would exacerbate mudflow conditions. Furthermore, proposed program facilities consist of either subterranean improvements or low-profile features that are generally not considered susceptible to substantive damage from these hazards. As a result, the potential impact on structures subject to mudflow would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.9.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases implementation of the projects in the proposed program would occur past the planning horizons of

local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

The geographic scope of analysis for cumulative impacts on hydrology and water quality includes the watershed in which the program would occur. The proposed program would involve land-disturbing activities that would expose soils and, as such, would require compliance with the Construction General Permit. Compliance with the Construction General Permit would require development and implementation of a SWPPP by a Qualified SWPPP Developer, which would list BMPs that would be implemented by a Qualified SWPPP Practitioner to protect stormwater runoff and include a monitoring plan for measuring BMP effectiveness. At a minimum, BMPs would include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP would specify properly designed, centralized storage areas that keep these materials out of the rain. The primary BMPs selected would focus on erosion control (i.e., keeping sediment in place), followed by sediment control (i.e., keeping sediment on the site). In addition to the SWPPP, implementation of Metropolitan's environmental commitments and typical BMPs would be required, which would reduce impacts on water quality.

The proposed program would not contribute to a cumulative degradation of water quality. Development of the proposed program and other development within the study area could degrade stormwater quality by contributing pollutants during construction. When the effects of the proposed program on water quality are considered in combination with the potential effects of other cumulative projects, there is the potential for cumulative impacts on surface water, stormwater, and groundwater quality. The incremental water quality impact contribution from implementation of the proposed program would be minor because required BMPs would reduce the potential for pollutant discharge in stormwater runoff. The combined effects on water quality from the proposed program and other projects in the study area could result in a cumulatively significant impact. However, new projects within the study area are also subject to the requirements of the associated Municipal NPDES Permit, the Construction General Permit, and the applicable municipal codes as they relate to water quality; these regulatory requirements have been designed to be protective of water quality. Additionally, development projects would be subject to an environmental review process, which would identify potential site- and/or project-specific water quality impacts and mitigate for any potential significant impacts. Therefore, the proposed program, in conjunction with other cumulative projects, would not result in significant cumulative impacts on hydrology and water quality resources within the program study area, and the proposed program's contribution to impacts would not be cumulatively considerable.

Section 4.10

Land Use

4.10.1 Introduction

This section describes the existing conditions for land use, the regulatory framework associated with land use, the impacts on land use that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant land use impacts.

4.10.2 Existing Conditions

The study area for land use is the pipeline easements or rights-of-way and the immediately adjacent properties. (Note to reader: No figures are provided for existing or planned land uses in this document because it is not practical to map land uses at the program-level scale, and because the proposed program would not change any existing or planned land uses.)

4.10.2.1 Allen-McColloch Pipeline

The Allen-McColloch Pipeline, which is approximately 26 miles in length, is located in Orange County and within the city limits of Yorba Linda, Anaheim, Orange, Tustin, Lake Forest, and Mission Viejo. The Allen-McColloch Pipeline originates from the Diemer Water Treatment Plant in unincorporated Orange County. The pipeline exits the Diemer Water Treatment Plant to the southeast below the Black Gold Golf Club, prior to continuing south between residential and commercial land uses in Yorba Linda. After crossing the Santa Ana River and State Route 91 (SR-91)), the Allen-McColloch Pipeline generally runs parallel to Imperial Highway before crossing undeveloped and residential land uses. It continues southeast along the outskirts of Orange, North Tustin, and Irvine, traversing primarily undeveloped and agricultural land uses until entering residential and commercial land uses of Lake Forest. The Allen-McColloch Pipeline terminates at the El Toro Reservoir in Mission Viejo.

Planned land uses through which the Allen-McColloch Pipeline travels are identified in Table 4.10-1.

Table 4.10-1. Planned Land Uses Associated with the Allen-McColloch Pipeline

Jurisdiction	Planned Land Uses
City of Yorba Linda	Residential, Commercial, Open Space (City of Yorba Linda 1993)
City of Anaheim	Commercial, Parks, Residential (City of Anaheim 2004)
City of Orange	Open Space, Residential (City of Orange 2010)
City of Tustin	Residential, Planned Community Public/Institutional (City of Tustin 2013)
City of Lake Forest	Open Space, Residential, Commercial, Public Facility (City of Lake Forest 1994)
City of Mission Viejo	Residential, Recreation/Open Space, Community Facility (City of Mission Viejo 2013)

Jurisdiction	Planned Land Uses
Unincorporated Orange County	Public Facilities, Open Space (Orange County 2014)

4.10.2.2 Calabasas Feeder

The Calabasas Feeder, which is approximately 9.3 miles in length, is located in Los Angeles County and travels primarily within the city limits of Los Angeles, with a short portion of the pipeline within the city limits of Hidden Hills and Calabasas. The Calabasas Feeder originates from West Valley Feeder No. 2 in the city of Los Angeles and follows Owensmouth Avenue south through densely populated residential and commercial land uses. At Chase Street, the Calabasas Feeder heads west and south, continuing through residential land uses. The Calabasas Feeder then turns southwest and parallels U.S. Highway 101 (US-101) through primarily commercial land uses prior to terminating at the Las Virgenes Municipal Water District Service Connection in Calabasas.

Planned land uses through which the Calabasas Feeder travels are identified in Table 4.10-2.

Table 4.10-2. Planned Land Uses Associated with the Calabasas Feeder

Jurisdiction	Planned Land Uses
City of Los Angeles	Regional Commercial, Residential (City of Los Angeles 2001)
City of Hidden Hills	Commercial (City of Hidden Hills 1995)
City of Calabasas	Public Facilities (City of Calabasas 2015)

4.10.2.3 Rialto Pipeline

The Rialto Pipeline, which is approximately 30 miles in length, is located in San Bernardino and Los Angeles counties and travels within the city limits of San Bernardino, Rialto, Fontana, Rancho Cucamonga, Upland, Claremont, La Verne, and San Dimas, as well as small portions of unincorporated areas in the two counties. The Rialto Pipeline originates at the California Department of Water Resources' Devil Canyon Facility in the city of San Bernardino and exits the facility to the southwest along Pine Avenue through residential land uses. After crossing Interstate 215 (I-215), the Rialto Pipeline continues southwest through vacant land and industrial land uses until entering the northern portions of Rialto and Fontana, where the pipeline traverses a mixture of residential, commercial, and open space land uses. In Rancho Cucamonga, Upland, and Claremont, the Rialto Pipeline travels generally along Interstate 210 (I-210) through primarily residential and open space land uses. After traveling to the south of Live Oak Reservoir, the Rialto Pipeline continues through La Verne, traveling through residential land uses, open space land uses, and golf courses. The Rialto Pipeline continues into San Dimas, where it parallels North San Dimas Canyon Road through open space and residential land uses prior to terminating at the San Dimas Power Plant Control Structure.

Planned land uses through which the Rialto Pipeline travels are identified in Table 4.10-3.

Table 4.10-3. Planned Land Uses Associated with the Rialto Pipeline

Jurisdiction	Planned Land Uses
City of San Bernardino	Industrial, Residential, Public Facility (City of San Bernardino 2005)
City of Rialto	Residential, Business Park, Light Industrial, Open Space (City of Rialto 2010)
City of Fontana	Public Utility Corridors, Public Facilities, Residential (City of Fontana 2003)
City of Rancho Cucamonga	Residential, Flood Control/Utility Corridor, Conservation, Open Space (City of Rancho Cucamonga 2010)
City of Upland	Open Space, Residential, Civic/School, Public Utilities (City of Upland 2015)
City of Claremont	Open Space, Residential, Transportation and Utilities (City of Claremont 2009)
City of La Verne	Open Space, Residential, Transportation and Utilities (City of La Verne 1999)
City of San Dimas	Open Space, Residential (City of San Dimas 2003)
Unincorporated San Bernardino County	Open Space (San Bernardino County 2014)
Unincorporated Los Angeles County	Open Space (Los Angeles County 2015)

4.10.2.4 Second Lower Feeder

The Second Lower Feeder, which is approximately 39 miles in length, is located in Orange County and Los Angeles County and travels within the city limits of Yorba Linda, Placentia, Anaheim, Buena Park, Cypress, Los Alamitos, Long Beach, Carson, Los Angeles, Torrance, Lomita, and Rolling Hills Estates, plus unincorporated areas of the two counties. The Second Lower Feeder originates at the Diemer Water Treatment Plant in Yorba Linda and exits the facility to the west across vacant land, before turning south and crossing the Black Gold Golf Course. It continues southwest through Yorba Linda, traversing residential and commercial land uses along several roadways. Upon entering Placentia, the Second Lower Feeder parallels Angelina Drive through residential, open space, and commercial land uses. The pipeline continues southwest through Anaheim, traversing more residential, open space, and commercial land uses, prior to heading west along Ball Road through Buena Park and Cypress. In Los Alamitos, the Second Lower Feeder crosses west through El Dorado East Regional Park and continues west into Long Beach (and slightly into Lakewood) through residential land uses prior to paralleling the northern edge of the Skylinks at Long Beach Golf Course and the Long Beach Airport. The pipeline continues west along roadways in residential land uses prior to crossing the Los Angeles River and Interstate 710 (I-710) just north of Interstate 405 (I-405). The Second Lower Feeder enters Carson along Carson Street and continues west, traveling through business, residential, and commercial land uses. In west Carson, it travels south along Western Avenue through residential and commercial land uses, and continues through a small portion of unincorporated Los Angeles County and the city of Los Angeles. Prior to terminating at the Palos Verdes Reservoir, the Second Lower Feeder travels southwest, barely touching into Torrance and Lomita, and through Rolling Hills Country Club along Palos Verdes Drive.

Planned land uses through which the Second Lower Feeder travels are identified in Table 4.10-4.

Table 4.10-4. Planned Land Uses Associated with the Second Lower Feeder

Jurisdiction	Planned Land Use
City of Yorba Linda	Residential, Commercial, Open Space (City of Yorba Linda 1993)
City of Placentia	Residential, Commercial (City of Placentia 1989)
City of Anaheim	Parks, Open Space, Water, Residential, Mixed-Use (City of Anaheim 2004)
City of Buena Park	Open Space, Residential (City of Buena Park 2010)
City of Cypress	Commercial, Residential, Education Facilities, Public Parks (City of Cypress 2001)
City of Los Alamitos	Residential, Retail Business (City of Los Alamitos 2015)
City of Long Beach	Open Space/Parks, Residential, Harbor/Airport, Mixed Uses (City of Long Beach 1997)
City of Carson	Light Industrial, Residential, Public Facilities, Commercial (City of Carson 1982)
City of Los Angeles	Residential, Commercial (City of Los Angeles 2001)
City of Rolling Hills Estates	Residential, Commercial Recreation (City of Rolling Hills Estates 1992)

4.10.2.5 Sepulveda Feeder

The Sepulveda Feeder, which is approximately 42 miles in length, is located in Los Angeles County and travels within the city limits of Los Angeles, Culver City, Inglewood, Hawthorne, Gardena, and Torrance, plus a small unincorporated area of Los Angeles County. The Sepulveda Feeder originates at the Jensen Water Treatment Plant in the city of Los Angeles and exits the facility to the south through residential land uses and the eastern portion of the Knollwood Golf Course. The Sepulveda Feeder continues south along Hayvenhurst Avenue, traversing residential and commercial land uses, vacant land and agricultural fields, and the Van Nuys Airport. Just north of the Van Nuys Golf Course, the Sepulveda Feeder turns east through residential land uses and crosses I-405, prior to paralleling the freeway south into commercial and residential land uses of the Sherman Oaks and Encino neighborhoods of Los Angeles. The Sepulveda Feeder continues to generally parallel I-405 toward the southeast into Culver City and Inglewood, where it traverses commercial and residential land uses. Near the Ladera Heights neighborhood, the Sepulveda Feeder travels east through primarily residential land uses before turning south and paralleling Van Ness Avenue through commercial, residential, and industrial land uses of Hawthorne, Gardena, and Torrance. The Sepulveda Feeder terminates at the Second Lower Feeder Interconnection in Torrance.

Planned land uses through which the Sepulveda Feeder travels are identified in Table 4.10-5.

Table 4.10-5. Planned Land Uses Associated with the Sepulveda Feeder

City	Planned Land Use
City of Los Angeles	Residential, Open Space, Public Facilities, Industrial (City of Los Angeles 2001)
City of Culver City	Residential, Commercial, Open Space, Freeway (City of Culver City 1995)
City of Inglewood	Residential (City of Inglewood 2009)
City of Hawthorne	Residential, Commercial, Industrial (City of Hawthorne 2016)
City of Gardena	Residential, Commercial (City of Gardena 2013)

City	Planned Land Use
City of Torrance	Residential, Public/Open Space, Business Park, Industrial (City of Torrance 2010)

4.10.3 Regulatory Framework

Land use plans and policy documents set forth regulations pertaining to allowed development. For a description of applicable plans, laws, and regulations associated with specific resources, such as air quality, historical structures or cultural resources, marine environment, noise, recreation, and traffic and transportation, refer to each specific resource section in this document. For example, all applicable South Coast Air Quality Management District plans and regulations related to air quality are specifically discussed and addressed in Section 4.3, *Air Quality*. Proposed ~~program~~ ~~Project and proposed Program~~-related land use plans, policies, and regulations are discussed in this section.

4.10.3.1 Federal

Federal land use planning regulations are not applicable to the proposed program elements because land use and planning decisions are made at the local level. None of the pipelines pass through federal lands.

4.10.3.2 State

Regulation of Local Agencies by Counties and Cities (California Government Code Section 53091)

California Government Code Section 53091 limits the powers of local jurisdictions over other agencies. Specifically, it states that building ordinances and 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 by a local agency.

4.10.3.3 Local

Table 4.10-6 lists the applicable land use elements of the general plans for the proposed program.

Table 4.10-6. Applicable Land Use Plans for Proposed Program

Jurisdiction	Applicable General Plan
Allen-McColloch Pipeline	
City of Yorba Linda	City of Yorba Lind General Plan (1993)
City of Anaheim	City of Anaheim General Plan (2004)
City of Orange	Orange General Plan (2010)
City of Tustin	Tustin General Plan (2013)
City of Irvine	City of Irvine General Plan (2012)
City of Lake Forest	Lake Forest General Plan (1994)
City of Mission Viejo	Mission Viejo General Plan (2013)

Jurisdiction	Applicable General Plan
County of Orange	County of Orange General Plan (2014)
Calabasas Feeder	
City of Los Angeles	The City of Los Angeles General Plan (2001)
City of Hidden Hills	City of Hidden Hills General Plan (1995)
City of Calabasas	City of Calabasas 2030 General Plan (2015)
Rialto Pipeline	
City of San Bernardino	City of San Bernardino General Plan (2005)
City of Rialto	Rialto General Plan (2010)
City of Fontana	City of Fontana General Plan (2003)
City of Rancho Cucamonga	Rancho Cucamonga General Plan (2010)
City of Upland	City of Upland General Plan (2015)
City of Claremont	City of Claremont General Plan (2009)
City of La Verne	The City of La Verne General Plan (1999)
City of San Dimas	City of San Dimas General Plan (2003)
San Bernardino County	County of San Bernardino 2007 General Plan (revised 2014)
Los Angeles County	Los Angeles County 2035 General Plan (2015)
Second Lower Feeder	
City of Yorba Linda	City of Yorba Lind General Plan (1993)
City of Placentia	City of Placentia General Plan (1989)
City of Anaheim	City of Anaheim General Plan (2004)
City of Buena Park	Buena Park 2035 General Plan (2010)
City of Cypress	Cypress General Plan (2001)
City of Los Alamitos	Los Alamitos General Plan (2015)
City of Long Beach	City of Long Beach General Plan (1997)
City of Lakewood	The City of Lakewood Comprehensive General Plan (1996)
City of Carson	Carson General Plan (1982)
City of Los Angeles	The City of Los Angeles General Plan (2001)
City of Torrance	City of Torrance General Plan (2010)
City of Lomita	City of Lomita General Plan (1998)
City of Rolling Hills Estates	City of Rolling Hills Estates General Plan (1992)
Orange County	County of Orange General Plan (2014)
Los Angeles County	Los Angeles County 2035 General Plan (2015)
Sepulveda Feeder	
City of Los Angeles	The City of Los Angeles General Plan (2001)
City of Culver City	Culver City General Plan (1995)
City of Inglewood	City of Inglewood General Plan (2009)
City of Hawthorne	City of Hawthorne General Plan (2016)
City of Gardena	Gardena General Plan (2013)
City of Torrance	City of Torrance General Plan (2010)
Los Angeles County	Los Angeles County 2035 General Plan (2015)

4.10.4 Thresholds and Methodology

4.10.4.1 Thresholds of Significance

Table 4.10-7 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to land use. It indicates which impacts must be analyzed in the PEIR for the proposed program.

Table 4.10-7. CEQA Thresholds for Land Use

Threshold
<i>Would the proposed program:</i>
a. Physically divide an established community?
b. Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?*
*See impacts discussion in Section 4.4, <i>Biological Resources</i> .

4.10.4.2 Methodology

Division of a Community

The majority of the proposed program elements would be within existing public rights-of-way. During construction, the rehabilitation projects could temporarily create a division within a community if access within the community, especially between residences and community facilities (e.g., parks, schools), were impeded. This potential impact is evaluated in this section under Threshold LU-A.

Conflicts with Plans, Policies, or Regulations

This analysis evaluates the consistency or compliance of the proposed project with relevant land use plans, policies, and regulations. Because the proposed program would not change land uses, the program's consistency with land use plans would be the same as the existing condition. Therefore, under CEQA, the proposed program would not result in impacts related to conflicts with land use plans, policies, and regulations.

Existing plans, policies, and regulations governing specific resources such as aesthetics, agriculture, air quality, etc. are addressed in the relevant resource sections of this PEIR (Sections 4.1 through 4.9 and 4.11 through 4.14).

4.10.5 Impacts Analysis

4.10.5.1 Program Analysis

Threshold LU-A: Physically Divide an Established Community

Rehabilitation work would involve excavation sites, work zones, and staging land uses. Barriers would be used to confine construction for safety purposes. The proposed program consists of improvements to an existing subsurface water distribution pipeline and would not involve the construction or operation of any permanent structures or alterations that would physically divide an established community.

In some cases, construction work areas, primarily for the excavation sites, may require access to certain facilities to be blocked or rerouted during construction. This could temporarily create barriers that would physically divide communities from the most direct access to community facilities. Because these changes would not be permanent and would only affect a given area for a duration between 6 and 9 months, and because the contractors would be required to maintain access to facilities in some manner, these impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold LU-B: Conflict with Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

Because the proposed program would not change land uses, the program's consistency with land use plans would be the same as the existing condition. Therefore, under CEQA, the proposed program would not result in impacts related to conflicts with land use plans, policies, and regulations.

Existing plans, policies, and regulations governing specific resources such as aesthetics, agriculture, air quality, etc. are addressed in the relevant resource sections of this PEIR (Sections 4.1 through 4.9 and 4.11 through 4.14).

Mitigation Measures

There would be no impacts for the proposed program and therefore no mitigation is necessary.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

4.10.5.2 Cumulative Analysis

Program Analysis

The proposed program would be implemented over a long period of time; in many cases implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

The only land use impact identified for the proposed program was the potential for construction to create temporary barriers within an established community. These impacts would be temporary and less than significant. Because they would be very localized, they would not combine with other neighborhood division impacts to result in a considerable contribution to a cumulative impact.

Section 4.11 Noise

4.11.1 Introduction

This section describes the existing conditions related to noise, the regulatory framework associated with noise, the impacts caused by noise that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant noise impacts.

4.11.2 Existing Conditions

The study area for noise is the pipeline easements or rights-of-way, and the immediately adjacent properties.

Because specific rehabilitation sites have not been identified for the proposed program's approximate 100 miles of pipelines, ambient noise levels are not provided in this analysis. The existing conditions discussion identifies potential sensitive noise receptors ~~receivers~~. Sensitive receptors ~~receivers~~ include the following.

- residential dwellings
- schools and daycare centers
- churches and other religious facilities
- hospitals
- parks, playgrounds, picnic areas, recreation areas, and some trails
- amphitheaters and auditoriums
- campgrounds
- cemeteries
- hospitals
- libraries
- some public meeting rooms, and public and nonprofit institutional structures
- radio, television, and recording studios
- some historic properties
- other uses that may be sensitive to increased noise levels

Vibration-sensitive land uses include buildings where low ambient vibration is essential for operations within the building, such as concert halls, some forms of manufacturers, hospitals with vibration-sensitive equipment, and university research centers. Residential land uses or other places where people sleep, such as hotels and hospitals, can also be sensitive to vibration levels. Finally, historic buildings and structures may be sensitive to high vibration levels.

Not all of these uses are identifiable at the program level, so this analysis focuses on ones that can be identified (using Google Earth mapping and other sources), and how additional sensitive receptors ~~receivers~~ will be identified prior to construction of any program element.

4.11.2.1 Allen-McColloch Pipeline

Table 4.11-1 lists known noise- and vibration-sensitive land uses in the Allen-McColloch Pipeline study area.

Table 4.11-1. Known Noise- and Vibration-Sensitive Land Uses in Allen-McColloch Pipeline Study Area

Jurisdiction	Land Use
City of Yorba Linda	<ul style="list-style-type: none"> • Residential land uses • Black Gold Golf Course • Yorba Linda High School • Fairmont Knolls Park • Fairmont Elementary School • Bernardo Yorba Middle School • Bike/horse trail adjacent to Fairmont Boulevard • Ivy Crest Montessori School • Canyon Hills Friends Church
City of Anaheim	<ul style="list-style-type: none"> • Residential land uses • Santa Ana River Trail • Canyon High School • Imperial Elementary School
City of Orange	<ul style="list-style-type: none"> • Residential land uses • Salem Lutheran Church and Salem Lutheran School • Riding Academy of Orange County • Cemetery of the Holy Sepulcher • Santiago Canyon College • Peters Canyon Regional Park • Peters Canyon Regional Trail and Bikeway • East Ridge View Trail • Mountains to the Sea Trail
Unincorporated Orange County	<ul style="list-style-type: none"> • Residential land uses
City of Tustin	<ul style="list-style-type: none"> • Residential land uses • Pioneer Road Park
City of Irvine	<ul style="list-style-type: none"> • Residential land uses
City of Lake Forest	<ul style="list-style-type: none"> • Residential land uses • Santiago de Compostela Catholic Church • El Toro Memorial Park • Trabuco Side Path (trail) • Aliso Creek Bikeway • Grace Community Church/Grace Christian Schools
City of Mission Viejo	<ul style="list-style-type: none"> • Residential land uses

4.11.2.2 Calabasas Feeder

Table 4.11-2 lists known noise- and vibration-sensitive land uses in the Calabasas Feeder study area.

Table 4.11-2. Known Noise- and Vibration-Sensitive Land Uses in Calabasas Feeder Study Area

Jurisdiction	Land Use
City of Los Angeles	<ul style="list-style-type: none"> • Residential land uses • Living Praise Christian Center • Nevada Avenue Elementary School • Capistrano Avenue Elementary School • West Hills Church • New Life Church • Beth Ariel Messianic Congregation • Adventure Planet Montessori Learning Center • Beit Hamidrash of Woodland Hills (religious facility) • First Baptist Church • Beit Avraham – Sephardic Community Synagogue
City of Hidden Hills	<ul style="list-style-type: none"> • Residential land uses
City of Calabasas	<ul style="list-style-type: none"> • Leonis Adobe Museum

4.11.2.3 Rialto Pipeline

Table 4.11-3 lists known noise- and vibration-sensitive land uses in the Rialto Pipeline study area.

Table 4.11-3. Known Noise- and Vibration-Sensitive Land Uses in Rialto Pipeline Study Area

Jurisdiction	Land Use
City of San Bernardino	<ul style="list-style-type: none"> • Residential land uses • Trail (adjacent to Pine Avenue North)
City of Rialto	<ul style="list-style-type: none"> • Residential land uses • Kingdom Hall of Jehovah's Witnesses • Fergusson Park
City of Fontana	<ul style="list-style-type: none"> • Residential land uses • Hunter's Ridge Park
City of Rancho Cucamonga	<ul style="list-style-type: none"> • Residential land uses • Trail (adjacent of Crescenta Way) • Trail (adjacent to 24th Street/Wilson Avenue) • Ashley Park • John L. Golden Elementary School • Day Creek Park • Los Osos High School • Trail (adjacent to Banyan Street) • Banyan Elementary School • Chaffey College • Shepherd of the Hills Lutheran Church • Beryl Park • Church of Jesus Christ of Latter-day Saints

Jurisdiction	Land Use
City of Upland	<ul style="list-style-type: none"> • Residential land uses • Trail (center median of Euclid Avenue) • Pioneer Junior High School • Chaffey Communities Cultural Center/Pioneer Park • Pepper Tree Elementary School
City of Claremont	<ul style="list-style-type: none"> • Residential land uses • Thompson Creek Trail • La Puerta Sports Park • The Webb Schools
City of La Verne	<ul style="list-style-type: none"> • Residential land uses • Live Oak Park • Sierra La Verne County Club (golf)
City of San Dimas	<ul style="list-style-type: none"> • Residential land uses • San Dimas Canyon Golf Course • San Dimas Canyon Park

4.11.2.4 Second Lower Feeder

Table 4.11-4 lists known noise- and vibration-sensitive land uses in the Second Lower Feeder study area.

Table 4.11-4. Known Noise- and Vibration-Sensitive Land Uses in Second Lower Feeder Study Area

Jurisdiction	Land Use
City of Yorba Linda	<ul style="list-style-type: none"> • Residential land uses • Black Gold Golf Course • Heritage Oak Private Education • Emanuel Danish Lutheran Church and Cultural Center • Friends Christian Middle School
City of Placentia	<ul style="list-style-type: none"> • Residential land uses • Brookhaven Elementary School • El Dorado High School • Blessed Sacrament Episcopal Church • Kraemer Middle School
City of Anaheim	<ul style="list-style-type: none"> • Residential land uses • Miraloma Park/Family Resource Center • Kingdom Hall of Jehovah's Witnesses • Pioneer Park • Church of Dream Builders • Iglesia Sunkist (religious facility) • South Junior High School • Mission Community Church • Boysen Park • Theodore Roosevelt Elementary School • Olive Street Elementary School • Walnut Grove Park

Jurisdiction	Land Use
	<ul style="list-style-type: none"> • Caodai Center (religious facility) • Multiple hotels/motels along Disneyland Drive and Ball Road • Prince of Peace Lutheran Church and School • Gilbert High School • Grace Missionary Baptist Church • Saint Justin Martyr Catholic Church and School • West Anaheim United Methodist Church • Magnolia High School • Korea Buddhist Temple Jung Hye Sa • Anaheim Baptist Fellowship
City of Buena Park	<ul style="list-style-type: none"> • Residential land uses • Dickerson Elementary School
City of Cypress	<ul style="list-style-type: none"> • Residential land uses • Cypress Church • Islamic Center of Cypress • Juliet Morris Elementary School • Darrell Essex Park • Veterans Park • Cypress Nature Park
City of Los Alamitos	<ul style="list-style-type: none"> • Residential land uses
City of Long Beach	<ul style="list-style-type: none"> • Residential land uses • Coyote Creek Bikeway • Newcomb Academy • El Dorado Regional Park • San Gabriel River Trail • Henry Elementary School • Rosie the Riveter Park and Interpretive Center • Skylinks at Long Beach Golf Course • California Heights United Methodist Church • Charles Evans Hughes Middle School • Longfellow Elementary School • Los Cerritos Park • Los Cerritos Elementary School • The Fitting Studio (golf range) • Rancho Dominguez Preparatory School
City of Lakewood	<ul style="list-style-type: none"> • Residential land uses
City of Carson	<ul style="list-style-type: none"> • Residential land uses • Our Lady of Guadalupe Old Catholic Church • Central Baptist Church • Bethel Baptist Church and Christian School • Econo Lodge Carson • United Samoan Congregational Church • John D. Calas, Sr. Community Park • Bonita Elementary School • Carson Community Deliverance (religious facility) • Immanuel Missionary Baptist Church

Jurisdiction	Land Use
	<ul style="list-style-type: none"> • First Christian Church of Carson • White Middle School • United Baptist Church • Christian Enrichment Center
City of Torrance	<ul style="list-style-type: none"> • Residential land uses
City of Los Angeles	<ul style="list-style-type: none"> • Residential land uses • Narbonne High School • George S. Patton Continuation School • The Pines Christian School • Canaan New Life Christian Church
City of Lomita	<ul style="list-style-type: none"> • Residential land uses • The Harbor Church and Harbor Church Schools
City of Rolling Hills Estates	<ul style="list-style-type: none"> • Residential land uses • Bridlewood Trail • Rolling Hills Country Club (golf) • Bridle Trail • Dapplegray Park • Rolling Hills Estates Community Center • George F. Canyon Preserve and Nature Center • Native Plant Demonstration Garden • Miller's Trail • Carriage Trail • Stein Hale Nature Trail (Georgette Trail)

4.11.2.5 Sepulveda Feeder

Table 4.11-5 lists known noise- and vibration-sensitive land uses in the Sepulveda Feeder study area.

Table 4.11-5. Known Noise- and Vibration-Sensitive Land Uses in Sepulveda Feeder Study Area

Jurisdiction	Land Use
City of Los Angeles	<ul style="list-style-type: none"> • Residential land uses • Granada Hills Youth Recreation Center • Knollwood Golf Course • Saint Andrew and Saint Charles Church • Rinaldi Convalescent Hospital • Concordia Granada Hills (school) • First Baptist Church of Granada Hills • Tulsa Street Elementary School • Saint John Baptist de la Salle School • Holy Martyrs Armenian School • Church of Scientology of the Valley • Van Nuys Golf Course • Hampton Inn & Suites Los Angeles/Sherman Oaks • Best Western Plus Carriage Inn

Jurisdiction	Land Use
	<ul style="list-style-type: none"> • Kingdom Hall of Jehovah's Witnesses • Starlight Cottage (hotel) • Saint Mary Romanian Greek Catholic Church • Sherman Oaks Castle Park • Berkley Hall School • Milken Community Middle School • Skirball Cultural Center • Los Angeles County Open Space • Mountain Gate Country Club (golf) • Getty View Park • Getty Center South Building • Hotel Angeleno • Luxe Sunset Boulevard (hotel) • Village Church Westwood Lutheran • Ahavat Torah Synagogue Los Angeles • Los Angeles National Cemetery • Westwood Recreation Center • Best Western Royal Palace Inn & Suites • Charnock Road Elementary School • Multiple hotels/motels on Sepulveda Boulevard between Venice Boulevard and Washington Place • Saint Eugene's Catholic Church and School
City of Culver City	<ul style="list-style-type: none"> • Residential land uses • Culver Palms United Methodist Church
City of Inglewood	<ul style="list-style-type: none"> • Residential land uses • Frank D. Parent Elementary School • Inglewood Park Cemetery • Warren Lane Elementary School • Circle Park • Century Academy for Excellence • Brethren Elementary and Junior High School • El Nido Family Center (school)
City of Hawthorne	<ul style="list-style-type: none"> • Residential land uses • Hollypark Little League • Chester Washington Golf Course
City of Gardena	<ul style="list-style-type: none"> • Residential land uses • Hollypark United Methodist Church • Rowley Park • Maria Regina Catholic Church and School • Junipero Serra High School
City of Torrance	<ul style="list-style-type: none"> • Residential land uses • Lincoln Elementary School • Arlington Elementary School

4.11.3 Regulatory Framework

This section describes the plans, policies, and regulations related to noise that are applicable to the proposed program.

4.11.3.1 Federal

There are no federal regulations related to noise applicable to the program.

4.11.3.2 State

California Noise Control Act (Cal. Health and Safety Code, § 46010 et seq.)

The California Noise Control Act of 1973 gave cities and communities the power to set noise ordinances and enforce them as necessary. The goal of the state and local governments is to prohibit unnecessary, annoying, intrusive, or dangerous noise.

4.11.3.3 Local

Table 4.11-6 lists the applicable regulations related to noise for each jurisdiction for the proposed program. The table includes information found in local jurisdiction general plans, noise ordinances, and CEQA noise guidelines (if the agencies have adopted them).¹ Note that information contained in a general plan regarding noise typically relates to the operation of projects and the ambient noise levels assigned to land use development matrices. The noise ordinance and local CEQA noise guidelines (if adopted) typically regulate noise generated during construction activities. It should be noted that California Government Code Section 53091 exempts Metropolitan, as a regional public water purveyor and utility, from local zoning and building ordinances (but not from noise ordinances that are outside of the zoning and building ordinances). Despite this exemption from local planning ordinances, for purposes of full disclosure of potential impacts on the environment, this assessment of potential noise impacts evaluates proposed program compatibility with noise-related general plan policies and noise ordinances of the cities along the pipeline alignments.

¹ Public agencies are required to adopt implementing procedures for administering their responsibilities under CEQA, including CEQA guidelines (14 CCR Section 15022). In most cases, public agencies adopt the State CEQA Guidelines as their procedures, but in some cases agencies will tailor the guidelines to meet their unique conditions and produce local CEQA guidelines.

Table 4.11-6. Applicable Noise Regulations for the Proposed Program

General Plan Noise Element	Noise Ordinance	Has agency adopted local CEQA Guidelines for noise?
Allen-McColloch Pipeline		
City of Yorba Linda		
No (nothing applicable to construction)	Section 8.32.060 (D): Construction is an exemption as long as it doesn't occur during the hours of 8 p.m. and 7 a.m. on weekdays/Saturday, Sunday or federal holidays. (City of Yorba Linda 2015)	No
City of Anaheim		
<ul style="list-style-type: none"> Table N-3 (page N-9) identifies the adopted State of California Noise Standards. Construction sound exempt from Municipal Code during 7 a.m.–7 p.m. (City of Anaheim 2004) 	No (nothing applicable to construction)	No
City of Orange		
Interior/exterior noise standards Table N-3 and N-4. (City of Orange 2010)	Section 8.24.070 E: Construction noise exempt as long as it does not take place between 8 p.m. and 7 a.m. on weekdays, including Saturday or any time on Sunday or a federal holiday. (City of Orange 2014)	No
City of Tustin		
No (nothing applicable to construction)	Chapter 6 Section 4616 (2): Construction activity prohibited between 6 p.m. and 7 a.m. M–F and 5 p.m. and 9 a.m. on Saturday, all hours Sunday, and city-observed federal holidays. Can be permitted outside of these hours with temporary exception by the Department of Public Works. (City of Tustin 2015)	No
City of Irvine		
Requires new construction to meet City Noise Ordinance. (City of Irvine 2012a)	<ul style="list-style-type: none"> Chapter 2 Noise ordinance includes Noise Standards dBA. Sec. 6-8-205: Special Provisions (including construction), as long as occurs between 7 a.m. and 7 p.m. Monday through Friday and 9 a.m. and 6 p.m. on Saturdays. No construction on Sundays and federal holidays. Temporary waiver could be granted by the Chief Building Official. (City of Irvine 2014) 	<ul style="list-style-type: none"> Outlines considerations for noise impacts and gives direction on what is needed for existing conditions; project impacts; applicable plans, policies and programs; determining impact significance; formulating

		<p>mitigation; and determining significance after mitigation.</p> <ul style="list-style-type: none"> Notes the City adopted Appendix G of the CEQA guidelines as the significance threshold for noise. (City of Irvine 2012b)
City of Lake Forest		
<ul style="list-style-type: none"> Noise sources not related to transportation, including construction, and may be controlled to minimize exposure to excessive noise levels. Work schedule limits. (City of Lake Forest 1994) 	Noise Control Section 11.16.060 Exemptions, (D). “Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a Federal holiday.” (City of Lake Forest 2014)	No (nothing applicable to construction)
City of Mission Viejo		
Table N-4 establishes construction noise levels at 50 feet. (City of Mission Viejo 2009)	Section 9: Special Provisions (Section 9.22.035)—noise sources from construction are short-term impacts (ambient noise), are exempt as long as they don’t take place between 8 p.m. and 7 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday. (City of Mission Viejo 2014)	No
Calabasas Feeder		
City of Los Angeles		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Sec. 41.41: (a) construction, including staging and delivery, not allowed between 9 p.m. and 7 a.m. Can be outside of these hours with written permission from the Board of Police. (City of Los Angeles 2015) 	<ul style="list-style-type: none"> Section I, Noise Adopted the Appendix G CEQA checklist for construction noise and operational noise. Includes screening criteria; determination of significance threshold and methodology; data, resources and references; categories of construction equipment; and legislation for construction. Includes screening criteria; determination of significance threshold and methodology;

		data, resources and references; stationary and mobile sources; and legislation for operation. (City of Los Angeles 2006)
City of Hidden Hills		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Section 3-8-5: Construction noise prohibited after 8 p.m. or before 7 a.m. on weekdays/after 8 p.m. or before 8 a.m. Saturdays/any time on Sunday or holidays. Exemption to Section 3-8-6 with written permission of the Building Official. (City of Hidden Hills 1994) 	No
City of Calabasas		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Noise code 17.20.160 Section C(4). Construction is exempt as long as don't take place before 7 a.m. and after 6 p.m. on weekdays/Saturday not allowed before 8 a.m. or after 5 p.m. No construction on Sundays or federal holidays. May be modified with a Conditional Use Permit. (City of Calabasas 2015) 	No
Rialto Pipeline		
City of San Bernardino		
No (nothing applicable to construction)	Chapter 8.54 Noise Control Section 8.54.070: Construction activities limited to within 7 a.m.–8 p.m. (City of San Bernardino 2009)	No
San Bernardino County		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Chapter 83.01 General Performance Standards Section 83.01.080 Noise (County Development Code) Exemption from standards include: construction between 7 a.m. and 7 p.m. Monday through Saturday, excluding federal holidays. (San Bernardino County 2007) 	No
City of Rialto		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Chapter 9.50-Noise Control Chapter 9.50.070 Disturbances from Construction Activity. (B) identifies the permitted construction hours by month/day. October 1–April 30: M–F 7 a.m.–5:30 p.m./Saturday 8 a.m.–5 p.m. Sunday and state holiday not permissible. May 1–September 30: M–F 6 a.m.–7 p.m./Saturday 8 a.m.–5 p.m. Sunday and state holidays not permissible. (City of Rialto 2008) 	No

City of Fontana		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Article II. Noise. Section 18-63. Scope, enumeration of prohibited noises. (b)(7): construction between 7 a.m. and 6 p.m. on weekdays and between 8 a.m. and 5 p.m. on Saturdays. Outside of this, permit from building inspector may be granted for up to 3 days. (City of Fontana 2007) 	No
City of Rancho Cucamonga		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Noise standards Section 17.66.050. D-4: a- when adjacent to residential land use, school, church or similar, cannot take place between 8 p.m. and 7 a.m. on weekdays, including Saturday/any time on Sunday or national holiday. Cannot exceed 65 dBA when measured at the adjacent property. D-4: b- when adjacent to a commercial or industrial use, cannot take place between 10 p.m. and 6 a.m. on weekdays, including Saturday and Sunday, and cannot exceed 70 dBA when measured at the adjacent property. (City of Rancho Cucamonga 2012) 	No
City of Upland		
Noise Element states preparation of a noise ordinance that will utilize the Model Noise Ordinance of CA and EPA. (City of Upland 2015)	No (nothing applicable to construction except buildings)	No
City of Claremont		
Construction identified as a non-transportation noise source in the element. Notes that the City regulates construction activity for prevention on nights/weekends (Policy 6-12.3). (City of Claremont 2009)	<ul style="list-style-type: none"> Noise and Vibration standards 16.154.020 (under Environmental Protective Standards) F. Exemptions (4a): noise/vibration associated with construction within 7 a.m.–7 p.m. weekdays and Saturdays; no national holidays, providing it doesn't exceed levels set in Section 16.154.020D. (City of Claremont 2005) 	No
City of La Verne		
Goal 1g: require stringent mitigation measures to limit construction noise for new projects. (City of La Verne 1999)	<ul style="list-style-type: none"> Chapter 8 Health and Safety D.1. Construction activities between 8 p.m. and 7 a.m. weekdays, any time on Sundays, or legal holidays not allowed. Identifies "Noisy Construction Activity" as construction noise that disturbs residences. 	No

	<ul style="list-style-type: none"> States noise sensitive areas are designated by the City Code Enforcement Officer or City Planning Technician. (City of La Verne 2015) 	
City of San Dimas		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Chapter 8-Noise Ordinance Section 8.36.100 A: construction within or within 500 feet of residential zone prohibited between 8 p.m.– 7 a.m. Monday–Saturday, any time on Sunday, or any public holiday. (B) Can obtain a permit from the building and safety division of the community development department to perform construction activities outside of these hours. (City of San Dimas 1987) 	No
Second Lower Feeder		
Orange County		
No (nothing applicable to construction)	Noise Ordinance, Article 4: Section 4-6-7. Special Provisions (e) Construction cannot take place between 8 p.m. and 7 a.m. on weekdays, including Saturday or any time on Sunday or a federal holiday. (Orange County 1975)	No
City of Yorba Linda		
No (nothing applicable to construction)	Section 8.32.060 (D): Construction is an exemption as long as doesn't occur during the hours of 8 p.m. and 7 a.m. on weekdays/Saturday, Sunday or federal holiday. (City of Yorba Linda 2015)	No
City of Placentia		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Chapter 23.76 Noise Control. 23.76.070 Activities – Special Provisions (8): Construction noise sources prohibited between 7 p.m. and 7 a.m. Monday through Friday, 6 p.m.–9 a.m. Saturday and Sunday and holidays (23.81.170). Remodeling/repair and maintenance allowed between 10 a.m. and 5 p.m. on Sunday and Holidays. (City of Placentia 2015) 	No
City of Anaheim		
<ul style="list-style-type: none"> Table N-3 (page N-9) identifies the adopted State of California Noise Standards. Construction sound exempt from Municipal Code during 7 a.m.– 7 p.m. (City of Anaheim 2004) 	No (nothing applicable to construction)	No
City of Buena Park		

No (nothing applicable to construction)	Section 8.28.040: Noise from construction prohibited between 8 p.m. and 7 a.m., Monday through Saturday and anytime Sundays. The Noise Ordinance does not include specific noise level limits for construction activities. (City of Buena Park 2015)	No
City of Cypress		
No (nothing applicable to construction)	Sec. 13-70. Special Provisions (e): Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8 p.m.– 7 a.m. on weekdays, before 9 a.m. and after 8 p.m. on Saturday, or anytime on Sunday or a federal holiday. (City of Cypress 1976)	No
City of Los Alamitos		
No (nothing applicable to construction)	17.24.020 Exemptions (D) – Noise sources associated with construction does not take place between the hours of 8 p.m. and 7 a.m. on weekdays, including Saturday or anytime on Sunday or a federal holiday. (City of Los Alamitos 2006)	No
City of Long Beach		
No (nothing applicable to construction)	<ul style="list-style-type: none"> • Noise. 8.80.202 Construction Activity-Noise regulations for permitted construction. • Weekdays and federal holidays: not during 7 p.m. and 7 a.m. • Saturdays: not during 7 p.m. (Friday) and 7 a.m. (Saturday) and after 6 p.m. (Saturday). • Sundays: no construction, unless have a Sunday work permit form the Noise Control Officer. (City of Long Beach 1977) 	No
City of Los Angeles		
No (nothing applicable to construction)	<ul style="list-style-type: none"> • Sec. 41.41: (a) construction, including staging and delivering, not allowed between 9 p.m. and 7 a.m. • Can be outside of these hours with written permission from the Board of Police. (City of Los Angeles 2015) 	<ul style="list-style-type: none"> • Section I, Noise • Adopted the Appendix G CEQA checklist for construction noise and operational noise. • Includes screening criteria; determination of significance threshold and methodology; data, resources, and references; categories of construction equipment; and legislation for construction. • Includes screening criteria;

		determination of significance threshold and methodology; data, resources, and references; stationary and mobile sources; and legislation for operation. (City of Los Angeles 2006)
City of Lakewood		
No (nothing applicable to construction)	08.36.010: Noise Control (B)(8). Sounds originating from construction between the hours of 10 p.m. and 7 a.m. on weekdays and 10 p.m. and 9 a.m. on weekends are prohibited. (City of Lakewood 1999)	No
City of Carson		
No (nothing applicable to construction)	Chapter 5, 5502 A. sets noise and time limits for single-family and multi-family residential. No general construction exemptions. (City of Carson 2015)	No
Los Angeles County		
No (nothing applicable to construction)	Section 12.08.440 Construction Noise: Contains noise restrictions and schedule for affected structures, but generally operating construction equipment between 7 p.m. and 7 a.m./Sundays or holidays is prohibited. (Los Angeles County 1978)	No
City of Torrance		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Article 3- construction. 46.3.1: Construction between 7:30 a.m. to 6 p.m. Monday through Friday/9 a.m. to 5 p.m. on Saturdays. Prohibited on Sundays and Holidays observed by City Hall. Can request extended hours from the Community Development Director. (City of Torrance 2015) 	No
City of Lomita		
No (nothing applicable to construction)	<ul style="list-style-type: none"> Article 3, Section 4-4.11 states construction equipment can operate between 7 a.m. and 6 p.m. M-F, except holidays and 9 a.m.-5 p.m. Saturday and Sunday. Can't reach more than 35 dB for cumulative period of 15 minutes of an hour at any receiving property line. (City of Lomita 2000) 	No
Rolling Hills Estates		
No (nothing applicable to construction)	Chapter 8.32- Noise: 8.32.210 A. Permitted construction hours and days. Monday through Friday 7 a.m.-5 p.m./Saturday 9 a.m.-5 p.m. Not allowed any time on Sunday and holidays. (City of Rolling Hills Estates	No

	1997)	
Sepulveda Feeder		
City of Los Angeles		
No (nothing applicable to construction)	<ul style="list-style-type: none"> • Sec. 41.41: (a) construction, including staging and delivery, not allowed between 9 p.m. and 7 a.m. • Can be outside of these hours with written permission from the Board of Police. (Los Angeles County 1978) 	<ul style="list-style-type: none"> • Section I, Noise • Adopted the Appendix G CEQA checklist for construction noise and operational noise. • Includes screening criteria; determination of significance threshold and methodology; data, resources, and references; categories of construction equipment; and legislation for construction. • Includes screening criteria; determination of significance threshold and methodology; data, resources, and references; stationary and mobile sources; and legislation for operation. (City of Los Angeles 2006)
Culver City		
No (nothing applicable to construction)	<ul style="list-style-type: none"> • Chapter 9.07 – Noise Regulations. • Section 9.07.035: Constructed prohibited outside of 8 a.m. and 8 p.m. Monday through Friday; 9 a.m. and 7 p.m. Saturdays; 10 a.m. and 7 p.m. Sundays. (Culver City 2015) 	No
City of Inglewood		
No (nothing applicable to construction)	<ul style="list-style-type: none"> • Article 2, Noise Regulations. Section 5-41. Within residential zone, or 500 feet, can't perform construction activities between 8 p.m. and 7 a.m. (Ord. 88-29, 9-13-88). • Can obtain a permit for work outside these hours. (City of Inglewood 1985) 	No
City of Hawthorne		
No (nothing applicable to construction)	Nothing specific to noise in Municipal Code	No
City of Gardena		

No (nothing applicable to construction)	<ul style="list-style-type: none">• Chapter 8.36 Noise• Noise associated with construction prohibited between 6 p.m. and 7 a.m. on weekdays/6 p.m. and 9 a.m. on Saturdays/any time on Sunday or a federal holiday. (City of Gardena 2006)	No
City of Torrance		
No (nothing applicable to construction)	<ul style="list-style-type: none">• Article 3- construction. 46.3.1: Construction between 7:30 a.m. to 6 p.m. Monday through Friday/9 a.m. to 5 p.m. on Saturdays. Prohibited on Sundays and Holidays observed by City Hall.• Can request extended hours from the Community Development Director. (City of Torrance 2015)	No

4.11.4 Thresholds and Methodology

4.11.4.1 Thresholds of Significance

Table 4.11-7 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to noise. These thresholds are addressed in the PEIR.

Table 4.11-7. CEQA Thresholds for Noise

Threshold
<i>Would the proposed program:</i>
a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity, above levels existing without the project?
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project?
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?
f. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels?

4.11.4.2 Methodology

Noise Standards

As documented in Table 4.11-6, most jurisdictions through which the existing pipelines in the proposed program travel have construction noise standards, usually established in the local noise ordinance, but occasionally also in their general plans or CEQA guidelines. This analysis discusses the relationship between the types of noise levels likely to be produced during rehabilitation of the pipelines and these standards. As discussed in Section 3.7.1, where possible, construction activities would occur during daytime hours, Monday through Friday and potentially Saturday. However, in order to prevent significant water delivery interruptions, accommodate a request from an affected jurisdiction, or expedite rehabilitation, it is likely that construction activities could proceed outside of the hours allowed by local regulations (i.e., during nighttime or on Sundays).

Vibration

As discussed in Section 4.11.2, certain types of land uses are particularly sensitive to vibration related to construction. This analysis discusses the types of impacts that could occur from construction and whether it is likely to affect any of the known sensitive land uses. It also addresses the potential for unidentified vibration-sensitive land uses to occur in the vicinity of rehabilitation

projects, and provides mitigation to address these impacts or require further analysis once construction locations are known.

Permanent Increased Noise Levels

The proposed program would not result in any permanent increase in noise levels after rehabilitation is complete. This is documented in the analysis.

Temporary or Periodic Increased Noise Levels

The proposed program would result in increased noise levels in the vicinity of the rehabilitation sites. As discussed in Section 4.11.2, certain types of land uses are considered sensitive receptors ~~receivers~~ for noise. This analysis discusses the types of noise impacts that could occur from construction and the factors that would result in significant noise impacts on adjacent sensitive land uses. However, specific noise levels cannot be determined until the locations of rehabilitation projects have been identified. Therefore, any projects near sensitive receptors ~~receivers~~ would require further analysis once site-specific construction information is known. This program-level analysis identifies locations where further analysis would be required and provides mitigation strategies to address impacts.

Exposure to Existing Aircraft Noise

Areas of the study area within airport land use plans and in the vicinity of private airstrips are identified in Section 4.8, *Hazards and Hazardous Materials*. The potential for construction workers to be exposed to excessive noise levels in these areas are addressed in this analysis.

4.11.5 Impacts Analysis

4.11.5.1 Program Analysis

Threshold NOI-A: Expose Persons to or Generate Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies

As documented in Table 4.11-6, most jurisdictions through which the existing pipelines in the proposed program have construction noise standards, usually established in the local noise ordinance, but occasionally also in their general plans or CEQA guidelines. For this analysis, specific city or county regulations were examined. It is likely that work on some construction reaches would occur outside ~~it is assumed that construction would be limited to the hours allowed by local regulations. For any projects that would require construction outside of these hours, supplemental site-specific noise analysis and environmental documentation would be required prior to construction.~~

~~For jurisdictions where the noise policies, ordinances, and/or CEQA guidelines stipulate only hours and/or days when construction would be allowed, there would be no violation of local noise standards because the contractors would be required to conduct rehabilitation activities only within~~

~~the allowable hours. However, some noise policies, ordinances, and guidelines specify a maximum allowable noise level.~~

- ~~Allen-McColloch Pipeline: City of Irvine (noise ordinance), City of Mission Viejo (general plan)~~
- ~~Calabasas Feeder: none~~
- ~~Rialto Pipeline: City of Rancho Cucamonga (noise ordinance)~~
- ~~Second Lower Feeder: City of Carson (noise ordinance), City of Lomita (noise ordinance)~~
- ~~Sepulveda Feeder: none~~

As discussed for Threshold NOI-D, noise levels during rehabilitation, specifically during excavation and concrete sawing, would be likely to reach very high levels, generally exceeding any noise-level restrictions set by these local jurisdictions. Therefore, if construction were to occur in these jurisdictions, it is likely that noise levels would exceed local standards.

The ~~severity and~~ location of the impacts cannot be determined until excavation sites are identified. The severity of the impacts would vary depending upon how close these locations are to sensitive ~~receptors receivers~~. However, because much of the pipeline in Rancho Cucamonga, Carson, and Lomita is located in residential neighborhoods or near other sensitive ~~receptors receivers~~, it is likely that there would be some areas where the impacts would be significant. (It should be noted that in Irvine most of the pipeline travels through unoccupied open space, so in that jurisdiction construction is not likely to result in significant impacts related to exceeding noise standards.)

As discussed in Threshold NOI-D, because of the type of construction and its location, there is no effective mitigation that would reduce this impact below a level of significance. Therefore, impacts would be significant and unavoidable, at least at some locations. At the project level, additional analysis will be required for construction in the cities of Irvine, Mission Viejo, Rancho Cucamonga, Carson, and Lomita to determine whether noise levels would exceed noise levels in local noise policies. In other jurisdictions, if construction would be necessary outside the hours stipulated in local noise policies, additional analysis will also be conducted.

Mitigation Measures

Implement Mitigation Measures MM NOI-2 through MM NOI-4, as described under Threshold NOI-D.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. Therefore, these impacts are assumed to be significant and unavoidable. Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.

Threshold NOI-B: Expose Persons to or Generate Excessive Groundborne Vibration or Groundborne Noise Levels

For most locations, vibration from construction activities would not be great enough to result in impacts on vibration-sensitive ~~receptors receivers~~. However, at some locations, excavation, concrete-sawing, and other construction activities could generate vibration levels that could affect adjacent activities, such as near performing arts centers, hospitals, or where residences are close to

the excavation site. Vibration could also affect historic structures if they are located near the excavation site (see Section 4.5, *Cultural Resources*).

The effects of construction vibration cannot be determined without knowing the location of the construction sites. Therefore, it cannot be determined at this time where vibration impacts would occur or their severity. Implementation of Mitigation Measure MM NOI-1 would reduce any impacts to less-than-significant levels.

Mitigation Measures

MM NOI-1 Locate Excavation Sites Away From Vibration-Sensitive Uses

A noise and vibration consultant will be retained during excavation site planning to determine if there are vibration-sensitive land uses that could be affected by construction. Whenever possible, excavation ~~Excavation~~ sites will then be located so that vibration impacts would not affect vibration-sensitive land uses or mitigation would be included to reduce vibration levels at vibration-sensitive land uses to less-than-significant levels.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM NOI-1 would reduce these impacts so that residual impacts would be less than significant.

Threshold NOI-C: Result in a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project

The proposed program would not result in any permanent changes in noise levels after rehabilitation is complete. After construction is complete, the noise levels would be the same as the existing conditions. Therefore, there would be no impact.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

Threshold NOI-D: Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project

Noise Generation from Rehabilitation Activities

During rehabilitation activities, noise would be generated from construction equipment, especially at excavation sites from excavators, concrete saws, ventilation fans, power sources, and other sources. Noise is measured in units called decibels (dB). In environmental analyses, noise is often expressed in A-weighted decibels (dBA), which is a more accurate representation of how the human

ear perceives sound. (In the A-weighted system, the decibel values of sound at low frequency are reduced.)

The most constant noise would be from power generators, used to provide an energy supply for tools, construction trailers, and ventilation. These would operate nearly continuously during active construction hours, and they may be standalone or truck-mounted units. Noise levels from these generators vary greatly depending on the size and type of generators used.

An excavator would be used to dig the trench and expose the pipe. The types of excavators used for the projects in the proposed program would usually be relatively small to provide for easy access in narrow areas (such as within city streets), and because large track-mounted models may damage existing roadways. Noise from these types of excavators was measured at previous pipeline rehabilitation projects at average levels of 66 to 74 dBA at a distance of 42 feet.

Likely the noisiest operation at the rehabilitation sites would be concrete sawing. Although these saws would operate within the excavated pit, which would partially attenuate the noise, the concrete saws have been recorded producing average noise levels of 92 to 96 dBA at a distance of 18 feet from the pit and 72 to 83 dBA at a distance of 42 feet.

Pipe ventilation fans would be necessary for work in the pipe to provide fresh air for workers underground. During subterranean work, pipeline segments are usually ventilated in two locations, one intake and one exhaust. These fans must operate as long as there are workers in the pipe. Noise levels would vary depending on equipment used. When electric fans powered by “quiet” Whisperwatt diesel generators are used, the noise levels were measured at 75 dBA at 30 feet for the generator and fan combined (60 dBA for the generator on its own). If more traditional fans and/or generators are used, noise levels would be dramatically greater.

Substantial amounts of the rehabilitation work would occur underground. Underground construction activities would not usually generate substantial noise, but ventilation and power generation would be required for underground work. Other noise sources would include traffic noise associated with trucks delivering materials and workers commuting to the site, back-up alarms on trucks and equipment, cranes and other equipment for positioning pipes, and other typical construction noise. At the end of construction there would be additional noise generated from backhoes used to fill in the work area and roadway repaving with slurry.

Noise would also occur at staging locations, primarily from traffic.

Potential Noise Impacts

The effects of construction noise cannot be determined without knowing the location of the construction sites. Determining noise impacts requires an analysis of the ambient condition (the existing noise level), the location of ~~receptors~~ ~~receivers~~ (how far the ~~receptors~~ ~~receivers~~ would be from where the noise is generated), and attenuation of the noise (if there are any intervening structures, landscaping, etc.). Therefore, it cannot be determined at this time where noise impacts would occur or their severity. ~~It is likely, however, that noise~~ Noise levels in some locations would result in substantial temporary increases in ambient noise levels in the vicinity of construction, above existing levels. This would be a significant impact. Mitigation may be available to reduce noise levels somewhat, but would ~~likely~~ not reduce all impacts to less-than-significant levels due to the high levels of noise generated and the close proximity of sensitive receptors, especially residents on relatively narrow streets. Therefore, impacts would be significant and unavoidable, at least as some

locations. At the project level, additional analysis will be conducted to determine whether sensitive receptors are present, if construction would increase noise levels substantially at sensitive receptors, and whether mitigation could reduce any significant impacts to less-than-significant levels.

Mitigation Measures

MM NOI-2 Locate Excavation Sites Away From Noise-Sensitive Receptors ~~Receivers~~ Where Feasible.

A noise consultant will be retained during excavation site planning to determine if there are sensitive receptors ~~receivers~~ that could be affected by construction. Whenever possible, the excavation sites will be located in areas that would not affect sensitive receptors ~~receivers~~ or where receptors ~~receivers~~ can be shielded from construction noise.

MM NOI-3 Conduct Project-Level Noise Studies at Each Excavation Site Where Noise-Sensitive Receptors ~~Receivers~~ Are Present.

Project-level noise studies will be required at all excavation sites where sensitive receptors ~~receivers~~ are present, as required in the planning stage by MM NOI-2. Such noise studies will identify the ambient noise levels, the receptors ~~number of receivers~~ that would be affected, the noise levels the receptors ~~receivers~~ will experience during construction, and any measures that can be used to reduce noise levels. All feasible mitigation measures identified in this noise study will be implemented, and the amount of noise reduction that would occur with implementation of these measures.

MM NOI-4 Locate Staging Areas Away from Noise-Sensitive Receptors ~~Receivers~~ or Provide Noise Attenuation.

Whenever feasible ~~possible~~, staging areas will be located in areas that would not affect sensitive receptors ~~receivers~~ or where receptors ~~receivers~~ can be shielded from staging-area noise. Where possible, noise ~~Noise~~ screening will include temporary noise barriers with openings in the barriers kept to the minimum necessary for access.

Residual Impacts

Impacts that would result from the proposed program may be significant, but the severity or location of the impacts cannot be determined at this time. MM NOI-2 through MM NOI-4 may reduce these impacts; however, whether these measures would reduce all noise impacts to less-than-significant levels is not known. Therefore, these impacts are assumed to be significant and unavoidable. ~~Further environmental analysis and documentation is necessary prior to construction to determine if a significant impact would occur and if mitigation would reduce the impact to a less-than-significant level.~~

Threshold NOI-E: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Expose People Residing or Working in the Project Area to Excessive Noise Levels

Some portions of the existing pipelines are within airport land use plan areas or near airports (see Section 4.8, *Hazards and Hazardous Materials*). Airport land use plans establish allowable land uses within areas that are subject to high noise levels. However, because the program would not change land uses, and construction workers would be wearing noise safety gear as required by the federal Occupational Safety and Health Administration, noise impacts related to nearby airports would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold NOI-F: For a Project within the Vicinity of a Private Airstrip, Expose People Residing or Working in the Project Area to Excessive Noise Levels

There are no private airstrips in the vicinity of the existing pipelines (see Section 4.8, *Hazards and Hazardous Materials*). Therefore, there would be no impacts associated with noise from private airstrips.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

4.11.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

Construction noise and vibration are localized and site specific. Only when noise from multiple projects affect the same ~~receptors~~ ~~receiver~~ would noise result in cumulative impacts. This would be unlikely to occur with the proposed program. Therefore, the projects in the proposed program would not contribute to a cumulative noise impact.

Section 4.12 Recreation

4.12.1 Introduction

This section describes the existing conditions for recreation, the regulatory framework associated with recreation, the impacts on recreation that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant recreation impacts.

4.12.2 Existing Conditions

The study area for recreation is the pipeline easements or rights-of-way and immediately adjacent properties. The term *recreation* is used to refer to land uses used primarily for recreation, including publicly owned parks and trails, school recreational areas, and privately owned outdoor facilities, including golf courses and tennis facilities.

4.12.2.1 Allen-McColloch Pipeline

Table 4.12-1 lists the recreational facilities in the Allen-McColloch Pipeline study area.

Table 4.12-1. Recreational Facilities in Allen-McColloch Pipeline Study Area

Parks	Trails	Other Recreational Facilities (including recreational facilities at schools)
Fairmont Knolls Park	Equestrian trail west of Paso Fino Way	Black Hills Golf Club
Kingsbriar Park	Bike/horse trail along Fairmount Connector and Fairmount Boulevard	La Entrada High School
Imperial Park	Santa Ana River Trail/Bikeway	Fairmont Elementary School
	Trail along East Santiago Canyon Road	Bernardo Yorba Middle School
	Peters Canyon Regional Trail and Bikeway	Ivy Crest Montessori School
		Canyon High School
		Imperial Elementary School
		Riding Academy of Orange County (equestrian facility)

4.12.2.2 Calabasas Feeder

Table 4.12-2 lists the recreational facilities in the Calabasas Feeder study area.

Table 4.12-2. Recreational Facilities in Calabasas Feeder Study Area

Parks	Trails	Other Recreational Facilities (including recreational facilities at schools)
None	None	Nevada Avenue Elementary School
		Capistrano Avenue Elementary School

4.12.2.3 Rialto Pipeline

Table 4.12-3 lists the recreational facilities in the Rialto Pipeline study area.

Table 4.12-3. Recreational Facilities in Rialto Pipeline Study Area

Parks	Trails	Other Recreational Facilities (including recreational facilities at schools)
Hunter's Ridge Park	Hunter's Ridge Trails	Los Osos High School
Mini Park at southeast corner of Bluegrass Avenue and 24 th Street	Trail along Crescenta Way	Banyan Elementary School
Day Creek Park	Trail along Bluegrass Avenue	Pioneer Junior High School
Grigsby Park	Trail along Banyan Street	Pepper Tree Elementary School
Beryl Park	Thomson Creek Trail	Sierra La Verne Golf Course
Pioneer Park		San Dimas Canyon Golf Course
La Puerta Sports Park		
Higginbotham Park		
Live Oak Park		
Mills Park		
San Dimas Canyon Park		

4.12.2.4 Second Lower Feeder

Table 4.12-4 lists the recreational facilities in the Second Lower Feeder study area.

Table 4.12-4. Recreational Facilities in Second Lower Feeder Study Area

Parks	Trails	Other Recreational Facilities (including recreational facilities at schools)
Pioneer Park	San Gabriel River Mid Trail	Black Hills Golf Club

Parks	Trails	Other Recreational Facilities (including recreational facilities at schools)
Boysen Park	Bridlewood Trail	Heritage Oak School
Walnut Grove Park	June's Trail	Brookhaven Elementary School
Larwin Park	Sorrel Trail	El Dorado High School
Darrell Essex Park	Bridle Trail (southeast corner of Palos Verdes Drive East and Palos Verdes Drive North)	Theodore Roosevelt Elementary School
Veterans Park	Carriage Trail (western terminus of Second Lower Feeder)	Gilbert High School
Cypress Nature Park	Miller's Trail	Elizabeth Dickerson Elementary School
Stansbury Park	Stein Hale Nature Trail (Georgette Trail)	Juliet Morris Elementary School
El Dorado Regional Park		Skylinks at Long Beach Golf Course
Rosie the Riveter Park and Interpretive Center		Charles Evans Hughes Middle School
Los Cerritos Park		Longfellow Elementary School
Calas Park		Los Cerritos Elementary School
Dapplegray Park		Rancho Dominguez Preparatory School
		Carnegie Middle School
		Bonita Street Elementary School
		George S. Patton Continuation School
		Nathaniel Narbonne High School
		The Pines Christian School
		Rolling Hills Country Club

4.12.2.5 Sepulveda Feeder

Table 4.12-5 lists the recreational facilities in the Sepulveda Feeder study area.

Table 4.12-5. Recreational Facilities in Sepulveda Feeder Study Area

Parks	Trails	Other Recreational Facilities
Castle Park Monterey	None	Granada Hills Youth Recreational Center
Getty View Park		Golf Course (west of Gerald Avenue)
Westwood Park and		Jewish Educational Trade School

Parks	Trails	Other Recreational Facilities
Recreation Center		
Circle Park		Holy Martyrs Armenian School
Holly Park		Van Nuys Golf Course
Rowley Park		Tennis Courts (northwest corner of Sepulveda Boulevard and Valley Meadow Road)
		Steven S. Wise High School
		Berkeley Hall School
		Milken Community Middle School
		Charnock Road Elementary School
		Tennis courts (east of Charnock Road)
		Culver-Palms Family YMCA
		Frank D. Parent Elementary School
		Warren Lane Elementary School
		St. Eugene School
		Chester Washington Golf Course
		Crescendo Charter School
		Maria Regina School
		Junipero Serra High School

4.12.3 Regulatory Framework

This section describes the plans, policies, and regulations related to recreation that are applicable to the proposed program.

4.12.3.1 Federal

There are no federal regulations related to recreation applicable to the program.

4.12.3.2 State

California Public Park Preservation Act (Cal. Public Res. Code §§ 5400–5409)

The California Public Park Preservation Act provides that a public agency that acquires public parkland for non-park use must either pay compensation that is sufficient to acquire substantially equivalent substitute parkland or provide substitute parkland of comparable characteristics.

4.12.3.3 Local

Local policies related to recreation address providing adequate parks and other recreational facilities within their jurisdictions to serve their populations. Generally, such policies do not address temporary construction-related activities at existing recreational facilities.

4.12.4 Thresholds and Methodology

4.12.4.1 Thresholds of Significance

Table 4.12-6 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to recreation. These thresholds are addressed in the PEIR.

Table 4.12-6. CEQA Thresholds for Recreation

Threshold <i>Would the proposed program:</i>
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?
b. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

4.12.4.2 Methodology

As documented in Section 4.12.2, this PEIR identifies known recreational facilities within the study area of the pipeline alignments. The proposed program would generally not have long-term effects on recreation, because only minor permanent changes would potentially occur as a result of projects within the program, such as the addition of access manholes, small above-ground valve boxes, and electrical panels. All other permanent changes would be underground, and once rehabilitation is complete, there would be no permanent changes to recreational facilities.

During rehabilitation, construction may have adverse effects on these recreational facilities. Under CEQA, these effects would only result in significant impacts if they were to result in physical deterioration of the facilities, increase the use of a recreational facility, or require construction or expansion of recreational facilities. Permanent physical deterioration would only occur if the permanent elements interfered with use of the recreational use of the facility (such as an access manhole in the middle of a trail or play field) or if damage occurred during construction (such as locating construction staging areas in natural habitat areas without thorough clean-up and revegetation).

During construction, temporary effects on recreational uses could be significant if two conditions occurred: (1) the construction interfered with the use of the recreational facility to the extent that the recreational uses at that facility would be precluded; and (2) there are insufficient similar recreational facilities available nearby where the activities could be relocated. An example would be if construction interfered with play fields so that scheduled league sports could not be played, and that there were not enough similar fields available to handle relocated games.

4.12.5 Impacts Analysis

4.12.5.1 Program Analysis

Threshold REC-A: Increase the Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such That Substantial Physical Deterioration of the Facilities Would Occur or Be Accelerated

Portions of the PCCP pipelines are located in rights-of-way or easements within recreational facilities, such as through parks, golf courses, or school yards. For these portions of the pipelines, excavation sites may be located within the recreational facility. In these locations, excavation sites and work areas could result in part or all of the facility being unavailable during construction, for a maximum of approximately 6 months.¹ Also, construction staging areas may be located in parks, school yards, golf courses, or other recreational facilities for months or longer, depending on how many excavation sites the staging area is serving.

Metropolitan would work with the local jurisdictions and schools to ensure that rehabilitation would not result in significant temporary impacts on recreational activities or permanent physical deterioration of recreational facilities. Generally, excavation or staging areas would not be placed in active play areas (e.g., baseball/ softball, soccer, football, tennis) where recreational activities are scheduled (such as sports league games and school activities). If rehabilitation activities were located within trails or bike routes, safe detours would be provided during construction and the trail or bikeway would be restored when construction is complete. Excavations and staging within recreational facilities intended for natural areas would be avoided, if possible, and any required biological mitigation would be implemented (see Section 4.4, *Biological Resources*.)

Because rehabilitation activities would not permanently preclude recreational uses, requiring them to be relocated elsewhere, rehabilitation could lead to increased deterioration of recreational facilities. Impacts would be less than significant.

Because contractors would be required to return the site to preconstruction conditions once rehabilitation is complete, the PCCP program would not result in permanent physical deterioration of recreational facilities. Permanent aboveground elements (manholes, valve boxes, or electrical panels) would be placed in such a way as to not interfere with the use of the facility. Permanent impacts would be less than significant.

When there are recreation facilities located adjacent to or near excavation sites, construction activities could affect the use of the recreational facilities. These effects would include localized air quality effects, excessive noise, and limitations on access. These effects are discussed in Sections 4.3, *Air Quality*, 4.11, *Noise*, and 4.13, *Transportation*, respectively.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

¹ Work areas may include access areas, staging areas, parking areas, safety areas, etc.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold REC-B: Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities, Which Might Have an Adverse Physical Effect on the Environment

The proposed program does not include construction of recreational facilities. It would not result in increased population that would require the construction or expansion of recreational facilities. Therefore, the proposed program would not result in adverse physical effects on the environment related to construction of recreational facilities.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

4.12.5.2 Cumulative Analysis**Program Analysis**

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

The proposed program would result in less-than-significant effects on recreational facilities. These impacts would be temporary and/or localized, and would not combine with impacts on recreational facilities from other projects to result in a considerable contribution to cumulative impacts.

Section 4.13

Transportation and Traffic

4.13.1 Introduction

This section describes the existing conditions for transportation and traffic, the regulatory framework associated with transportation and traffic, the impacts on transportation and traffic that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant transportation and traffic impacts. Figures 4.13-1 through 4.13-5 show the major transportation facilities in the transportation study area, including major highways, off-road trails and bicycle routes, and airports.

4.13.2 Existing Conditions

The study area for vehicular, transit, bicycle, and pedestrian traffic includes the streets in which the pipelines are located or cross. For air transportation, the study area includes the airport land use plan areas in which the pipelines are located.

The narratives provided in this section summarize the general roadway information characterizing the streets and highways through which the five pipelines are aligned, and/or where construction is anticipated. Each of the pipelines traverses multiple local jurisdictions, with overlying roadways of various size and functionality, ranging from 24-foot-wide, two-lane residential streets to 100-foot-wide, eight-lane regional corridors. The inventoried information provided in Tables 4.13-1 to 4.13-5 includes the following.

- Name of agency (or agencies) having jurisdiction over the roadway
- Street name
- Street width (curb-to-curb)
- Functional classification, per the jurisdictions' general plans
- Number of through travel lanes (total for both directions)
- Type of center median divider (if any)
- Presence of on-street parking lanes (if any)
- Type of adjacent driveway access
- Multimodal facilities provided within and/or along the roadway (e.g., fixed bus routes, rail service, bicycle lanes, pedestrian sidewalks, equestrian trail access)
- Additional information about the pipeline alignment such as direction, length of the segment, major street crossings (perpendicular to the alignment), shared jurisdictional boundaries of the roadway, and nearby freeway interchanges

4.13.2.1 Allen-McColloch Pipeline

The Allen-McColloch Pipeline begins at Metropolitan's Robert Diemer Water Treatment Plant in Yorba Linda and ends 25 miles to the south at the El Toro Water District reservoir in Mission Viejo. The pipeline extends southeast from the Diemer Plant through the Black Gold Golf Club, circumventing several residential neighborhoods before turning southward through Yorba Linda. It crosses Bastanchury Road and turns eastward along a short, 1,000-foot centerline length of Yorba Linda Boulevard before turning south along the centerline of Fairmont Boulevard. The Allen-McColloch Pipeline follows Fairmont Boulevard for nearly 2 miles, crossing Paseo De Las Palmas and Village Center Drive before angling southwest and downhill along the Fairmont Connector onto Esperanza Road. The pipeline follows Esperanza Road west for 0.5 mile and then turns south to travel underneath the adjacent railroad tracks and southward under Chrisden Street in Anaheim. The alignment continues south for another 0.5 mile, crossing La Palma Avenue, the Santa Ana River, State Route 91 (SR-91), and Via Cortez along the east side of Canyon Plaza before turning west on Santa Ana Canyon Road. Just east of Imperial Highway, the Allen-McColloch Pipeline angles southwesterly across the athletic fields and turns south under the northbound lanes of Imperial Highway. It then continues south for nearly 3 miles into the city of Orange, crossing Nohl Ranch Road, Cannon Street, and Serrano Avenue, before turning east along Santiago Canyon Road. The pipeline follows Santiago Canyon Road southeast for 2 miles, then turns south along the west side of Jamboree Road (mostly off-street) for 2.5 miles. The Allen-McColloch Pipeline alignment then turns southeast and traverses a 5.5-mile distance across State Route 261 (SR-261), State Route 241 (SR-241), and State Route 133 (SR-133) in Irvine before crossing Portola Parkway. The pipeline continues south for 4 miles into Lake Forest, crossing Alton Parkway, Bake Parkway, and Lake Forest Drive before turning southeast under the northbound lanes of Trabuco Road. At a point approximately 200 feet south of the Lake Forest/Mission Viejo boundary line, the Allen-McColloch Pipeline turns south through a multi-family residential community before turning east onto Los Alisos Boulevard for a distance of 900 feet, then again to the southeast for a distance of 1,500 feet until its terminus at the El Toro Reservoir.

Vehicular Transportation

Table 4.13-1 provides an inventory of the types of streets in which the existing Allen-McColloch Pipeline is located.

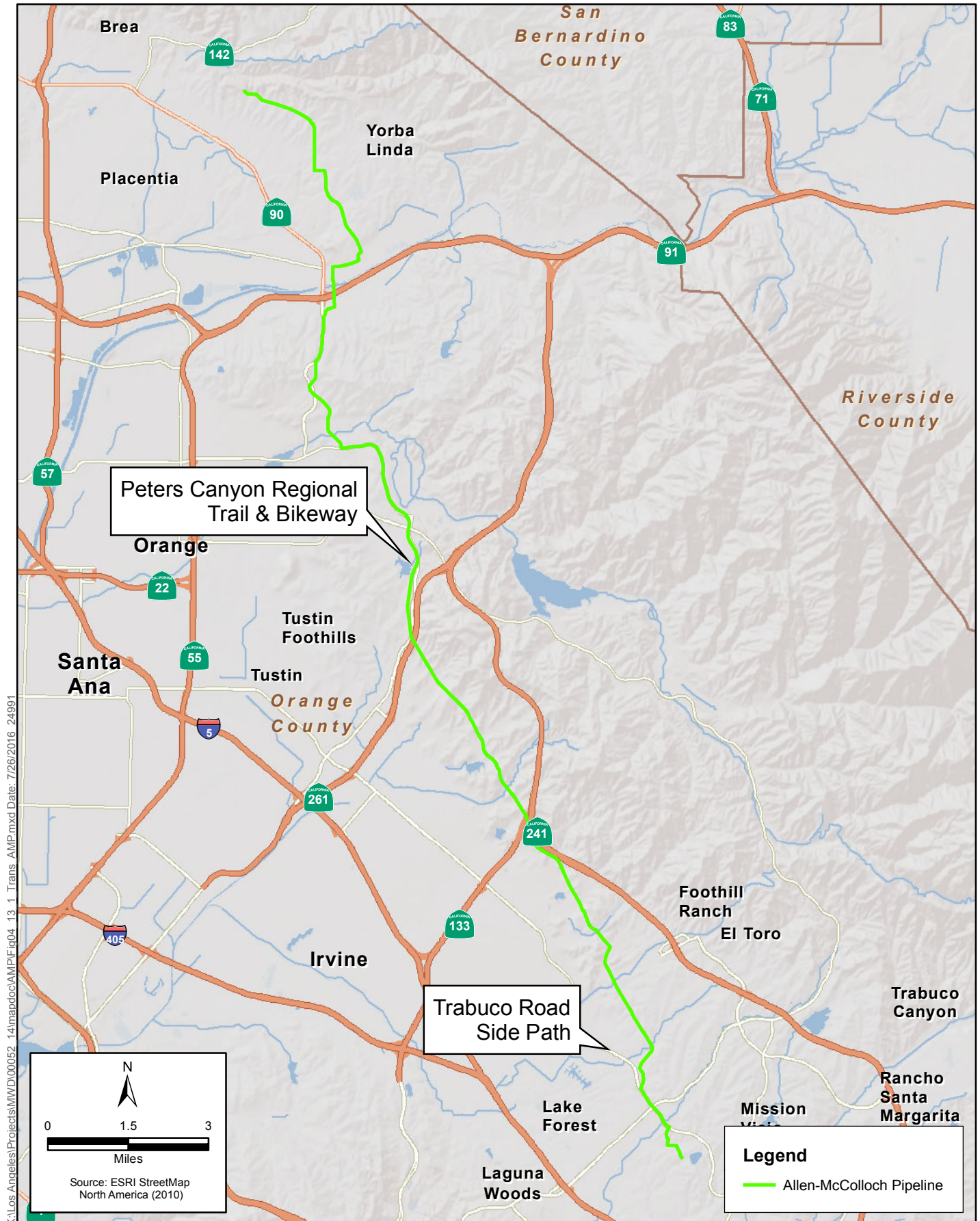


Figure 4.13-1
Major Transportation Facilities – Allen-McColloch Pipeline
Metropolitan PCCP Program



Figure 4.13-2
Major Transportation Facilities – Calabasas Feeder
Metropolitan PCCP Program



Figure 4.13-3
Major Transportation Facilities – Rialto Pipeline
Metropolitan PCCP Program

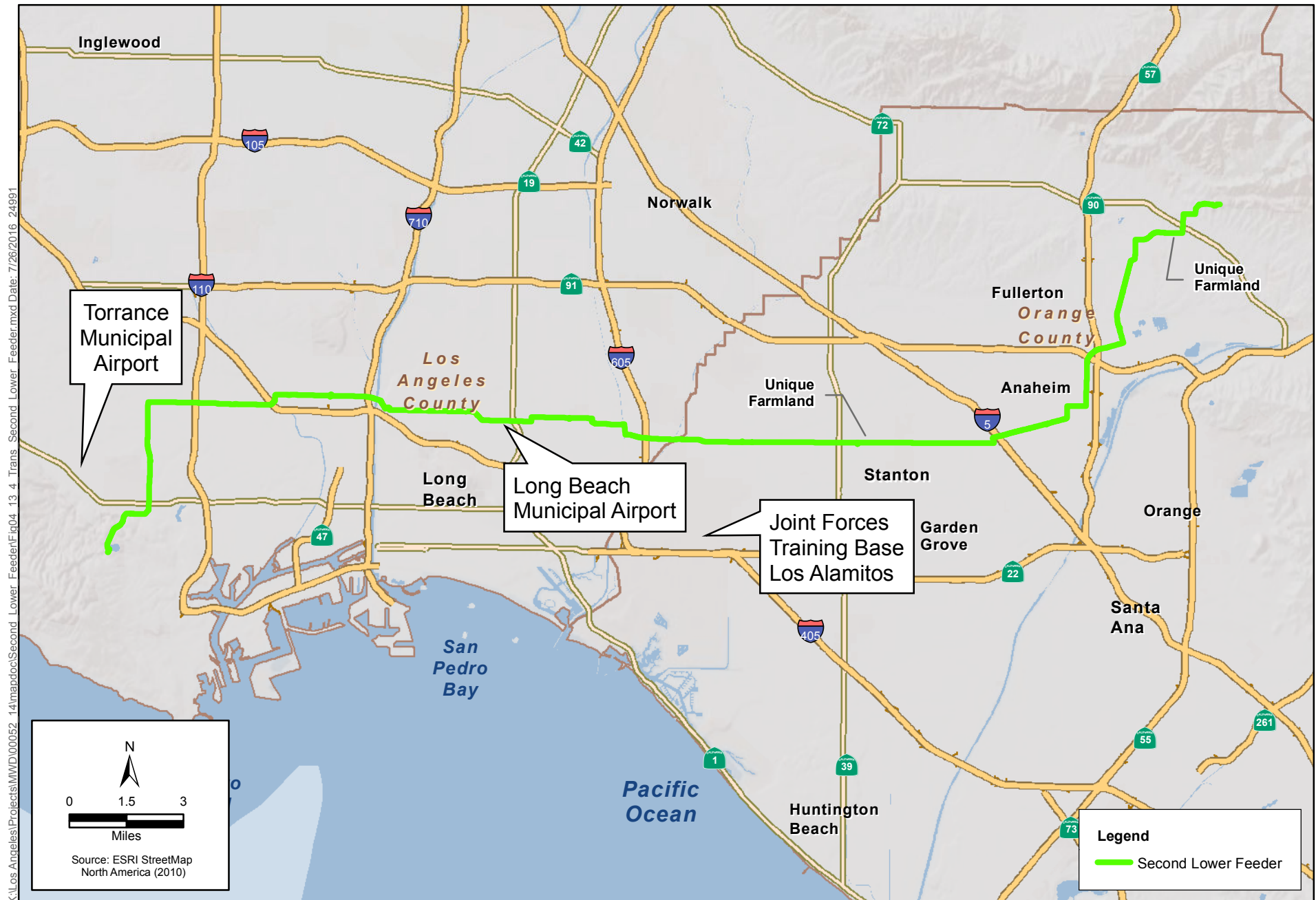




Figure 4.13-5
Major Transportation Facilities – Sepulveda Feeder
Metropolitan PCCP Program

Table 4.13-1. Inventory of Streets in Allen-McColloch Pipeline Study Area

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Yorba Linda	Bastanchury Road	64	Modified Primary Arterial	4	Raised	---	Limited	---	Class II	Sidewalks	South	64	Crosses roadway briefly
Yorba Linda	Yorba Linda Boulevard	84	Primary Arterial	6	Raised	---	Commercial	OCTA 26	---	Sidewalks	East	1,000	
Yorba Linda	Fairmount Boulevard	64-78	Primary Arterial	4	Raised/2-way left-turn lanes	---	School	OCTA 26	Class II	Sidewalks	Southeast	9,950	
Anaheim	North Chrisden Street	40	Local Street	2	---	2 sides	Commercial Alley	OCTA 30 OCTA 38	---	Sidewalks	South	750	
Anaheim	East La Palma Avenue	80	Primary Arterial	6	Raised/2-way left-turn lanes	---	Commercial	---	---	Sidewalks	South	82	Crosses roadway briefly
Anaheim	Via Cortez	40	Local Street	2	---	1 side	None	---	---	Sidewalk (west side)	South	500	
Anaheim	Santa Ana Canyon Road	96	Primary Arterial	5	Raised	---	Limited	---	Class II (one side)	Trail (south side)	Southwest	600	Alignment adjacent to southern curb
Anaheim	Imperial Highway	90	Major/Primary Arterial	4-5	Raised	---	Commercial, School	---	Class II	Sidewalks	South	4,500	
Orange	Cannon Street	100	Major Arterial	4	Raised	---	None	---	Class II	Sidewalks	Southwest/ Southeast	100 /100	Crosses street twice
Orange	Serrano Avenue	62	Primary Arterial	4	Raised	---	None	---	---	Sidewalk (south side)	South	70	Crosses roadway briefly
Orange	Yellowstone Boulevard	50	Local Street	2	Raised	---	None	---	---	Sidewalks	South	1,250	
Orange	East Santiago Canyon Road	80	Major Arterial	4	Raised	---	Limited	---	Class II	Sidewalks Trails	East/ Southeast	11,300	
Orange	Jamboree Road	104	Major Arterial	6	Raised	---	None	---	Class II	Sidewalks Trails	South	4,000	Located mostly off-street
Tustin	Hewes Avenue	36	Private Road	2	---	---	None	---	---	Sidewalks	South	350	Entry drive into residential community; crosses Pioneer Road
Irvine	Portola Parkway	80	Major Highway	4	Raised	---	Maintenance only	---	Class II	Sidewalks Trails	South	80	Crosses roadway briefly
Irvine	Alton Parkway	100	Major Highway	6	Raised	---	Maintenance only	OCTA 188 OCTA 211 OCTA 480	Class II	Sidewalks	Southeast	102	Crosses roadway briefly
Lake Forest	Arctic Ocean Drive	42	Local Street	2	2-way left-turn lanes	---	Office Parks	---	---	Sidewalks	Southeast	42	Crosses roadway briefly
Lake Forest	Bake Parkway	82	Primary Arterial	4	Raised	---	None	OCTA 206 OCTA 480	Class II	Sidewalks	Southeast	86	Crosses roadway briefly
Lake Forest	Marin	24	Local Street	2	---	---	Multiple (residential)	OCTA 177	---	None	Southeast	350	
Lake Forest	Lake Forest Drive	86	Primary Arterial	4	Raised	---	Commercial	---	Class II	Sidewalks	Southwest	130	Crosses roadway briefly
Lake Forest	Old Trabuco Road	36	Local Street	2	---	---	Church Residential	---	---	Sidewalk (east side)	Southeast	1350	Cul-de-sac at south end
Lake Forest	Trabuco Road	100	Major Arterial	4-6	Raised	---	Private Commercial	OCTA 188	Class I Class II	Sidewalks	Southeast	4,550	South city limit of Lake Forest Crosses El Toro Road
Mission Viejo	Trabuco Road	84	Primary Arterial	4	Raised	---	Church	OCTA 188	Class II	Sidewalks	Southeast	300	North city limit of Mission Viejo
Mission Viejo	Via Pimiento	40	Private Road	2	---	Marked	Multiple (residential)	---	---	Sidewalks	South	1,400	
Mission Viejo	Los Alisos Boulevard	100	Major Arterial	6	Raised	---	None	OCTA 86	Class II	Sidewalks	East	900	
Mission Viejo	La Glorietta	34	Local Street	2	---	---	Residential	---	---	Sidewalk (west side)	Southeast	1000	

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Transit and Rail

The Allen-McColloch Pipeline traverses local agencies within Orange County. The Orange County Transportation Authority (OCTA) owns and operates the vast majority of transit and rail services. OCTA runs numerous fixed bus routes on streets that the Allen-McColloch Pipeline crosses or where it is aligned, including the following.

- Line 26 on Yorba Linda Boulevard (city of Yorba Linda)
- Line 30 on Esperanza Road (city of Yorba Linda)
- Line 38 on Chrisden Street (city of Anaheim)
- Line 86 (city of Mission Viejo)
- Line 177 (city of Lake Forest)
- Line 188 (cities of Irvine, Mission Viejo, and Lake Forest)
- Line 206 (city of Lake Forest)
- Line 211 (city of Irvine)
- Line 480 (city of Lake Forest)

Bicycle Facilities

There are numerous bikeway facilities found within the vicinity of the Allen-McColloch Pipeline alignment. The following streets contain designated facilities for bicyclists.

- Class I (off-street bike path) bikeways
 - Peters Canyon Regional Trail & Bikeway (cities of Orange and Tustin): The Allen-McColloch Pipeline follows a north/south alignment along the west of Jamboree Road, crossing several different points along the Peters Canyon and Ridge View Trail, a combined path for pedestrians and bicyclists.
 - Trabuco Road Side Path (city of Lake Forest)
- Class II (on-street marked bike lanes) bikeways
 - Bastanchury Road (city of Yorba Linda)
 - Fairmont Boulevard (city of Yorba Linda)
 - Esperanza Road (city of Yorba Linda)
 - Santa Ana Canyon Road (city of Anaheim, one side)
 - Imperial Highway (city of Anaheim)
 - Cannon Street (city of Orange)
 - E. Santiago Canyon Road (city of Orange)
 - Portola Parkway (city of Irvine)
 - Alton Parkway (city of Irvine)
 - Bake Parkway (city of Lake Forest)

- Lake Forest Drive (city of Lake Forest)
- Trabuco Road (city of Lake Forest)
- Los Alisos Boulevard (city of Mission Viejo)

Pedestrian Facilities

A survey of the existing roadside conditions revealed that virtually all of the streets and highways aligned over and/or crossing the Allen-McColloch Pipeline contain paved pedestrian sidewalks and/or equestrian trails along the roadside. Some streets (e.g., Esperanza Road, Serrano Avenue, Old Trabuco Road, La Glorieta) provide sidewalks along only one side of the street, due to the surrounding physical constraints. The following pedestrian facilities were found to be located along a significant length of the Allen-McColloch Pipeline alignment.

- Peters Canyon Regional Trail & Bikeway (cities of Orange and Tustin): The Allen-McColloch Pipeline follows a north/south alignment along the west of Jamboree Road, crossing several different points along the Peters Canyon and Ridge View Trail, a combined path for pedestrians and bicyclists.
- Fairmont Boulevard (city of Yorba Linda): Sidewalks on the eastern side of Fairmont Boulevard north and south of Paseo De Las Palomas are within 10 feet of the pipeline centerline.
- Santiago Canyon Road (city of Orange): South of Newport Boulevard to Jamboree Road the sidewalk on the north side of Santiago Canyon Road is near and crosses the Allen-McColloch Pipeline at several points.
- Jamboree Road (city of Orange): There is a Class I (off-street bicycle path) facility along Jamboree Road where the Allen-McColloch Pipeline is aligned off-street.

Air Transportation

There are no public airports, applicable airport land use plans, or private airstrips in the study area for the Allen-McColloch Pipeline.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency response and evacuation plans have been identified in the study area for the Allen-McColloch Pipeline.

- **City of Orange:** According to the City of Orange General Plan, Public Safety Element, all arterials in the city are recognized as primary emergency response routes. (City of Orange 2010)
- **City of Tustin:** According to the Tustin General Plan, Public Safety Element, Jamboree Road is an evacuation route in the Allen-McColloch Pipeline study area. (City of Tustin 2013)
- **City of Mission Viejo:** According to the City of Mission Viejo General Plan, Public Safety Element, there are city evacuation routes along Trabuco Road and Los Alisos Boulevard within the Allen-McColloch Pipeline study area. (City of Mission Viejo 2009)

4.13.2.2 Calabasas Feeder

The Calabasas Feeder begins at the intersection of Chatsworth Street and Owensmouth Avenue in the city of Los Angeles (Chatsworth-Porter Ranch neighborhood) and ends 9.25 miles to the south in

the city of Calabasas. There are six major alignment shifts in the Calabasas Feeder, each of which generally orients the pipeline further the south or west. The northernmost portion of the Calabasas Feeder is 2.75 miles in length, travels southerly along Owensmouth Avenue through the city of Los Angeles, and traverses both residential and industrial areas of the community. Major arterial crossings include Devonshire Street, Lassen Street, Plummer Street, Nordhoff Street, and Parthenia Street. In the southern part of the neighborhood, the Calabasas Feeder turns west on Chase Street for a distance of approximately 4,000 feet before turning southward again on Shoup Avenue along the northbound lanes. This segment of the pipeline is crossed by Roscoe Boulevard, which serves as the boundary line between the Chatsworth-Porter Ranch and Canoga-Woodland Hills communities. At approximately 0.5 mile south of Chase Street, the Calabasas Feeder turns westward at Strathern Street for 0.5 mile, then southward again at Fallbrook Avenue. The alignment continues south on Fallbrook Avenue for a distance of just over 3 miles, crossing Saticoy Street, Sherman Way, Vanowen Street, Victory Boulevard, and Burbank Boulevard before turning southwest toward Mulholland Drive. West of Fallbrook Avenue, the pipeline meanders through local streets in a southwesterly direction before first crossing Valley Circle Boulevard and then U.S. Highway 101 (US-101) to its terminus within Metropolitan's Las Virgenes Municipal Water District Service Connection.

Vehicular Transportation

Table 4.13-2 provides an inventory of the types of streets in which the existing Calabasas Feeder is located.

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Table 4.13-2. Inventory of Streets in Calabasas Feeder Study Area

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Los Angeles	Chatsworth Street	50	Secondary Arterial	2	---	---	Residential	---	---	Sidewalk (north side)	South	50	Crosses roadway briefly
Los Angeles	Owensmouth Avenue	40	Collector	2	---	2 sides	Residential Industrial	MTA 166 MTA 364	---	Sidewalks	South	14,650	Heavy on-street parking; industrial access
Los Angeles	Chase Street	36	Collector	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	4,000	
Los Angeles	Shoup Street	36	Secondary Arterial	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	South	2,600	
Los Angeles	Strathern Street	40	Collector	2	---	2 sides	Multiple (Residential)	MTA 152 MTA 353	---	Sidewalks	West	2,650	
Los Angeles	Fallbrook Avenue	80	Major Highway Class II	4	2-way left-turn lanes	2 sides	Multiple (residential)	MTA 152 MTA 165 MTA 169 MTA 353	Class II	Sidewalks	South	17,650	
Los Angeles	Leonora Drive	34	Local Street	2	---	6 p.m.– 8 a.m.	Multiple (residential)	---	---	---	Southwest	1,250	
Los Angeles	Royer Avenue	40	Local Street	2	---	2 sides	None	---	---	Sidewalks	Southeast	350	
Los Angeles	Ventura Boulevard	90	Major Highway CL2	4	2-way left-turn lanes	2 sides	Commercial Retail	---	---	Sidewalks	Southwest	2,750	
Los Angeles	Leonora Drive	40	Local Street	2	---	1 side	Residential	---	---	---	West	650	Cul-de-sac at eastern end
Los Angeles	Valley Circle Boulevard	94	Major Highway CL2	4	---	---	Limited	---	---	Sidewalks	West	116	Crosses roadway briefly near US-101 interchange
Los Angeles	Long Valley Road	40	Local Street	3	---	---	None	---	---	---	Southwest	1,300	Located off-street. Travels south under US-101

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Transit and Rail

The Calabasas Feeder travels mostly through the city of Los Angeles, with its southerly terminus very briefly crossing the boundary lines of the cities of Hidden Hills and Calabasas. The Los Angeles County Metropolitan Transportation Authority (MTA) owns and operates commuter rail service throughout the city of Los Angeles, as well as large majority of fixed-route local transit. The following three bus routes are located on the Calabasas Feeder alignment.

- MTA Line 152/353 (Fallbrook Avenue)
- MTA Line 165 (Vanowen Street crossing Fallbrook Avenue)
- MTA Line 166/364 (Owensmouth Avenue)

Bicycle Facilities

The only designated bikeway facility in the Calabasas Feeder project area is on Fallbrook Avenue. Along the entirety of its length, Fallbrook Avenue provides both a marked on-street parking lane and a Class II bikeway (on-street marked bike lanes). The Calabasas Feeder meanders between the northbound and southbound lanes.

Pedestrian Facilities

Paved concrete sidewalks are provided on both sides of all streets within the project area, except for Leonora Drive and Long Valley Road. In some cases the pipeline alignment is near the existing curb, near the pedestrian facilities, such as in the following locations.

- The eastern sidewalk on Owensmouth Avenue from Lassen Street to Prairie Street
- The eastern sidewalk on Owensmouth Avenue south of Osbourne Street to Chase Street
- Shoup Avenue north of Roscoe Boulevard

Air Transportation

There are no public airports, airport land use plans, or private airstrips within 2 miles of the Calabasas Feeder alignment.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency response and evacuation plans have been identified in the study area for the Calabasas Feeder.

- **City of Los Angeles:** According to the City of Los Angeles General Plan, Safety Element, there is a city disaster route on State Route 27 (SR-27) (Topanga Canyon Boulevard) in the Calabasas Feeder study area. (City of Los Angeles 1996)
- **City of Hidden Hills:** According to the Hidden Hills General Plan, Safety Element, there is an evacuation route on Long Valley Road in the Calabasas Feeder study area. (City of Hidden Hills 1995)

4.13.2.3 Rialto Pipeline

The Rialto Pipeline begins at the California Department of Water Resources facility in the city of San Bernardino and ends 30 miles to the west at the San Dimas Power Plant in the city of San Dimas. The Rialto Pipeline begins by extending southwest from the California Department of Water Resources facility and along the east side of Pine Avenue through a nearby residential community. The pipeline crosses under Kendall Drive, Interstate 215 (I-215), and Cajon Boulevard and traverses a 2-mile stretch of vacant area in San Bernardino County before crossing under Riverside Avenue in the city of Rialto. The pipeline continues westward along Casa Grande Drive, crossing Alder Avenue, Sierra Avenue, Citrus Avenue, Interstate 15 (I-15), and Cherry Avenue before turning southwest across a 0.25-mile stretch of vacant county land toward Crescenta Way in the neighboring city of Rancho Cucamonga. From Crescenta Way, the Rialto Pipeline alignment turns westward onto Wilson Avenue, crossing over to the eastbound lanes (west of Wardman Bullock Road), and then continues off-street and to the west along the southerly right-of-way line on Wilson Avenue. The pipeline turns south at Bluegrass Avenue, then west again at Banyan Street across the southeasterly parking lot of John Golden Elementary. The alignment then continues for 3.5 miles on Banyan Street, crossing Day Creek Boulevard, Milliken Avenue, and Haven Avenue before turning south at Archibald Avenue. From Archibald Avenue, the pipeline turns to the west and south onto Amethyst Avenue and along several utility easements, crossing Carnelian Street, Sapphire Street, and the Cucamonga Creek storm channel at the boundary line between the cities of Rancho Cucamonga and Upland. The pipeline then crosses under Interstate 210 (I-210) to the south into the city of Upland, travels along Campus Avenue through the Crossroads Colonies shopping center, and then turns west along 18th Street. The Rialto Pipeline alignment continues along 18th Street until its terminus, crossing Euclid Avenue, San Antonio Avenue, Mountain Avenue, and Benson Avenue. From the end of 18th Street, the pipeline continues west beyond I-210, and into the neighboring city of Claremont for 1.25 miles following the east/west alignment of Miramar Avenue. At the westerly terminus of Miramar Avenue at Forbes Avenue the alignment continues west along the Thompson Creek Trail through an unincorporated portion of Los Angeles County, northwest into the city of La Verne where it joins to the Live Oak Reservoir, then westward again, crossing Esperanza Drive toward the adjacent residential community. The alignment proceeds west for 5,000 feet past Esperanza Drive, where it turns south at Wheeler Avenue, then west again at the T-intersection of Wheeler Avenue and Via Arroyo. The westernmost 0.75-mile portion of the pipeline travels southwest into the city of San Dimas along San Dimas Canyon Road, then to Sycamore Canyon Road where it turns west and terminates at the city's Power Plant facility.

Vehicular Transportation

Table 4.13-3 provides an inventory of the types of streets in which the existing Rialto Pipeline is located.

Table 4.13-3. Inventory of Streets in Rialto Pipeline Study Area

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
San Bernardino	West Ohio Street	40	Collector	2	---	---	Residential	---	---	Sidewalk (southwest side)	Southwest	40	Crosses roadway briefly
San Bernardino	Pine Avenue North	40-64	Collector/Secondary	2-4	2-way left-turn lanes/Center Lane	---	Residential (northern portion)	---	---	Sidewalks	Southwest	4,900	Briefly crosses Torrey Pine Road and White Pine Avenue
San Bernardino	Kendall Drive	75	Major Arterial	4	Paved	---	None	Omnitrans 2	Class II	Sidewalks	Southwest	100	Crosses roadway briefly
San Bernardino	Industrial Parkway	64	Secondary Arterial	4	2-way left-turn lanes	---	None			Sidewalk (south side)	West	600	
San Bernardino	Cajon Boulevard	50	Major Arterial	2	---	---	None	---	---	---	Southwest	50	Crosses roadway briefly Historic Route 66
Rialto	Riverside Avenue	50	Major Arterial	2	---	---	Residential	---	---	Sidewalk (southwest side)	West	100	Crosses roadway briefly
Rialto	West Casa Grande Drive	64	Secondary Arterial	3-4	---	---	None	Omnitrans 22	Class II	Sidewalks	West	6,600	
Rialto	Alder Avenue	72	Major Arterial	4	Raised	---	None	Omnitrans 22	Class II	Sidewalks	West	100	Crosses roadway briefly
Fontana	Citrus Avenue	80	Primary Highway	4	Raised	---	None	---	Class II	Sidewalks	West	100	Crosses roadway briefly
Fontana	Knox Avenue	44	Collector Street	2	---	---	None	---	---	Sidewalks	West	1,300	
Fontana	Coyote Canyon Road	70	Secondary Highway	2	Paved	---	None	---	Class II	Sidewalk (northwest side)	West	100	Crosses roadway briefly
Fontana	Cherry Avenue	72	Modified Primary Highway	4	Raised	---	None	---	Class II	Sidewalks	West	72	Crosses roadway briefly
Rancho Cucamonga	San Sevaine Road	36	Local Street	2	---	---	None	---	Class I	Sidewalks, Trails	Southwest	45	Crosses roadway briefly
Rancho Cucamonga	Crescenta Way	36	Local Street	2	---	---	Multiple (residential) (north side)	---	---	Sidewalk (south side)	Southwest	2,150	Mostly off-street Briefly crosses Crestline Place Briefly crosses Ridgeline Place
Rancho Cucamonga	Wardman Bullock Road	44	Modified Secondary + Median	2-4	2-way left-turn lanes/Center Lane	---	None	---	Class I	Sidewalks, Trails	West	75	Crosses roadway briefly
Rancho Cucamonga	Wilson Avenue	68	Modified Major + Median	2-4	Raised	---	None	---	Class I	Sidewalks, Trails	West	4,080	Mostly off-street Elbow briefly crosses at East Avenue
Rancho Cucamonga	Bluegrass Avenue	42	Local Street	2	---	---	None	---	---	Sidewalks	South	1,700	50% off-street 90-degree turn under Golden Elementary School
Rancho Cucamonga	Banyan Street	50	Collector	2	2-way left-turn lanes/Center Lane	1 side	Schools	---	Class II	Sidewalks, Trails	West	11,000	Heavy on-street parking between Milliken Avenue and Rochester
Rancho Cucamonga	Day Creek Boulevard	75	Modified Major + Median	4	Raised	---	None	---	Class II	Sidewalks	West	100	Crosses roadway briefly
Rancho Cucamonga	Milliken Avenue	94	Major Arterial	5	Raised	---	School	Omnitrans 85	Class II	Sidewalks	West	125	Crosses roadway briefly
Rancho Cucamonga	Merlot Court	36	Private Road	2	---	---	Multiple (residential)	---	---	Sidewalk (south side)	West	550	Largely off-street; cul-de-sac at western end
Rancho Cucamonga	Haven Avenue	94	Major Divided Arterial	6	Raised	---	None	Omnitrans 80 Omnitrans 81	---	Sidewalks	West	100	Crosses roadway briefly; traverses church parking lot
Rancho Cucamonga	Archibald Avenue	60	Major Arterial	4	2-way left-turn lanes	---	None	Omnitrans 67	---	Sidewalks	South	650	
Rancho Cucamonga	Klusman Avenue/ Jadieite Avenue	36	Local Street	2	---	---	Multiple (residential)	---	---	Sidewalks	West	100	Crosses 2 roadways briefly

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Rancho Cucamonga	Amethyst Avenue	42	Collector	2	---	---	Multiple (residential)	---	---	Sidewalks	South	1,900	
Rancho Cucamonga	Highland Avenue	34	Local Street	2	---	---	Multiple (residential)	---	---	Sidewalks	West	200	Elbow turn at Highland Avenue/ Broken Star Court
Rancho Cucamonga	Camelian Street	72	Secondary Arterial	4	---	---	Limited	---	---	Sidewalks	West	100	Crosses roadway briefly
Rancho Cucamonga	Highland Avenue	44	Collector Street	2	---	---	None	---	---	Sidewalks	West	3,500	
Upland	North Campus Avenue	72	Secondary Arterial	4	Raised	---	Commercial	Omnitrans 83	Class II	Sidewalks	Southwest	1,700	Additional 90-foot crossing of intersecting 19 th Street
Upland	Winston Avenue	36	Local Street	2	---	---	Multiple (residential) (east side)	---	---	Sidewalks	South	1,300	Feeder branches off to the south from mainline
Upland	18 th Street	40	Local Street	2	---	1 side	School	Omnitrans 83 Omnitrans 84	---	Sidewalks	West	11,000	Heavy on-street parking near Pioneer Junior High School; crosses San Antonio Avenue, Mountain Avenue, Benson Avenue
Upland	Euclid Avenue	150	Major Arterial	4	Raised	2 sides	Limited	Omnitrans 83 Omnitrans 84	Class II	Sidewalks	West	150	Crosses roadway briefly
Claremont	East Miramar Avenue	20-50	Private Road/Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	6,500	Briefly crosses Padua Avenue, Grand Avenue, Mills Avenue, Bonnie Brae Avenue
La Verne	Wheeler Avenue	70	Secondary Arterial	4	2-way left-turn lanes	---	Multiple (residential)	---	---	Sidewalks	Southwest	1,050	Briefly crosses 36-foot section of Old Wheeler Road
San Dimas	San Dimas Canyon Road	46	Scenic Parkway	2	2-way left-turn lanes	---	Residential	---	---	Sidewalk (north side)	Southwest	3,800	

Transit and Rail

The Rialto Pipeline passes through eight local cities and various unincorporated areas in San Bernardino County. San Bernardino County Public Transit (Omnitrans) is the primary public transit agency in the San Bernardino Valley, providing fixed local and intercity routes from Chino Hills to Yucaipa. The following bus routes are within the vicinity of the Rialto Pipeline alignment.

- Omnitrans Line 2 (Kendall Drive—city of San Bernardino)
- Omnitrans Line 22 (West Casa Grande Drive, Alder Avenue—city of Rialto)
- Omnitrans Line 67 (Archibald Avenue—city of Rancho Cucamonga)
- Omnitrans Line 85 (Milliken Avenue—city of Rancho Cucamonga)
- Omnitrans Line 80/81 (Haven Avenue—city of Rancho Cucamonga)
- Omnitrans Line 83 (North Campus Avenue—city of Upland)
- Omnitrans Line 84 (18th Street, Euclid Avenue—city of Upland)

Bicycle Facilities

There are several bikeway facilities in the vicinity of the Rialto Pipeline. The following streets contain designated facilities for bicyclists.

- Class I (off-street bike path) bikeways
 - San Sevaine Road (city of Rancho Cucamonga)
 - Wardman Bullock Road (city of Rancho Cucamonga)
 - Wilson Avenue (city of Rancho Cucamonga)
- Class II (on-street marked bike lanes) bikeways
 - Kendall Drive (city of San Bernardino)
 - West Casa Grande Drive (city of Rialto)
 - Alder Avenue (city of Rialto)
 - Citrus Avenue (city of Fontana)
 - Coyote Canyon Road (city of Fontana)
 - Cherry Avenue (city of Fontana)
 - Banyan Street (city of Rancho Cucamonga)
 - Day Creek Boulevard (city of Rancho Cucamonga)
 - Milliken Street (city of Rancho Cucamonga)
 - North Campus Avenue (city of Upland)
 - Euclid Avenue (city of Upland)

Pedestrian Facilities

Paved concrete sidewalks for pedestrians are provided on all of the streets along which the Rialto Pipeline travels. Some streets (e.g., Ohio Avenue, Industrial Parkway, Crescenta Way, San Dimas Canyon Road) provide sidewalks along only one side of the street, due to the surrounding physical constraints. Certain portions of the pipeline alignment are at or near the existing curb, such as in the following locations.

- South sidewalk on Pine Avenue between Ohio Avenue and Irvington Avenue (city of San Bernardino)
- South sidewalk on Crescenta Way (city of Rancho Cucamonga)
- South sidewalk on Wilson Avenue west of Wardman Bullock Road for a distance of approximately 3,000 feet (city of Rancho Cucamonga)
- South sidewalk on 24th Street (city of Rancho Cucamonga)
- Bluegrass Avenue south of Chellendon Drive, north of Etiwanda Elementary (city of Rancho Cucamonga)
- South sidewalk on Banyan Street between Cantabria Avenue near Banyan Elementary to Muscat Place (city of Rancho Cucamonga)
- East sidewalk on Amethyst Avenue south of Apricot Avenue to Highland Avenue (city of Rancho Cucamonga)
- Thompson Creek Road trail between Indian Hill Avenue and Mountain Avenue (city of Claremont)

Air Transportation

The Rialto Municipal Airport is 1.7 miles to the south of the Rialto Pipeline. The Cable Airport is approximately 1 mile south of the Rialto Pipeline. There are no private airstrips in the Rialto Pipeline study area.

Airport Land Use Plan for Rialto Municipal Airport

An airport land use plan (ALUP) is adopted for a public airport to provide for the orderly growth of the airport and the area surrounding the airport. The ALUP for the Rialto Municipal Airport was adopted in 1991 and is called the *Final Comprehensive Land Use Plan: Rialto Municipal Airport* (San Bernardino County ALUC 1991).

According to Figure III-7 of the ALUP for Rialto Municipal Airport, the Rialto Pipeline is just north and outside of the airport's safety zones, which are areas in the vicinity of the airport in which land use restrictions are established to protect the safety of the public. Because the Rialto Pipeline is outside the safety zones, the Rialto Airport ALUP is not applicable to the proposed program.

Airport Land Use Plan for Cable Airport

The ALUP for the Cable Airport was adopted in 1981 and is called the *Cable Airport Comprehensive Airport Land Use Plan* (West Valley Planning Agency ALUC 1981).

According to Figure 3 of the ALUP for Cable Airport, the Rialto Pipeline does not encroach into any of the airport's planning area boundaries. Therefore, the Cable Airport ALUP is not applicable to the proposed program.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency route has been identified in the study area for the Rialto Pipeline.

- **County of San Bernardino:** According to the San Bernardino County General Plan, Safety Element, there are county evacuation routes on I-210, I-15, I-215, and State Route 83 (SR-83) (Euclid Avenue). (San Bernardino County 2014)

4.13.2.4 Second Lower Feeder

The Second Lower Feeder begins at Metropolitan's Robert Diemer Water Treatment Plant in the city of Yorba Linda and ends 40 miles to the west in the city of Rolling Hills Estates. The pipeline begins by extending southwesterly through residential neighborhoods in the northwestern part of the city of Yorba Linda, crossing Valley View Avenue and Valley View Circle, then turning west to follow the length of Wabash Avenue to where the street intersects Prospect Avenue. The alignment follows Prospect Avenue south, continues past Imperial Highway, turns west onto Bastanchury Road, then proceeds along the westbound lanes of Bastanchury Road into the neighboring city of Placentia, crossing Rose Drive, McCormack Lane, and Valencia Avenue. After a 2-mile distance on Bastanchury Road, the pipeline turns south onto Brookhaven Avenue for 1 mile, briefly turns west onto Yorba Linda Boulevard for a 0.25-mile distance, then angles southwest onto Angelina Drive north of Kraemer Boulevard. The alignment proceeds beyond Morse Avenue, along Kraemer Boulevard for a 0.5-mile distance, then continues along the same bearing onto Angelina Drive, south of Kraemer Boulevard, and along the east side of Kraemer Middle School and Valencia High School campuses. Once reaching the end of Angelina Drive 1.5 miles to the south, the alignment proceeds south beyond the railroad tracks and turns slightly southeast through an industrial park and toward Metropolitan's Carbon Creek Pressure Control Structure facility in the city of Anaheim. Beginning from this facility for a distance of approximately 9 miles, the pipeline is steel lined. At approximately the 15.7-mile mark, the pipeline reverts to PCCP along Ball Road, just east of Dale Avenue. The alignment continues west on Ball Road for four cities, crossing several major north-south arterials in Anaheim, Buena Park, Cypress, and Los Alamitos before crossing Interstate 605 (I-605) in the city of Long Beach (where Ball Road becomes Wardlow Road). At the San Gabriel River, the alignment turns north for a 0.5-mile distance, turns west to follow Keynote Street, crosses Studebaker Road and Los Coyotes Diagonal, turns north again on Iroquois Avenue, and then turns west once more along Conant Street. The pipeline traverses several blocks of residential neighborhoods, following Conant Street for 3 miles before turning south onto Clark Avenue. Just north of the Fire Station driveway, the pipeline turns west and follows a utility easement along the northern boundary of the Skylinks Golf Course, crosses Lakewood Boulevard, continues through the Long Beach Airport, then angles northwest to begin a westerly alignment along Bixby Road. The Bixby Road portion of the pipeline extends just over 3.5 miles through residential neighborhoods situated between the airport and Interstate 710 (I-710). At the west end of Bixby Road, the alignment jogs to the north and west across I-710 and proceeds along Carson Street for 5.5 miles through the neighboring city of Carson. Just before reaching the undercrossing at the Carson Street/Interstate 405 (I-405) interchange, the alignment turns south through a residential block on Acarus Avenue, then angles southwest to cross I-405 and the adjacent flood control channel. Just west of I-405, the pipeline proceeds westward along 220th Street for 6.5 miles, crossing Avalon Boulevard, Dolores Street, Main Street, Figueroa

Street, and Interstate 110 (I-110). Beyond I-110 the alignment continues on 220th Street through West Carson (unincorporated Los Angeles County), crossing intersections at Vermont Avenue and Normandie Avenue before reaching Western Avenue where it joins with the Sepulveda Feeder from the north. Beginning from the intersection of Western Avenue and 220th Street, the pipeline proceeds south, where the jurisdictions of the cities of Torrance and Los Angeles are to the west and east of the roadway, respectively. The pipeline continues south along Western Avenue, crossing 223rd Street, 228th Street, Sepulveda Boulevard, and 235th Street before reaching 238th Street, where Western Avenue is located completely within the city of Los Angeles boundary. The alignment then crosses Lomita Boulevard, Pacific Coast Highway, and Anaheim Street before entering the city of Lomita just south of 261st Street. The pipeline turns west at 262nd Street for 1 mile, then turns south at Oak Street toward the neighboring city of Rolling Hills Estates. Beginning at the Oak Street PCS facility, the pipeline turns southward onto Palos Verdes Drive East for a distance of 1 mile, crossing Palos Verdes Drive North and terminating at Metropolitan's Palos Verdes Reservoir.

Vehicular Transportation

Table 4.13-4 provides an inventory of the types of streets in which the existing Second Lower Feeder is located.

Table 4.13-4. Inventory of Streets in Second Lower Feeder Study Area

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Yorba Linda	Valley View Avenue	44	Primary Arterial	2	Raised	---	None	---	---	Sidewalks	West	50	
Yorba Linda	Valley View Circle	44	Local Street	2	Raised	---	Maintenance only	---	---	Sidewalks, trails	South	44	
Yorba Linda	Wabash Avenue	44	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks, trails	West	1,300	
Yorba Linda	Prospect Avenue	40	Local Street	2	---	1 side (west)	Commercial Industrial	---	---	Sidewalks	South	2,650	Crosses Imperial Highway
Yorba Linda	Imperial Highway	100	Modified Major Arterial	6	Raised; 2-way left-turn lanes	---	Commercial	OCTA 20	---	Sidewalks	South	135	State Route 90 Crosses roadway briefly
Yorba Linda	Bastanchury Road	64	Modified Primary Arterial	4	2-way left-turn lanes	---	Limited (community, church)	---	Class II	Sidewalks	West	2,400	Western city limit
Placentia	Bastanchury Road	64	Modified Primary Arterial	4	2-way left-turn lanes	1 side	Residential (south side)	---	---	Sidewalks	West/Southwest	4,600	Crosses McCormack Lane, Valencia Avenue; turns at Brookhaven Avenue
Placentia	Brookhaven Avenue	40	Local Street	2	---	---	Multiple (residential)	---	---	Sidewalks	South	2,600	Brookhaven Elementary School, traverses back of El Dorado High School athletic fields
Placentia	Yorba Linda Boulevard	84	Modified Major Arterial	4	Raised	---	Medical-dental office	OCTA 26	---	Sidewalks	Southwest	700	Turns south just east of Palm Drive
Placentia	North Angelina Drive	32	Local Street	2	---	---	Commercial	---	---	Sidewalks	Southwest	1,000	
Placentia	North Kraemer Boulevard	84	Modified Major Arterial	4	Raised	---	Limited	OCTA 129	---	Sidewalks	Southwest	1,500	
Placentia	North Angelina Drive	40	Local Street	2	---	---	Residential, school	---	---	Sidewalks	Southwest	3,700	Crosses East Chapman Avenue Kraemer Middle School at North Angelina Drive/Alta Vista Street
Anaheim	North Community Drive	40	Local Street	2	---	2 sides	Residential alley access	---	---	Sidewalks	Southeast	1,200	
Anaheim	Ball Road	84	Major Arterial	4	2-way left-turn lanes	2 sides	Residential Commercial	OCTA 46	Class II	Sidewalks	West	14,700	Crosses Dale Avenue, Beach Boulevard, Western Avenue, Knott Avenue
Buena Park	Ball Road	72	Primary Highway	4	2-way left-turn lanes	---	None	OCTA 46	Class II	Sidewalks	West	650	
Cypress	Ball Road	84	Major Highway	4	Raised	---	Commercial	OCTA 46	Class II	Sidewalks	West	14,700	Crosses Valley View Street, Walker Street, Moody Street, Denni Street, Bloomfield Street
Los Alamitos	Ball Road	84	Principal Arterial	4	Paved	---	None	---	Class II	Sidewalks	West	1,350	50% off-street
Long Beach	Wardlow Road	70	Minor Avenue	4	Raised	---	None	LBT 102	Class II	Sidewalks	West	6,150	Briefly crosses Studebaker Road
Long Beach	East Keynote Street	36	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	1,750	
Long Beach	Studebaker Road	74	Minor Avenue	4	None/Raised	---	None	LBT 173	Class II	Sidewalks	West	115	Briefly crosses Studebaker Road
Long Beach	East Keynote Street	36	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	1,850	
Long Beach	Los Coyotes Diagonal	74	Boulevard	4		---	Residential (east side)	---	---	Sidewalks	West	85	

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Long Beach	Iroquois Avenue	32	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	North	650	
Long Beach	East Conant Street	36-56	Neighborhood Collector	2		2 sides	Multiple (residential)	---	---	Sidewalks	West	8,400	Crosses Palo Verde Avenue, Woodruff Avenue, Bellflower Boulevard
Long Beach	Clark Avenue (service road)	28	Local Street	2	---	1 side	Residential	---	---	Sidewalk (east side)	South	600	
Long Beach	Lakewood Boulevard	100	Regional Corridor	8	Raised	---	None	LBT 111	---	Sidewalks	West	115	State Route 19
Long Beach	Bixby Road	60	Neighborhood Collector	2	---	2 sides	Industrial Residential	---	Class II	Sidewalks	West	10,000	Crosses Cherry Avenue, Orange Avenue, Atlantic Avenue, Long Beach Boulevard
Long Beach	Country Club Drive	40	Local Street	2	---	2 sides	None	---	---	Sidewalks	North	310	
Long Beach	West San Antonio Drive	40	Minor Avenue	2	---	2 sides	None	---	---	Sidewalks	Southwest	480	
Long Beach	Del Mar Avenue	40	Local Street	2	---	2 sides	None	---	---	Sidewalks	Northwest	1,300	
Carson	West Carson Street	64	Major Highway	4	Raised; 2-way left-turn lanes/center lane	2 sides	Multiple (commercial, office, industrial)	LBT 191 LBT 192 MTA 202	---	Sidewalks	West	10,300	Crosses Alameda Street overcrossing, Wilmington Avenue
Carson	Acarus Avenue	40	Local Street	2	---	2 sides	Residential	---	---	Sidewalks	South	700	
Carson	East 220 th Street	36	Collector	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	10,200	Crosses Avalon Boulevard, Main Street, Interstate 120/Figueroa Street interchange
Los Angeles County	East 220 th Street	36	Major Collector	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	3,400	Harbor-UCLA Medical Center on north side
Los Angeles/Torrance	Western Avenue	84	Major Highway Class II	4	Raised	2 sides	Commercial	GTrans 2	---	Sidewalks	South	6,900	Crosses 223 rd Street, Sepulveda Boulevard
Los Angeles	Western Avenue	84	Major Highway Class II	4	Raised	2 sides	Commercial Residential	GTrans 2 MTA 205	---	Sidewalks	South	8,550	Crosses 238 th Street, 242 nd Place, 247 th Street, Lomita Boulevard, 253 rd Street, Pacific Coast Highway, Anaheim Street
Lomita	Western Avenue	84	Major Highway	4	Raised	2 sides	Commercial Industrial	---	---	Sidewalks	South	400	Crosses 262 nd Street
Lomita	262 nd Street	40	Collector Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	West	2,500	60-foot jog in alignment at Eshelman Avenue/Appian Way
Lomita	Oak Street	40	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	Southwest	330	
Rolling Hills Estates	Palos Verdes Drive East	32	Arterial	2	2-way left-turn lanes/center lane	---	Limited	---	---	---	South	4,600	Crosses Palos Verdes Drive North

Transit and Rail

The Second Lower Feeder traverses both Orange County and Los Angeles County. Within Orange County limits (Yorba Linda, Placentia, Anaheim, Buena Park, Cypress, Los Alamitos), OCTA owns and operates the majority of all transit and rail services. Within the limits of Los Angeles County (Long Beach, Carson, West Carson/Los Angeles County, Los Angeles, Torrance, Lomita, Rolling Hills Estates), local fixed route and intercity transit is offered by several agencies, such as MTA, Long Beach Transit (LBT), and GTrans (formerly Gardena Municipal Bus), which provides bus services through the South Bay. The following bus lines are within the vicinity of the Second Lower Feeder alignment.

- OCTA Line 20 (Imperial Highway—city of Yorba Linda)
- OCTA Line 26 (Brookhaven Avenue—city of Placentia)
- OCTA Line 46 (Ball Road—cities of Anaheim, Buena Park, and Cypress)
- OCTA Line 129 (Kraemer Boulevard—city of Placentia)
- LBT Line 102 (Wardlow Road—city of Long Beach)
- LBT Line 111 (Lakewood Boulevard—city of Long Beach)
- LBT Line 173 (Studebaker Road—city of Long Beach)
- LBT Line 191/192 and MTA 202 (Carson Street—city of Carson)
- GTrans Line 2 and MTA Line 205 (Western Avenue—cities of Los Angeles and Torrance)

Bicycle Facilities

There are several bikeway facilities in the vicinity of the Second Lower Feeder. The following streets contain designated Class II bikeways (on-street marked bicycle lanes).

- Bastanchury Road (city of Yorba Linda)
- Ball Road/Wardlow Road (cities of Anaheim, Buena Park, Cypress, Los Alamitos, and Long Beach)
- Studebaker Road (city of Long Beach)
- Los Coyotes Diagonal (city of Long Beach)
- Bixby Road (city of Long Beach)

Pedestrian Facilities

A survey of the existing roadside conditions revealed that nearly all streets and highways aligned over and/or crossing the Second Lower Feeder contain paved pedestrian sidewalks along the roadside (with equestrian trails in the city of Yorba Linda). Only Clark Avenue provides sidewalks on only one side of the street; however, Clark Avenue where the pipeline aligns functions primarily as a service road. The only two pedestrian facilities within or near the centerline of the Second Lower Feeder alignment are the eastern sidewalk on Brookhaven Avenue (city of Placentia) and the northern sidewalk on 220th Street between Main Street and Dolores Street (city of Carson)

Air Transportation

The Joint Forces Training Base Los Alamitos is 1.2 miles south of the Second Lower Feeder. The pipeline runs through the northern portion of the Long Beach Municipal Airport. The Torrance Municipal Airport is 1.2 miles west of the pipeline.

Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos

The ALUP for the Joint Forces Training Base Los Alamitos is the *Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos* adopted in 2002 (ALUC of Orange County 2015).

According to Appendix D of the ALUP for the Joint Forces Training Base Los Alamitos, the Second Lower Feeder is not within the airport's runway protection zones or clear zones, but is within a notification area. The notification areas are established to ensure that structures that may affect day-to-day airport operations are not built in their vicinities.

Los Angeles County Airport Land Use Plan

The *Los Angeles County Airport Land Use Plan* covers numerous airports in Los Angeles County, including Long Beach Municipal Airport (Los Angeles County ALUC 2004).

According to the Airport Influence Area map for the Long Beach Municipal Airport in the ALUP, the Second Lower Feeder crosses the northern portion of the airport property, within the airport's planning boundary/airport influence area and a runway protection zone. Runway protection zones are intended to provide for the unobstructed passage of landing aircraft through the above airspace. These zones are the most critical safety areas under the approach paths and should be kept free of all obstructions. No structures or congregations of people are allowed within runway protection zones.

Emergency Response Plans and Emergency Evacuation Plans

The following emergency response and evacuation plans have been identified in the study area for the Second Lower Feeder.

- **City of Lakewood:** According to the City of Lakewood General Plan, Safety Element, all city arterials are recognized as primary evacuation routes. (City of Lakewood 1995)
- **City of Carson:** According to the City of Carson, Safety Element, there are city evacuation routes on Carson Street, Santa Fe Avenue, Alameda Street, Wilmington Avenue, Avalon Boulevard, Main Street, Figueroa Street, and Broadway in the Second Lower Feeder study area. (City of Carson 2006)
- **City of Los Angeles:** According to the City of Los Angeles General Plan, Safety Element, Normandie Avenue and Vermont Avenue are city disaster routes in the Second Lower Feeder study area. (City of Los Angeles 1996)
- **City of Lomita:** According to the City of Lomita General Plan, Safety Element, city evacuation routes are located on Pacific Coast Highway, Western Avenue, Narbonne Avenue, and Lomita Boulevard in the Second Lower Feeder study area. (City of Lomita 1998)
- **City of Rolling Hills Estates:** According to the Rolling Hills Estates General Plan, Safety Element, city emergency evacuation routes are located on Palos Verdes Drive East and Palos Verdes Drive North in the Second Lower Feeder study area. (City of Rolling Hills Estates 1992)

4.13.2.5 Sepulveda Feeder

The Sepulveda Feeder begins at the Jensen Water Treatment Plant in the city of Los Angeles near the Interstate 5 (I-5)/I-210 interchange and ends 41 miles to the south at its interconnection with the Second Lower Feeder in the city of Torrance. The Sepulveda Feeder leaves the Jensen facility on a southerly alignment, traveling through residential neighborhoods in the North Granada Hills area. Its first major arterial crossing is Rinaldi Street, where it turns directly south to follow the alignment of Hayvenhurst Avenue under State Route 118 (SR-118), then crosses major streets through the North Hills and Lake Balboa areas including San Fernando Mission Boulevard, Chatsworth Street, Devonshire Street, Lassen Street, Plumer Street, Nordhoff Street, Parthenia Street, Roscoe Boulevard, and Sherman Way. The pipeline also traverses the Van Nuys Airport in a north-south direction and angles across the southern portion of the airstrip at Hart Street toward Vanowen Street. Once on Vanowen Street, the pipeline turns south for 1.5 blocks on Valjean Avenue, then 0.75 mile east on Haynes Street where it crosses under I-405, then turns southeast on Blucher Avenue. Just south of the corner of Blucher Avenue and Erwin Street the pipeline turns directly south to cross the MTA Orange Line Busway/Bike Path before following another southeast alignment on Hatteras Street and toward Sepulveda Boulevard. The pipeline turns 90 degrees at the intersection of Hatteras Street/Sepulveda Boulevard then travels south for 4 miles on West Sepulveda Boulevard, crossing several major roadways north of the Sepulveda Pass including Burbank Boulevard, Magnolia Boulevard, US-101, Ventura Boulevard, I-405, and Mulholland Drive. South of the Sepulveda Pass, the pipeline follows North Sepulveda Boulevard along the west side of I-405, crossing under to the east side of the freeway at the I-405/Sepulveda Boulevard interchange near Metropolitan's facility at 1751 Sepulveda Boulevard. The Sepulveda Feeder pipeline continues south for 1 mile before turning west to cross under I-405, continuing for 1 mile south on Church Lane, then crossing back under to the east side of I-405 onto Sepulveda Boulevard. From this point, the pipeline travels for 6 miles through west Los Angeles and the city of Culver City, crossing major arterials and highways such as Wilshire Boulevard, Santa Monica Boulevard, Olympic Boulevard, Pico Boulevard, I-10, National Boulevard, Palms Boulevard, Venice Boulevard, Washington Boulevard, Culver Boulevard, and Jefferson Boulevard before turning east through the Fox Hills Mall via Hannum Avenue toward southeast Culver City. The pipeline then travels southeast, meandering through 5.5 miles of residential neighborhoods in the cities of Los Angeles and Inglewood before aligning south along Van Ness Avenue, which serves as the boundary line between Inglewood and the city of Los Angeles and County of Los Angeles north of Interstate 105 (I-105). Major arterial crossings along this portion of the alignment include Manchester Avenue, Century Boulevard, and Imperial Highway. Once the pipeline crosses into the city of Hawthorne at Imperial Highway on Van Ness Avenue, it then crosses under I-105 and proceeds south beyond El Segundo Boulevard into the city of Gardena. The pipeline travels for 2 miles through the city of Gardena along Van Ness Avenue, crossing 135th Street, Rosecrans Avenue, and Marine Avenue before entering the city of Torrance just south of Redondo Beach Boulevard. The Sepulveda Feeder pipeline then travels for 2.7 miles south, crossing Artesia Boulevard, 182nd Street, I-405, and 190th Street, and then turns east for 0.25 mile at Del Amo Boulevard before turning south again onto Western Avenue, which serves as the boundary line between the cities of Torrance and Los Angeles. The alignment continues for 1.3 miles on Western Avenue before connecting with the Second Lower Feeder at 220th Street.

Vehicular Transportation

Table 4.13-5 provides an inventory of the types of streets in which the existing Sepulveda Feeder is located.

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Table 4.13-5. Inventory of Streets in Sepulveda Feeder Study Area

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Los Angeles	Woodley Avenue	40	Collector	2	---	---	Residential	---	---	Sidewalks	Southeast	1,450	Briefly crosses 40-foot section of Knollwood Drive, Pineridge Drive
Los Angeles	Rinaldi Street	80	Major Highway Class II	4	2-way left-turn lanes	2 sides	Limited, school	MTA 236 MTA 237 MTA 239	Class II	---	South	80	Crosses roadway briefly
Los Angeles	Hayvenhurst Avenue	70	Secondary Arterial	4	---	2 sides	Residential Industrial	MTA 169	---	Sidewalks	South	30,000	Traverses through Van Nuys Airport
Los Angeles	Vanowen Street	64	Secondary Arterial	4	2-way left-turn lanes	2 sides	Multiple (residential, industrial)	MTA 165	---	Sidewalks	East	500	
Los Angeles	Valjean Avenue	44	Local Street	2	---	2 sides	Multiple (industrial)	---	---	Sidewalks	South	1,700	
Los Angeles	Haynes Street (west of I-405)	36	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalk (south side)	East	3,300	Briefly crosses Haskell Avenue, I-405, Aqueduct Avenue
Los Angeles	Haynes Street (east of I-405)	36	Local Street	2	---	2 sides	Multiple (residential)	---	---	---	East	300	
Los Angeles	Blucher Avenue	36	Local Street	2	---	---	Multiple (residential)	---	---	---	South	1,300	Briefly crosses 90-foot section of Victory Boulevard
Los Angeles	West Sepulveda Boulevard (Hatteras Street to US-101)	88	Major Highway Class II	6	2-way left-turn lanes	2 sides	Multiple (commercial/retail)	MTA 154 MTA 234 MTA 734 MTA 788	---	Sidewalks	South	5,900	Near I-405/Burbank interchange Near US-101/Sepulveda Boulevard interchange
Los Angeles	West Sepulveda Boulevard (US-101 to I-405)	88	Major Highway Class II	6	2-way left-turn lanes	---	Multiple (commercial/retail)	MTA 183 MTA 233 MTA 234 MTA 734 MTA 477 LADOT CE 549	---	Sidewalks	South	4,500	Near US-101/Sepulveda Boulevard interchange Near I-405/Greenleaf Street interchange Near I-405/Ventura Boulevard interchange
Los Angeles	West Sepulveda Boulevard (I-405 to Mulholland Drive)	60	Major Highway Class II	4	2-way left-turn lanes	---	Multiple (residential) (east side)	MTA 234 MTA 734	Class II	Some sidewalks	Southwest	8,000	Bypasses curved portion between Valley Meadow Road and Dartford Way
Los Angeles	North Sepulveda Boulevard (Mulholland Drive to 1751 Plant)	50-64	Major Highway Class II	4	Paved; 2-way left-turn lanes/center lane	---	None	MTA 234 MTA 734	---	---	South	12,200	Bypasses portion between tunnel and I-405 southbound ramps south of Skirball Center Drive
Los Angeles	North Sepulveda Boulevard (1751 Plant to Moraga Drive)	50-60	Major Highway Class II	4	Paved/center lane	---	None	MTA 234 MTA 734	---	---	Southeast	6,450	Bypasses portion between tunnel and I-405 southbound ramps south of Skirball Center Drive
Los Angeles	Beverly Park Drive	24	Private road	2	---	---	Getty Center South Building	---	---	---	Southeast	400	
Los Angeles	North Church Lane	56	Collector	3	Center Lane/ Raised/ Paved	---	Limited	MTA 2 MTA 302 MTA 234 MTA 734	---	Sidewalks	Southeast	650	Near I-405 southbound off-ramps at Church Lane
Los Angeles	South Church Lane	32	Collector	2	---	1 side	None	MTA 2 MTA 302	---	Sidewalk (west side)	Southeast	4,800	

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Los Angeles	South Sepulveda Boulevard (Los Angeles Cemetery to I-10)	60	Major Highway Class II	4	2-way left-turn lanes	Metered	Multiple (commercial, office)	MTA 2 MTA 302 MTA 6 MTA 6R Expo 806	---	Sidewalks	Southeast	13,850	Crosses Wilshire Boulevard, Ohio Avenue, Santa Monica Boulevard, Exposition Boulevard
Los Angeles	South Sepulveda Boulevard (I-10 to Metropolitan’s 3816 Tuller facility)	64	Major Highway Class II	4	2-way left-turn lanes/ center lane	2:30 p.m.– 12 a.m.	Multiple (commercial, office)	MTA 6 MTA 6R MTA 8	Class II	Sidewalks	Southeast	8,500	Crosses National Boulevard, Palms Boulevard, Venice Boulevard
Los Angeles	South Sepulveda Boulevard (Metropolitan’s 3816 Tuller facility to Ballona Creek)	75	Major Highway Class II	4	2-way left-turn lanes	1-hour, metered	Multiple (commercial)	MTA 6 MTA 6R MTA 8 MTA 7 LADOT CE 437	---	Sidewalks	Southeast	6,150	Crosses Washington Place/ Boulevard, Culver Boulevard
Culver City	South Sepulveda Boulevard (Ballona Creek to Bush Way)	84	Major Highway	4-5	2-way left-turn lanes	Metered	Multiple (commercial)	MTA 3 MTA 4 MTA 6 MTA 6R	---	Sidewalks	Southeast/ south	2,950	Crosses Jefferson Boulevard, Sawtelle Boulevard
Culver City	Bush Way	40	Local Street	2	---	2 sides	Alleys	---	---	Sidewalks	East	300	
Culver City	Hannum Avenue	40-75	Local Street	2-4	Paved, 2-way left-turn lanes/center lane	2 sides (north segment)	Multiple (residential)	MTA 3 MTA 110	---	Sidewalk (north side)	South/ southeast/ east	5,150	Residential street north of Playa Street; Westfield Mall South of Playa; Crosses Slauson Avenue
Culver City	Cambridge Way	48	Local Street	2	---	2 sides	Residential access	---	---	Sidewalks	Southeast	350	
Los Angeles County	61 st Street	36	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	Southeast	1,500	
Los Angeles County	South Halm Avenue	36	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	Southeast	700	
Los Angeles County/Los Angeles	64 th Street	50	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	Southeast/ east	1,600	Los Angeles city limits east of Flight Avenue (350 feet west of La Cienega Boulevard)
Los Angeles	South La Cienega Boulevard	100	Major Highway Class II	6	Raised	---	None	---	---	Sidewalks	South	850	Located mostly off-street; crosses roadway at Fairview Boulevard
Inglewood	West/East Fairview Boulevard	50	Collector	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	East	8,750	Traverses large residential neighborhood; crosses La Brea Avenue
Inglewood	North Gay Street/North Long Street	30	Local Street	2	---	1 side	Residential	---	---	Sidewalks	Southeast	2,600	130-foot jog in alignment at East 68 th Street; Los Angeles County Department of Public Social Services building at south end
Inglewood/Los Angeles	West Florence Avenue	60	Major Arterial	4-6	2-way left-turn lanes	9 a.m.– 4 p.m. 7 p.m.– 7 a.m.	Commercial	MTA 40 MTA 111 MTA 311	---	Sidewalks	East	1,200	West of West Boulevard—Inglewood East of West Boulevard—Los Angeles
Inglewood/Los Angeles	South Victoria Avenue	32	Local Street	2	---	2 sides (no parking Tuesday 12–2 p.m.	Multiple (residential)	---	---	Sidewalks	South	1,350	North of 74 th Street—Los Angeles South of 74 th Street—Inglewood (west side) and Los Angeles (east side)
Los Angeles	West 76 th Street	36-40	Local Street	2	---	2 sides	Multiple (residential)	MTA 210	---	Sidewalks	East	3,300	Traverses 5 blocks of residential neighborhoods; turns at 5 th Avenue roundabout

Agency	Roadway Information							Modal Facilities			Pipeline Alignment Information		
	Street	Width (feet)	Type (per General Plan)	Lanes	Median	Parking Lanes	Driveway Access	Transit Routes	Bicycle Routes	Pedestrian Facilities	Direction	Length (feet)	Notes
Inglewood	South 5 th Avenue	40	Collector	2	---	2 sides	Residential	---	---	Sidewalks	South	2,400	Warren Lane Elementary School; 8 blocks of residential neighborhood; turns at park/roundabout
Inglewood/Los Angeles	Byrd Avenue South	56	Local Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	Southeast	1,600	Crosses roadway briefly at signalized intersection @ Van Ness Avenue
Inglewood/Los Angeles	West Manchester Avenue	76	Major Arterial	4-5	Raised	2-hour (9 a.m.–6 p.m.)	Commercial	MTA 115 MTA 442	---	Sidewalks	Southeast	85	
Inglewood/Los Angeles	South Van Ness Avenue	48	Major Arterial	2	2-way left-turn lanes	2 sides	Multiple (residential)	MTA 209	---	Sidewalks	South	5,200	7 residential blocks; west side—Inglewood; east side—Los Angeles
Inglewood/Los Angeles County	Century Boulevard	75	Major Arterial	6	2-way left-turn lanes	1 side (north)	Multiple (residential)	MTA 117 MTA 209	---	Sidewalks	South	75	Crosses roadway briefly
Inglewood/Los Angeles County	South Van Ness Avenue	54	Major Arterial	4	---	2 sides	Multiple (residential)	MTA 209	---	Sidewalks	South	5,200	7 residential blocks; west side—Inglewood; east side—Los Angeles County
Inglewood/Los Angeles County	Imperial Highway	75	Major Arterial	6	Raised	---	None	MTA 5 MTA 120 MTA 209	---	Sidewalks	South	100	Crosses roadway briefly
Hawthorne	South Van Ness Avenue	54-75	Major Arterial	4	---	2 sides	Limited	MTA 5 MTA 209	---	Sidewalks	South	5,200	Near Cimarron Elementary School, Chester Washington Golf Course, I-105 overcrossing
Gardena	El Segundo Boulevard	80	Arterial	6	2-way left-turn lanes/ paved	---	Commercial	MTA 5 MTA 209 TT 2	---	Sidewalks	South	100	Crosses roadway briefly
Gardena	South Van Ness Avenue	60	Major Collector	4	---	2 sides	Residential Commercial	MTA 5	---	Sidewalks	South	11,100	Crosses 132 nd Street, 135 th Street, 139 th Street, Rosecrans Avenue, 147 th Street, Marine Avenue, 154 th Street, 156 th Street, Manhattan Beach Boulevard
Gardena	Rosecrans Avenue	80	Arterial	6	Raised	---	Commercial Industrial	MTA 125	---	Sidewalks	South	100	Crosses roadway briefly
Gardena	Marine Avenue	64	Major Collector	4	---	2 sides	Residential Commercial	---	---	Sidewalks	South	70	Crosses roadway briefly
Gardena	Redondo Beach Boulevard	80	Arterial	4	Paved	2 sides	Commercial	MTA 5	---	Sidewalks	South	100	Crosses roadway briefly
Torrance	South Van Ness Avenue	54	Minor Arterial	4	Center lane/2-way left-turn lanes	2 sides	Residential School Commercial Industrial	MTA 5 MTA 130 MTA 344	---	Sidewalks	South	14,100	Crosses 166 th Street, Artesia Boulevard, 182 nd Street, I-405 undercrossing, 190 th Street; turns at Del Amo Boulevard
Torrance	West Artesia Boulevard	90	Major Arterial	6	Raised	2 sides	Residential Commercial	MTA 130 MTA 344	---	Sidewalks	South	110	Crosses roadway briefly
Torrance	Del Amo Boulevard	64	Major Arterial	4	2-way left-turn lanes	2 sides	Multiple (industrial)	---	---	Sidewalks	East	2,500	
Torrance	Western Avenue	84	Major Arterial	4-5	Raised	1 side	Commercial Residential	GTrans 2	---	Sidewalks	South	6,850	Crosses Torrance Boulevard, Carson Street; ends at West 220 th Street
Torrance	Torrance Boulevard	120	Major Arterial	4	Raised	---	Residential Industrial	TT 1 TT 4	---	Sidewalks	South	140	Crosses roadway briefly
Torrance	Carson Street	70	Major Arterial	4	2-way left-turn lanes	1 side	Commercial Industrial	TT 3 TT R3	---	Sidewalks	South	90	Crosses roadway briefly
Torrance	West 220 th Street	32	Street	2	---	2 sides	Multiple (residential)	---	---	Sidewalks	South	25	Crosses roadway briefly; joins Second Lower Feeder

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Transit and Rail

The Sepulveda Feeder traverses several communities in the city of Los Angeles, within which MTA provides the majority of public transportation services. Of the five distribution systems, the Sepulveda Feeder pipeline is within the highest concentration of MTA bus lines and also includes Los Angeles Department of Transportation (LADOT) Commuter Express (CE), GTrans and Torrance Transit (TT) bus routes, and an MTA Expo rail line route (Expo). The following routes are close to the Sepulveda Feeder alignment.

- MTA 236/237/239 (Rinaldi Street—city of Los Angeles)
- MTA 169 (Hayvenhurst Avenue—city of Los Angeles)
- MTA 165 (Vanowen Street—city of Los Angeles)
- MTA 154/234/734/788 (West Sepulveda Boulevard, Hatteras Street to US-101—city of Los Angeles)
- MTA 183/233/234/734, 744/LADOT CE 549 (West Sepulveda Boulevard, US-101 to I-405—city of Los Angeles)
- MTA 234/734 (West Sepulveda Boulevard, I-405 to Moraga Drive—city of Los Angeles)
- MTA 2/302/234/734 (North Church Lane—city of Los Angeles)
- MTA 2/302 (South Church Lane—city of Los Angeles)
- MTA 2/302/6/6R/Expo 806 (South Sepulveda, Los Angeles Cemetery to I-10—city of Los Angeles)
- MTA 6/6R/8 (South Sepulveda Boulevard, I-10 to Metropolitan's 3816 Tuller Avenue facility—city of Los Angeles)
- MTA 6/6R/8/7/LADOT CE 437 (South Sepulveda, 3816 Tuller Avenue to Ballona Creek—city of Los Angeles)
- MTA 3/4/6/6R (South Sepulveda Boulevard, Ballona Creek to Bush Way—city of Culver City)
- MTA 3/110 (Hannum Avenue—city of Culver City)
- MTA 40/111/311 (West Florence Avenue—cities of Inglewood/Los Angeles)
- MTA 210 (West 76th Street—city of Los Angeles)
- MTA 115/442 (West Manchester Avenue—cities of Inglewood/Los Angeles)
- MTA 209 (South Van Ness Avenue—cities of Inglewood/Los Angeles)
- MTA 117/209 (Century Boulevard—city of Inglewood/Los Angeles County)
- MTA 209 (South Van Ness Avenue—city of Inglewood/Los Angeles County)
- MTA 5/120/209 (Imperial Highway—city of Inglewood/Los Angeles County)
- MTA 5/209 (South Van Ness Avenue—city of Hawthorne)
- MTA 5/209, TT 2 (El Segundo Boulevard—city of Gardena)
- MTA 5 (South Van Ness Avenue—city of Gardena)

- MTA 125 (Rosecrans Avenue—city of Gardena)
- MTA 5 (Redondo Beach Boulevard—city of Gardena)
- MTA 5/130/344 (South Van Ness Avenue—city of Torrance)
- MTA 130/344 (West Artesia Boulevard—city of Torrance)
- GTrans 2 (Western Avenue—city of Torrance)
- TT 1/4 (Torrance Boulevard—city of Torrance)
- TT 3/R3 (Carson Street—city of Torrance)

Bicycle Facilities

In contrast to the transit-oriented nature of the transportation system through which the Sepulveda Feeder travels, there are many fewer on-street bikeway facilities in the vicinity of the pipeline. The following streets contain designated Class II bikeways (on-street marked bicycle lanes) along the Sepulveda Feeder pipeline.

- Rinaldi Street (city of Los Angeles)
- West Sepulveda Boulevard between I-405 and the Mulholland Drive bridge (city of Los Angeles)
- South Sepulveda Boulevard between I-10 and 3816 Tuller Avenue (city of Los Angeles)

Pedestrian Facilities

Most of the streets along the pipeline and also crossing the Sepulveda Feeder contain paved sidewalks for pedestrians. Certain areas with steep grades or those that intersect complex interchange areas have limited pedestrian access or none at all. The following pedestrian facilities are within or near the Sepulveda Feeder alignment.

- Off-street trails in Knowlwood Country Club (Granada Hills community in city of Los Angeles)
- East sidewalk on Hayvenhurst Avenue between Parthenia Street and Chase Street (city of Los Angeles)
- North sidewalks on Hannum Avenue between Playa Street at State Route 90 (SR-90)(city of Culver City)
- East sidewalk on Van Ness Avenue north of Marine Avenue (city of Gardena)

Air Transportation

The Sepulveda Feeder runs parallel and adjacent to the western side of the Van Nuys Airport. The Santa Monica Municipal Airport is approximately 1.1 miles west of the Sepulveda Feeder. The Hawthorne Municipal Airport is 0.5 mile west of the Sepulveda Feeder. There are no private airstrips in the Sepulveda Feeder study area.

Los Angeles County Airport Land Use Plan

Van Nuys Airport, Santa Monica Municipal Airport, and Hawthorne Airport are all covered by the *Los Angeles County Airport Land Use Plan*, adopted in 1991 (Los Angeles County ALUC 2004).

According to the ALUP's Airport Influence Area map for the Van Nuys Airport, the Sepulveda Feeder is in the airport's planning boundary/airport influence area, within the northern and southern runway protection zones. As discussed in Section 4.13.2.4 for the Long Beach Airport, runway protection zones are intended to provide for the unobstructed passage of landing aircraft through the above airspace. These zones are the most critical safety areas under the approach paths and should be kept free of all obstructions. No structures or congregations of people are allowed within runway protection zones.

According to the ALUP's Airport Influence Maps for Santa Monica Municipal Airport and Hawthorne Municipal Airport, the Second Lower Feeder is not within either airport's planning boundaries. Therefore, the sections of the ALUP for these airports are not applicable to the proposed program.

Emergency Response Plans and Emergency Evacuation Plans

The following evacuation routes have been identified in the study area for the Sepulveda Feeder.

- **Inglewood:** According to the Inglewood General Plan, Safety Element, city evacuation routes are located on La Cienega Boulevard, East Florence Avenue, Crenshaw Boulevard, and South Van Ness Avenue in the Sepulveda Feeder study area. (City of Inglewood 1995)

4.13.3 Regulatory Framework

4.13.3.1 Federal

The Americans with Disabilities Act of 1991

The American with Disabilities Act of 1991 is a federal civil rights act that prohibits discrimination against those with disabilities. The act covers employment, housing, and access to all public places whether they are privately or publicly owned or operated. Federal policies and procedures require that when pedestrian access is restricted, modified, or relocated as a result of construction activities it must conform to the U.S. Access Board's American with Disabilities Act Accessibility Guidelines.

4.13.3.2 State

Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA (January 20, 2016)

CEQA serves as the standard for managing project-generated environmental impact thresholds in California. Some agencies have developed and adopted a modified version of the CEQA manual to better represent local community needs and to address recent legislative changes due to Senate Bill (SB) 743. SB 743 requires that Metropolitan Planning Organizations (MPOs) and local agencies alike revisit their transportation impact analysis procedures to consider vehicle-miles traveled (VMT) as the primary metric for evaluating transportation impacts under CEQA. In addition, the effects of SB 743 will result in agencies adopting the use of one or more standardized models for estimating VMT, as a product of project location, design, and travel choices, with a broader focus on multimodal transportation solutions rather than those suited only for automobile-centric travel. Under SB 743 lead agencies may elect to be governed by the provisions of the proposed new section of the State CEQA Guidelines (Section 15064.3) to determine the transportation impact significance of

development projects (based on VMT and/or proximity to major transit stops and existing high-quality transit corridors) or transportation projects (based on induced vehicle travel compared with the existing conditions). In the interim, project impacts will be defined in accordance with the current adopted standards by the controlling jurisdiction(s) where a project is located, and is required to conform. The California Department of Transportation's (Caltrans) Environmental Handbook, Volume I, Chapter 26 (traffic section) will be used as the default basis to identify and develop solutions to potential mobility and safety impacts due to the proposed construction activities on the surrounding street systems. Where the local or regional agency has identified alternative methodologies to analyze traffic impacts, the locally adopted model will be used.

Complete Streets Act (Assembly Bill 1358)

The California Complete Streets Act of 2008 requires circulation elements to address the transportation system from a multi-modal perspective. Assembly Bill (AB) 1358 states that streets, roads, and highways must "meet the needs of all users...in a manner suitable to the rural, suburban, or urban context of the general plan." Essentially, AB 1358 requires a circulation element to plan for all modes of transportation where appropriate including walking, biking, car travel, and transit. The Complete Streets Act also requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled.

4.13.3.3 Local

Regional and Local Southern California Association of Governments Regional Transportation Plan

Under federal law, MPOs and Regional Transportation Planning Agencies are required to prepare a 20-year Regional Transportation Plan (RTP), which is updated every 4 years. In this region, the Southern California Association of Governments (SCAG) is both the MPO and the Regional Transportation Planning Agency. Only projects and programs included in the RTP are eligible for federal and State funding. The focus areas of the RTP are: Active Transportation; Aviation; Environmental Mitigation; Goods Movement; Growth Forecasts; Highways and Arterials; Land Use; Passenger Rail; Transit; Transportation Demand Management (TDM); Transportation Finance; and Transportation Safety and Security. SCAG's plan takes into account operations and maintenance costs to ensure reliability, longevity, and cost effectiveness. In addition, the RTP will be supported by a combination of transportation and land use strategies that will help the region achieve State greenhouse gas emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and utilize resources more efficiently.

The Sustainable Communities Strategy is a new element of the RTP that demonstrates the integration of land use, transportation strategies, and transportation investments within the RTP. This new requirement was put in place by the passage of SB 375, with the goal of ensuring that the SCAG region can meet its regional greenhouse gas reduction targets set by the California Air Resources Board. On April 7, 2016, SCAG's Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy.

Orange County Congestion Management Plan

In June 1990, the passage of the Proposition 111 gas tax increase required California's urbanized areas—areas with populations of 50,000 or more—to adopt a Congestion Management Program (CMP). The following year, Orange County's local governments designated OCTA as the Congestion Management Agency (CMA) for the County. As a result, OCTA is responsible for the development, monitoring, and biennial updating of Orange County's CMP. The passage of AB 2419, in July 1996, provided local agencies the option to elect out of the CMP process without the risk of losing State transportation funding. However, local jurisdictions in Orange County expressed a desire to continue the existing CMP process, because the requirements were similar to those of the Orange County Measure M Growth Management Program and because it contributes to fulfilling federal requirements for the Congestion Management Process (23 CFR 450.320), prepared by SCAG. The OCTA Board of Directors affirmed the decision to continue with the existing CMP process on January 13, 1997. Although the CMP ended with the sunset of Measure M, the CMP remains relevant as an eligibility requirement under Measure M2. The CMP contributes to federal Congestion Management Process requirements, which is a systematic and regionally accepted approach for managing congestion. The federal Congestion Management Process provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs. The Congestion Management Process is also intended to serve as a systematic process that provides for consistent and effective integrated monitoring and management of the multimodal transportation system.

The goals of Orange County's CMP are to support regional mobility objectives by reducing traffic congestion, to provide a mechanism for coordinating land use and development decisions that support the regional economy, and to determine gas tax fund eligibility. To meet these goals, the CMP contains a number of policies designed to monitor and address system performance issues. OCTA developed the policies that make up Orange County's CMP in coordination with local jurisdictions, Caltrans, and the South Coast Air Quality Management District.

Traffic level of service (LOS) standards must be established for a system of highways and roadways. The highways and roadway system is designated by OCTA and includes, at minimum, all state highways and principal arterials. None of the designated facilities may be removed, and new state highways and principal arterials must be added, except if they are within an infill opportunity zone. The LOS must be measured using a 2015 CMP 7 method that is consistent with the Transportation Research Board's *Highway Capacity Manual* (HCM). The LOS standards must not be below LOS E, unless the LOS from the baseline CMP dataset were lower. If a CMP Highway System (CMPHS) segment or intersection does not meet the minimum LOS standard outside an infill opportunity zone, a deficiency plan must be adopted (subject to exclusions). The CMP contains traffic LOS standards for CMP intersections, as required by State legislation. During every odd year, OCTA collects traffic count data at all CMP intersections to demonstrate current LOS on the CMPHS.

- Local jurisdictions must maintain the LOS standard on all CMP intersections under their control.
- Local jurisdictions must review and provide any comments on the traffic count data to OCTA, in addition to submitting the LOS Monitoring Checklist.

As stated above, the Orange County CMP currently uses LOS standards for evaluating highway and roadway performance. With the passage of SB 743, OCTA will be required to revisit its transportation impact analysis procedures to consider VMT as the primary metric for evaluating traffic.

Smart Street Network

OCTA has designated all state highways and the OCTA-adopted Smart Street network as the CMPHS. The Smart Street network was adopted as part of Measure M. No designated highway or roadway may be removed, and all new state highways must be designated as part of the system, except when they occur in an infill opportunity zone (subdivision (c) of Section 65088.4). Infill opportunity zones are specific areas designated by a city or county for new compact or mixed use developments and close to transit. OCTA measures LOS at CMP intersections using the Intersection Capacity Utilization (ICU) methodology.

Level of Service Standards

ICU ranges are assigned an LOS grade from A to F to indicate decreasing performance. As required by CMP legislation, the LOS standard for CMPHS intersections is LOS E or better (i.e., an ICU of 1.00 or better). Intersections that had an LOS F in the 1992 CMP baseline are allowed to exceed the LOS E standard, but may not increase by more than 0.1 above the baseline ICU value. If an intersection is found to exceed the LOS standard and is not statutorily exempt, OCTA flags it as potentially deficient and the local jurisdiction must identify improvements necessary to meet the LOS standards.

Los Angeles County Congestion Management Program

The Los Angeles County CMP defines a network of state highways and arterials, LOS standards, and related procedures and provides technical justification for the approach. The CMP for Los Angeles County is prepared and maintained by MTA. The requirements of the Los Angeles County CMP became effective with voter approval of Proposition 111, which functions as a tool to link land use, transportation, and air quality decisions, to develop a partnership among transportation decision-makers in devising appropriate transportation solutions that include all modes of travel, and to propose transportation projects that are eligible to compete for State gas tax funds. The CMP also serves to consistently track trends during peak traffic hours at major intersections in the county and identify areas in great need of improvements where traffic congestion is worsening. The CMP requires that intersections that are designated as being officially monitored by the CMP be analyzed under the County's CMP criteria if the proposed project is expected to generate 50 or more peak hour trips on a CMP-designated facility.

The Los Angeles County CMP currently uses LOS standards for evaluating highway and roadway performance. With the passage of SB 743, MTA will be required to revisit its transportation impact analysis procedures to consider VMT as the primary metric for evaluating traffic.

San Bernardino County Congestion Management Program

The San Bernardino County CMP defines the network of state highways and arterials, LOS standards and related procedures, a process for mitigation of the impacts of new development on the transportation system, and technical justification for the approach for projects in San Bernardino County. The policies and technical information contained in the CMP document are subject to ongoing review, with updates required every 2 years, at a minimum. Opportunities for review are provided through meetings of the San Bernardino Association of Governments Transportation Technical Advisory Committee, policy committees, and Board of Directors.

Traffic Impact Analysis (TIA) reports must be prepared by local jurisdictions when local criteria and thresholds indicate they are necessary as a result of the estimated impact of project-generated

traffic (i.e., when a proposed change in land use, a development project, or, at local discretion, a group of projects are forecast to equal or exceed the CMP threshold of 250 two-way peak hour trips generated, based on trip generation rates published for the applicable use or uses in the Institute of Transportation Engineers' Trip Generation or other CMA-approved data source). All TIA reports must be copied to the CMA. If a TIA report is prepared by the local jurisdiction as stated above, and if the TIA report determines that the project would add 50 or more two-way peak hour trips to a CMP arterial within another jurisdiction or 100 two-way peak-hour trips to a freeway, that jurisdiction (and Caltrans, if a state highway) must be provided a copy of the TIA report by the permitting jurisdiction. However, these criteria are not intended to determine when a local jurisdiction prepares a TIA report.

The San Bernardino County CMP currently uses LOS standards for evaluating highway and roadway performance. With the passage of SB 743, the Technical Advisory Committee will be required to revisit its transportation impact analysis procedures to consider VMT as the primary metric for evaluating traffic.

4.13.4 Thresholds and Methodology

4.13.4.1 Thresholds of Significance

Table 4.13-6 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to transportation and traffic. It indicates which impacts must be analyzed in the PEIR for the proposed program.

Table 4.13-6. CEQA Thresholds for Transportation and Traffic

Threshold	
<i>Would the proposed program:</i>	
a.	Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths?
b.	Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks?
d.	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
e.	Result in inadequate emergency access?
f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

4.13.4.2 Methodology

Conflicts with Transportation Policies

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to long-term transportation plans, ordinances, or policies that establish measures of effectiveness for the performance of the transportation system.

Conflicts with Congestion Management Plan

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to long-term congestion management plans.

Change in Air Traffic Patterns

Existing public use airports are identified in Section 4.13.2. The potential for construction to affect air traffic patterns related to public and private airports is evaluated.

Hazards Due to a Design Feature

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to permanent designs of roadways. This analysis addresses potential impacts that may occur due to street or lane closures during construction.

Change in Emergency Access

Emergency access routes associated with existing emergency response plans and emergency evacuation plans are identified in Section 4.13.2. The potential of the projects included in the proposed program to impair the implementation of or physically interfere with these plans is evaluated.

Conflict with Public Transit, Bicycle, or Pedestrian Policies or Safety

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal long-term impacts related to public transit, bicycle facilities, or pedestrian facilities. This analysis addresses potential impacts on transit, bicycle, or pedestrian facilities or safety during construction.

4.13.5 Impacts Analysis

4.13.5.1 Program Analysis

Threshold TRA-A: Conflict with an Applicable Plan, Ordinance, or Policy that Establishes Measures of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-Motorized Travel, and Relevant Components of the Circulation System, Including, but not Limited to, Intersections, Streets, Highways and Freeways, and Pedestrian and Bicycle Paths

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to long-term transportation plans, ordinances, or policies that establish measures of effectiveness for the performance of the transportation system.

During the course of the pipeline rehabilitation work, work zones would be established within existing roadways, requiring lane closures, temporary signage, traffic cones and delineators, fencing, and barriers (i.e., concrete trapezoidal "K rail," or Caltrans Temporary Type K railing). Typically, a work zone would be established above the pipeline, enclosing the excavation area, which would be approximately 20 feet wide by 50 feet long. The work zone would include areas for access to the excavation site, storage of construction equipment and materials, and safety setbacks. The work zones would vary from site to site.

Where work zones are located within streets, temporary impacts on transportation would occur due to the reduction in roadway capacity. Impacts could include the following.

- Increased congestion and increased travel times due to reduction in the number or width of lanes
- Increased congestion and reduced access due to reduction of left-turn movements where work zones are within median or center lanes
- Reduced access to adjacent land uses where work zones block driveways or access roads
- Increased congestion on parallel roadways when traffic is detoured or when drivers voluntarily reroute to avoid construction areas
- Impacts on transit routes (primarily buses) when public transit is affected by construction or when transit stops are temporarily removed or relocated
- Impacts on bike routes if such facilities are detoured around work zones or forced to share the road with vehicular traffic
- Impacts on pedestrian routes if work zones require the use of sidewalks or the closure of sidewalks for safety reasons

In some cases, traffic and non-vehicular impacts would be localized. Where work zones are situated on local streets, only the immediate area would be affected by traffic, but the impacts on vehicular traffic, bike routes, pedestrians, parking, and access at each location could be significant during the 6- to 9-month construction period.

Where work zones are situated on major collectors, arterials, or highways, the impacts could affect traffic within a larger area. Local and through traffic could be affected by the disruptions in traffic patterns and the increased congestion. In some cases, a single roadway would be subjected to multiple disruptions, simultaneously or sequentially. Each work zone would typically affect traffic for approximately 6 to 9 months. Impacts of multiple excavation sites along the same roadway could occur at the locations listed in Table 4.13-7. In these circumstances, traffic impacts could result in significant disruptions for an extended period of time.

Table 4.13-7. Major Roadway Segments Requiring Multiple Excavation Sites

Roadway ¹	Jurisdiction	Roadway Classification ²	Length (feet)	Potential Max. No. of Excavations ³
Allen-McColloch Pipeline (none)				
Calabasas Feeder				
Owensmouth Avenue	City of Los Angeles	Collector	14,650	10
Fallbrook Avenue	City of Los Angeles	Major Highway Class II	17,650	12
Rialto Pipeline				
Banyon Street	City of Rancho Cucamonga	Collector	11,000	8
Second Lower Feeder				
Ball Road ⁴ Wardlow Road	City of Anaheim City of Buena Park City of Cypress City of Los Alamitos City of Long Beach	Major Arterial Primary Highway Major Highway Principal Arterial Minor Avenue	38,900	26
Bixby Road	City of Long Beach	Neighborhood Collector	10,000	7
West Carson Street	City of Carson	Major Highway	10,300	7
East 220 th Street	City of Carson Los Angeles County	Collector Major Collector	13,600	9
Western Avenue	City of Los Angeles City of Torrance City of Lomita	Major Highway Class II Major Highway	15,850	11
Sepulveda Feeder				
Hayvenhurst Avenue	City of Los Angeles	Secondary Arterial	30,000	20
West Sepulveda Boulevard North Sepulveda Boulevard South Sepulveda Boulevard	City of Los Angeles City of Culver City	Major Highway Class II Major Highway	68,800	46
South Van Ness Avenue	City of Inglewood City of Los Angeles City of Hawthorne City of Gardena City of Torrance Los Angeles County	Major Arterial Major Collector Minor Arterial	40,800	28
Notes:				
¹ Street name may vary but roadway is generally continuous.				
² Roadway classification may vary with jurisdiction				
³ Based on the minimum excavation spacing (1,500 feet). The actually number of excavation sites would likely be				

Roadway ¹	Jurisdiction	Roadway Classification ²	Length (feet)	Potential Max. No. of Excavations ³
lower due to the ability to maximize spacing and availability of off-road sites for excavation.				
⁴ Much of the pipeline in Ball Road in Anaheim is steel pipe rather than PCCP, requiring fewer excavations.				

The disruption of local and regional traffic caused by capacity reduction would ~~could~~ be significant at some locations, but the level will need to be determined at the project level when rehabilitation locations are known. Analysis to determine the individual projects' impacts on VMT and/or LOS may be required. Implementation of MM TRA-1 would reduce these impacts in some locations, but would not be feasible in all circumstances. Therefore, impacts on local and regional transportation would ~~may~~ be significant and unavoidable.

Proposed construction activities would generate construction-related vehicle trips on a daily basis on regional highways and local streets, although these would result in a relatively small increase in the daily traffic volume compared with the daily traffic volumes on most major arterials. Construction-related traffic would be temporary and is not expected to degrade operations on any of the major roadways significantly or on a long-term basis. Construction vehicle access to each pipeline would require lane closures at various access points on select streets, which could temporarily decrease road capacity and potentially increase vehicle travel time. Although construction traffic impacts at some locations may be temporarily significant, this impact would be reduced to less-than-significant levels with implementation of MM TRA-2.

Work zones and staging areas could also potentially displace existing parking at various locations (e.g., school and roadways). Such impacts could be significant. Implementation of MM TRA-3 would reduce these impacts to less-than-significant levels.

Mitigation Measures

MM TRA-1 Excavation Siting to Minimize Traffic Impacts

Excavation sites would be located to avoid traffic impacts to the maximum extent feasible ~~possible~~, considering the logistical requirements for pipeline rehabilitation (e.g., adequate spacing, pipeline logistics) and other impacts such as habitat and noise. To the maximum extent feasible ~~possible~~, the following will be considered when locating excavation sites:

- Whenever feasible ~~possible~~, where an off-road excavation site is available that would not result in other significant environmental impacts (e.g., to habitat, land uses), the off-road location will be used.
- Whenever feasible ~~possible~~, excavation sites in roadways will be situated within medians where available, especially if the medians are not used for left-turn lanes and do not include large street trees or other features that would be difficult to restore after rehabilitation.
- Whenever feasible ~~possible~~, excavation sites will be situated where the existing number of travel lanes can be maintained by temporarily removing parking (where adequate parking is available in the local area), temporarily relocating bike lanes to adjacent roadways, or temporarily restriping to provide narrower lanes (where they can be safely accommodated).
- Whenever feasible ~~possible~~, excavation sites will be situated so that adequate access to adjacent properties can be maintained, including left-turn entrances.

- Whenever ~~feasible possible~~, excavation sites will be situated so that bicycle and pedestrian circulation can be safely maintained, either by use of barriers or other safety features, or by providing alternative bicycle and pedestrian routes, with appropriate signage. ~~Where feasible, siting~~ Siting excavation near heavily used pedestrian areas, such as around schools, hospitals, and transit stops, will be avoided. ~~Where feasible, siting~~ Siting excavation in areas designated as safe routes to school will be avoided, or alternative routes will be developed ~~in coordination by working~~ with the local jurisdictions and school districts and providing appropriate signage, notification, and traffic controls.

MM TRA-2 Construction Traffic Control Plans

Metropolitan and/or its contractors will coordinate with the counties of Los Angeles, Orange, and San Bernardino as well as each local jurisdiction through which the pipelines travels (see tables above) to develop construction traffic control measures and procedures prior to the start of construction on each project. Measures to reduce temporary construction traffic and transportation impacts on city streets may include, but not be limited to, the following:

- Development of traffic control plans in coordination with local jurisdictions. The traffic control plans will be implemented and revised, as necessary and applicable.
- Provision of advance written notification of construction activities to residences and businesses around each construction site.
- Identification of travel routes and establishment of optimal arrival and departure times to minimize conflicts with residents, schools, and businesses, as feasible to minimize conflicts.
- Provisions to detour pedestrians and bicyclists ~~from for project activities impacts~~ near or ~~on the~~ sidewalks and bike lanes.
- Implementation of safety measures, such as signs, flaggers, cones, signage, and advance notice, as appropriate.
- Covering of all open trenches when not in use or at the end of each work day, as applicable.

MM TRA-3 Maintaining Adequate Parking

Whenever ~~feasible possible~~, excavation work zones and construction staging areas will not be sited in such a way that they result in inadequate availability of parking for adjacent land uses. If work zones or staging areas are planned for parking areas, a parking study will be completed by a qualified traffic consultant prior to construction to identify if adequate parking would be available locally.

Residual Impacts

Impacts related to temporary traffic disruptions and reduced capacity that would result from the proposed program would be significant at some locations, but the severity or location of the impacts cannot be determined at this time. Implementation of MM TRA-1 would reduce these impacts; however, residual impacts would still be significant and unavoidable.

Impacts related to construction traffic and parking that would result from the proposed program would be significant, but implementation of MM TRA-2 and MM TRA-3 would reduce these impacts so that residual impacts would be less than significant.

Threshold TRA-B: Conflict with an Applicable Congestion Management Program, Including, but not Limited to, Level-of-Service Standards and Travel Demand Measures or Other Standards Established by the County Congestion Management Agency for Designated Roads or Highways

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to long-term congestion management plans.

Various segments of the PCCP program pipelines are within CMP roadways. The CMP intersections along these streets are found in the respective CMPs of each governing MPO. Although construction-related trips would increase traffic on regional access highways and the major local streets that connect the project sites and highways, the project would generate only a small number of truck trips and employee commuter trips compared with the daily traffic volumes for these access roads, and individual projects would take place over a few months or years. Once rehabilitation is complete in the CMP roadway, the street would be restored to preconstruction conditions. There would be no long-term impacts on CMP roadways. Therefore, program-generated traffic would not be expected to affect current traffic operations substantially on highways and CMP roadways in the project vicinity. This impact would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold TRA-C: Result in a Change in Air Traffic Patterns, Including either an Increase in Traffic Levels or a Change in Location that Would Result in Substantial Safety Risks

The Second Lower Feeder is within a notification area for the ALUP for the Joint Forces Training Base Los Alamitos. Notification areas are established to ensure that structures that may affect day-to-day airport operations are not built in their vicinities. The proposed program would not include aboveground structures, except for small valve boxes and electrical panels. These structures would not affect airport operations. Therefore, the program would not result in a safety hazard for people residing or working in the vicinity of the Joint Forces Training Base Los Alamitos.

The Second Lower Feeder crosses under a portion of the Long Beach Municipal Airport and is within a runway protection zone. The Sepulveda Feeder runs parallel and adjacent to the western side of the Van Nuys Airport and is within the northern and southern runway protection zones. Runway protection zones are intended to provide for the unobstructed passage of landing aircraft through the above airspace. These zones are the most critical safety areas under the approach paths and should be kept free of all obstructions. No structures or congregations of people are allowed within runway protection zones. If any aboveground rehabilitation activities were to occur in these runway protection zones, construction equipment and/or personnel could interfere with airport operations. Also, where pipelines cross under runway or taxiway areas, there is the potential for below-ground construction activities to affect or be affected by airport operations and safety. Impacts would be

significant. Implementation of MM HAZ-5 in Section 4.8, *Hazards and Hazardous Materials*, would reduce potential impacts to less-than-significant levels.

The only permanent aboveground elements of the proposed program would be manhole covers, valve boxes, and electrical panels. If these aboveground elements were located in a runway protection zone, they could interfere with airport operations and safety. Impacts would be significant. Implementation of MM HAZ-6 in Section 4.8, *Hazards and Hazardous Materials*, would reduce potential impacts to less-than-significant levels.

Mitigation Measures

See MM HAZ-5 and MM HAZ-6 in Section 4.8, *Hazards and Hazardous Materials*.

Residual Impacts

Impacts that would result from the proposed program could be significant, but implementation of MM HAZ-5 and MM HAZ-6 in Section 4.8, *Hazards and Hazardous Materials*, would reduce these impacts so that residual impacts would be less than significant.

Threshold TRA-D: Substantially Increase Hazards Due to a Design Feature or Incompatible Uses

No obstacles that would affect sight distance are expected to result from project construction. The maneuvering of construction-related vehicles and equipment among general-purpose traffic on local streets could potentially cause safety hazards. In addition, temporary lane closures could affect non-motorized travel along affected road sections. These impacts could be significant. Implementation of MM TRA-2, described under Threshold TRA-A, would reduce these impacts to less-than-significant levels.

Mitigation Measures

See MM TRA-2 for Threshold TRA-A.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM TRA-2 would reduce these impacts so that residual impacts would be less than significant.

Threshold TRA-E: Result in Inadequate Emergency Access

As discussed in Section 4.13.2, *Existing Conditions*, in some cases the proposed program pipelines are within street rights-of-way that serve as emergency response routes and/or evacuation routes. If excavation were to take place in roadways that serve as emergency access and capacity of the affected streets was reduced during construction (such as reducing four lanes to two lanes), the ability of these streets to serve as emergency access routes may be impaired. This would be a significant impact during construction. Implementation of MM HAZ-7 in Section 4.8, *Hazards and Hazardous Materials*, would reduce these impacts to less-than-significant levels.

Once rehabilitation is complete, contractors would be required to return the street to preconstruction conditions. Therefore, there would be no long-term impacts on emergency access.

Mitigation Measures

See MM HAZ-7 in Section 4.8, *Hazards and Hazardous Materials*.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM HAZ-7 in Section 4.8, *Hazards and Hazardous Materials*, would reduce these impacts so that residual impacts would be less than significant.

Threshold TRA-F: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities or Otherwise Decrease the Performance or Safety of Such Facilities

Rehabilitation would require temporary lane closures on certain streets. Where the pipeline directly travels under Class II bikeways (on-street marked bicycle lanes) or encroaches on existing bus stops (e.g., MTA, OCTA, Omnitrans), work zones could interfere with bus services and bicycle traffic on these streets. Lane closures would be restricted to a short distance and would be short in duration, but temporary impacts could be significant. Implementation of MM TRA-1 and MM TRA-2, described under Threshold TRA-A, would reduce these impacts to less-than-significant levels.

Mitigation Measures

See MM TRA-1 and MM TRA-2 for Threshold TRA-A.

Residual Impacts

Impacts that would result from the proposed program would be significant, but implementation of MM TRA-1 and MM TRA-2 would reduce these impacts so that residual impacts would be less than significant.

4.13.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

Because the project consists of improvements to an existing underground water conveyance pipeline and no additional maintenance activities (beyond existing maintenance of the pipeline) would occur after construction, the project would have no long-term cumulative operational impacts on public roadways. Cumulative traffic impacts could occur where surface excavation and work zones are close to major development projects within the local setting. Implementation of MM TRA-1, MM TRA-2, and MM TRA-3, described under Threshold TRA-A, would reduce the program's contribution to short-term cumulative traffic impacts, but in some cases rehabilitation in roadways may result in a considerable contribution to cumulative traffic impacts.

Section 4.14

Utilities and Service Systems

4.14.1 Introduction

This section describes the existing conditions for utilities and service systems, the regulatory framework associated with utilities and service systems, the impacts on utilities and service systems that would result from the proposed program, and the mitigation measures that would reduce these impacts. As noted in the Initial Study, the proposed program would have potentially significant utilities and service systems impacts.

4.14.2 Existing Conditions

The study area for utilities and service systems is the pipeline alignments and the roadway rights-of-way in which the pipelines are located, plus 0.25 mile on either side of the pipeline. Figures 4.14-1 through 4.14-5 show the utilities study areas for each pipeline.

Roadway rights-of-way are typically used by a variety of utility providers for locating their linear components. These include overhead and underground power lines and telecommunication lines (including telephone, cable, fiber optics, etc.), underground sewer lines and water lines (including Metropolitan's feed lines, local water lines, and recycled water), storm drains and flood control channels, and gas and oil lines. Sometimes non-linear above-ground facilities associated with utility uses are also located in the study area, such as water treatment facilities, water reservoirs, electrical power substations, solar power facilities, and tank farms for oil storage.

4.14.2.1 Allen-McColloch Pipeline

In addition to the standard utilities within rights-of-way and easements identified above, the study area for the Allen-McColloch Pipeline includes such major utilities as a water treatment facility, water reservoirs, an electrical substation, major electrical transmission lines, and flood control channels and basins.

Areas along the Allen-McColloch Pipeline are served by the following landfills.

- Frank R. Bowerman, Irvine: anticipated closure date approximately 2053 (OC Waste & Recycling 2016a)
- Olinda Alpha, Brea: anticipated closure date approximately 2021 (CalRecycle 2016a)
- Prima Deschecha, San Juan Capistrano: anticipated closure date approximately 2067 (OC Waste & Recycling 2016b)

4.14.2.2 Calabasas Feeder

In addition to the standard utilities within rights-of-way and easements identified above, the study area for the Calabasas Feeder includes major electrical transmission lines and flood control channels.

Areas along the Calabasas Feeder are served by the following landfills.

- Burbank, La Crescenta: anticipated closure date approximately 2053 (CalRecycle 2016b)
- Calabasas, Calabasas: anticipated closure date approximately 2048 (accepts waste only from the Calabasas watershed, including the Calabasas Feeder study area) (Belmond 2013)
- Chiquita Canyon, Del Valle: anticipated closure date approximately 2019 (CalRecycle 2016c)
- Sunshine Canyon, Santa Clarita: anticipated closure date approximately 2037 (CalRecycle 2016d)

4.14.2.3 Rialto Pipeline

In addition to the standard utilities within rights-of-way and easements identified above, the study area for the Rialto Pipeline includes water treatment facilities, water reservoirs, electrical substations, major electrical transmission lines, and flood control channels.

Areas along the Rialto Pipeline are served by the following landfills.

- California Street Landfill, Redlands: anticipated closure date approximately 2042 (CalRecycle 2016e)
- Mid-Valley Landfill, Rialto: anticipated closure date approximately 2033 (CalRecycle 2016f)
- Burbank, La Crescenta: anticipated closure date approximately 2053 (CalRecycle 2016b)
- Chiquita Canyon, Del Valle: anticipated closure date approximately 2019 (CalRecycle 2016c)
- Sunshine Canyon, Santa Clarita: anticipated closure date approximately 2037 (CalRecycle 2016d)

4.14.2.4 Second Lower Feeder

In addition to the standard utilities within rights-of-way and easements identified above, the study area for the Second Lower Feeder includes major water treatment facilities, water reservoirs, electrical transmission lines, solar power facilities, and flood control channels and basins.

Areas along the Second Lower Feeder are served by the following landfills.

- Frank R. Bowerman, Irvine: anticipated closure date approximately 2053 (OC Waste & Recycling 2016a)
- Olinda Alpha, Brea: anticipated closure date approximately 2021 (CalRecycle 2016a)
- Prima Deschecha, San Juan Capistrano: anticipated closure date approximately 2067 (OC Waste & Recycling 2016b)
- Burbank, La Crescenta: anticipated closure date approximately 2053 (CalRecycle 2016b)
- Chiquita Canyon, Del Valle: anticipated closure date approximately 2019 (CalRecycle 2016c)
- Sunshine Canyon, Santa Clarita: anticipated closure date approximately 2037 (CalRecycle 2016d)

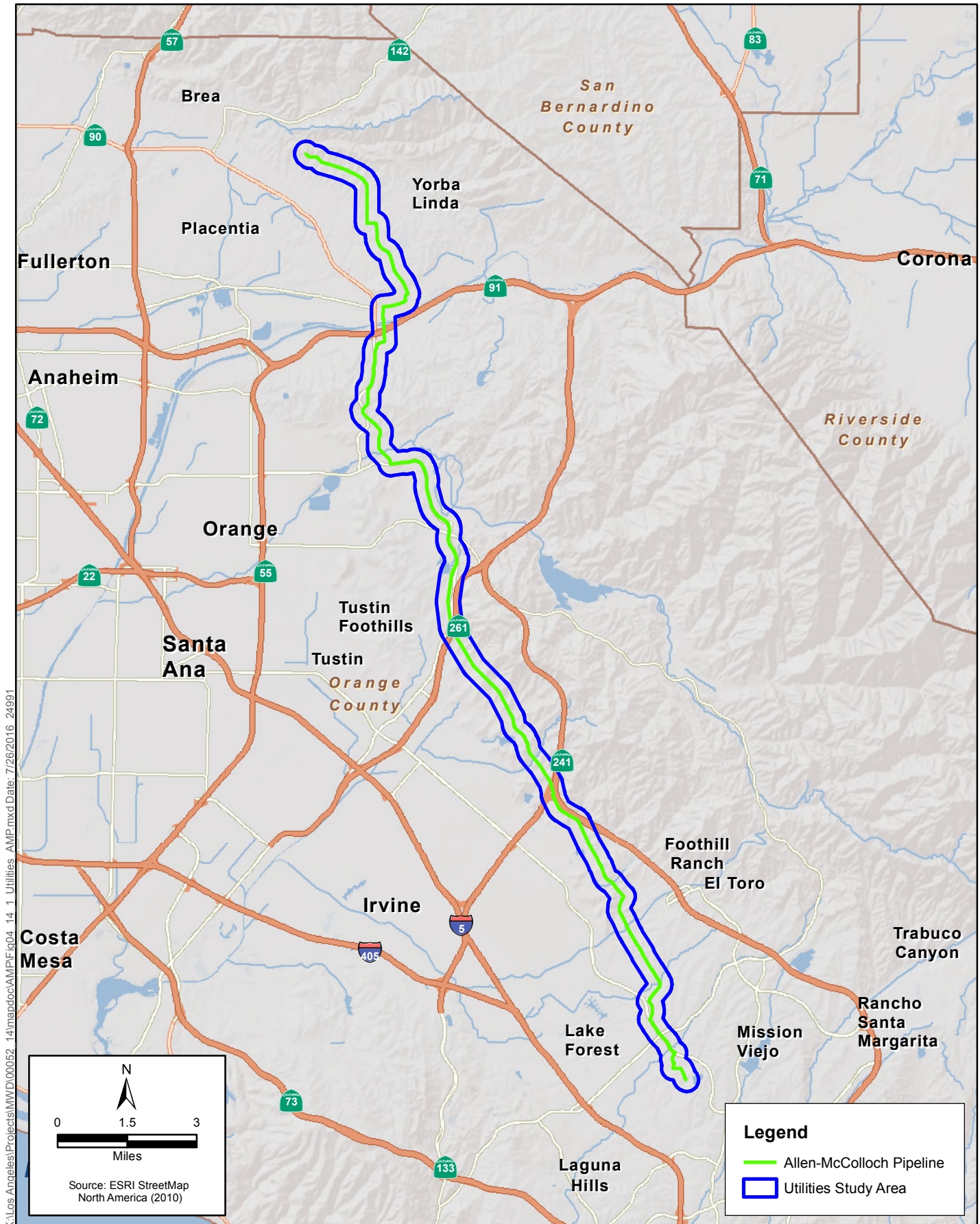


Figure 4.14-1
Allen-McColloch Pipeline Utilities Study Area
Metropolitan PCCP Program

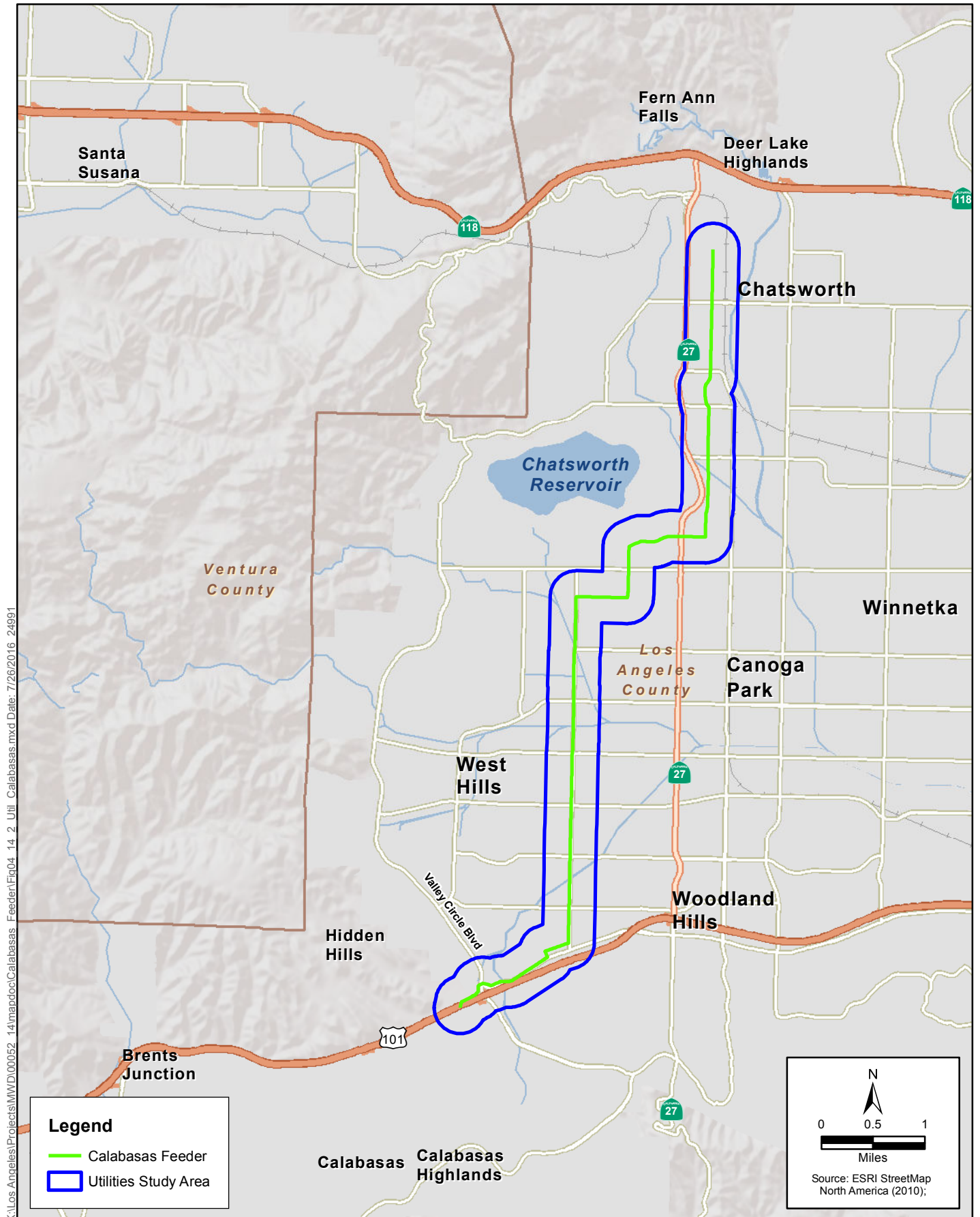


Figure 4.14-2
Calabasas Feeder Utilities Study Area
Metropolitan PCCP Program

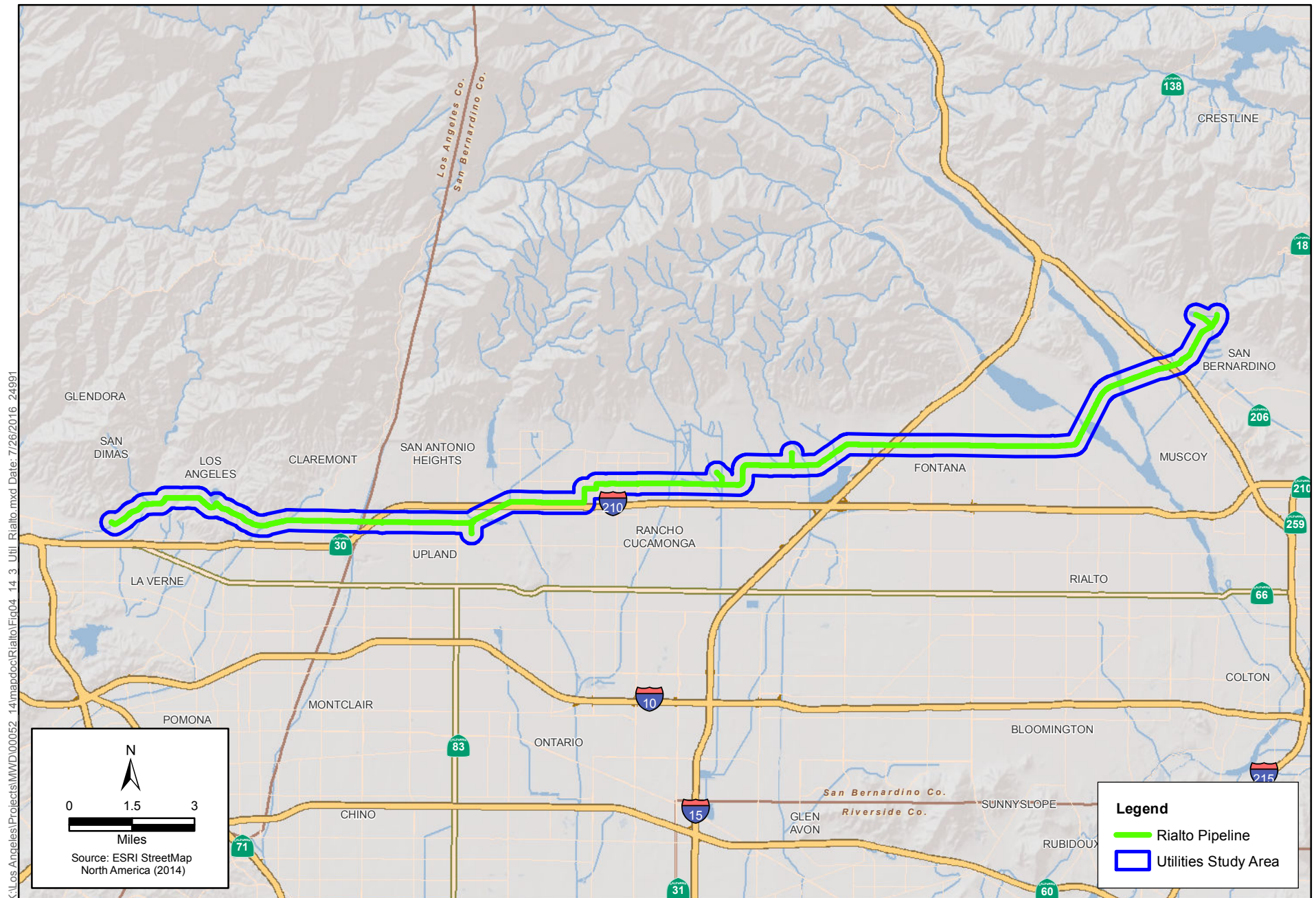


Figure 4.14-3
Rialto Pipeline Utilities Study Area
Metropolitan PCCP Program

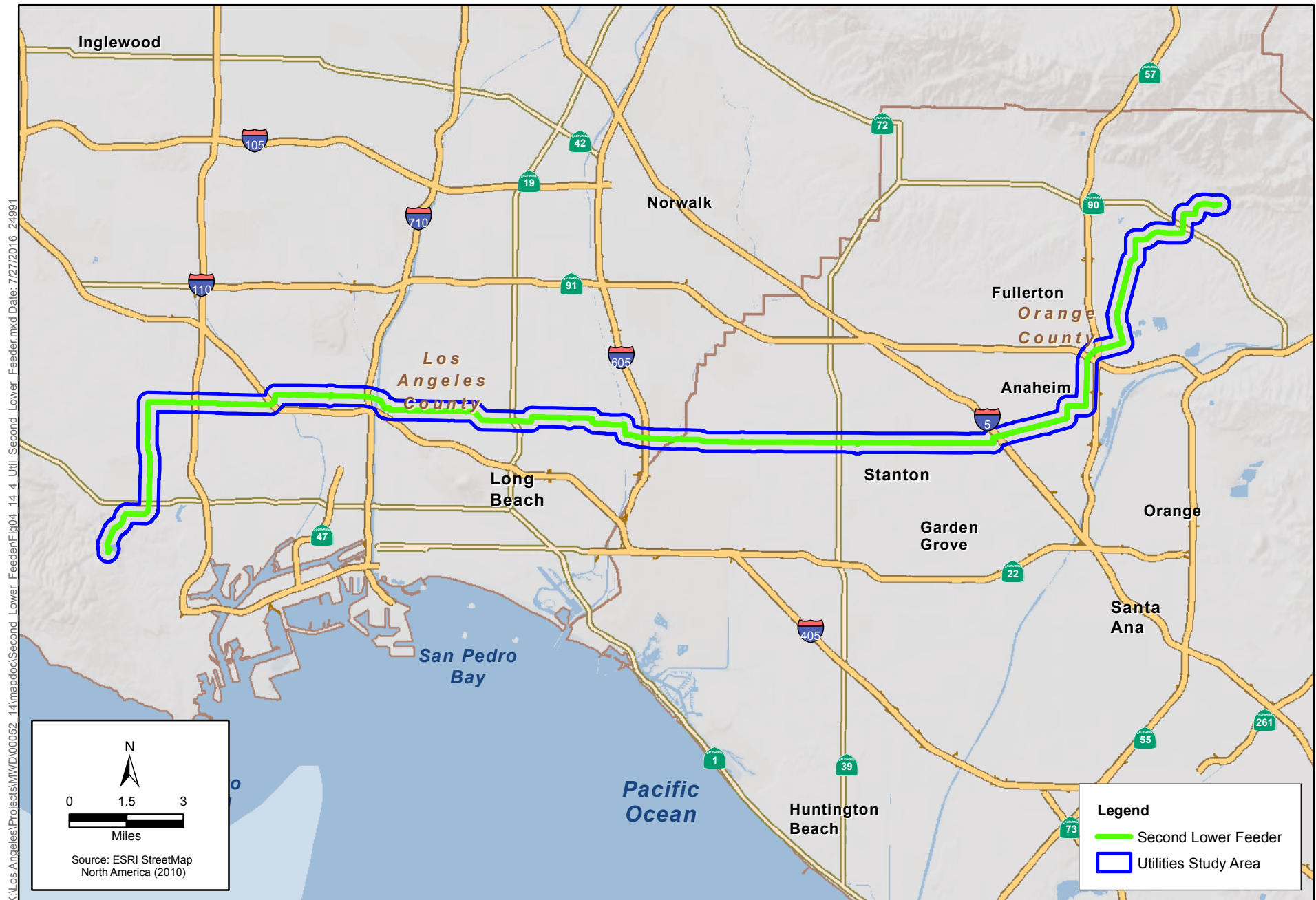
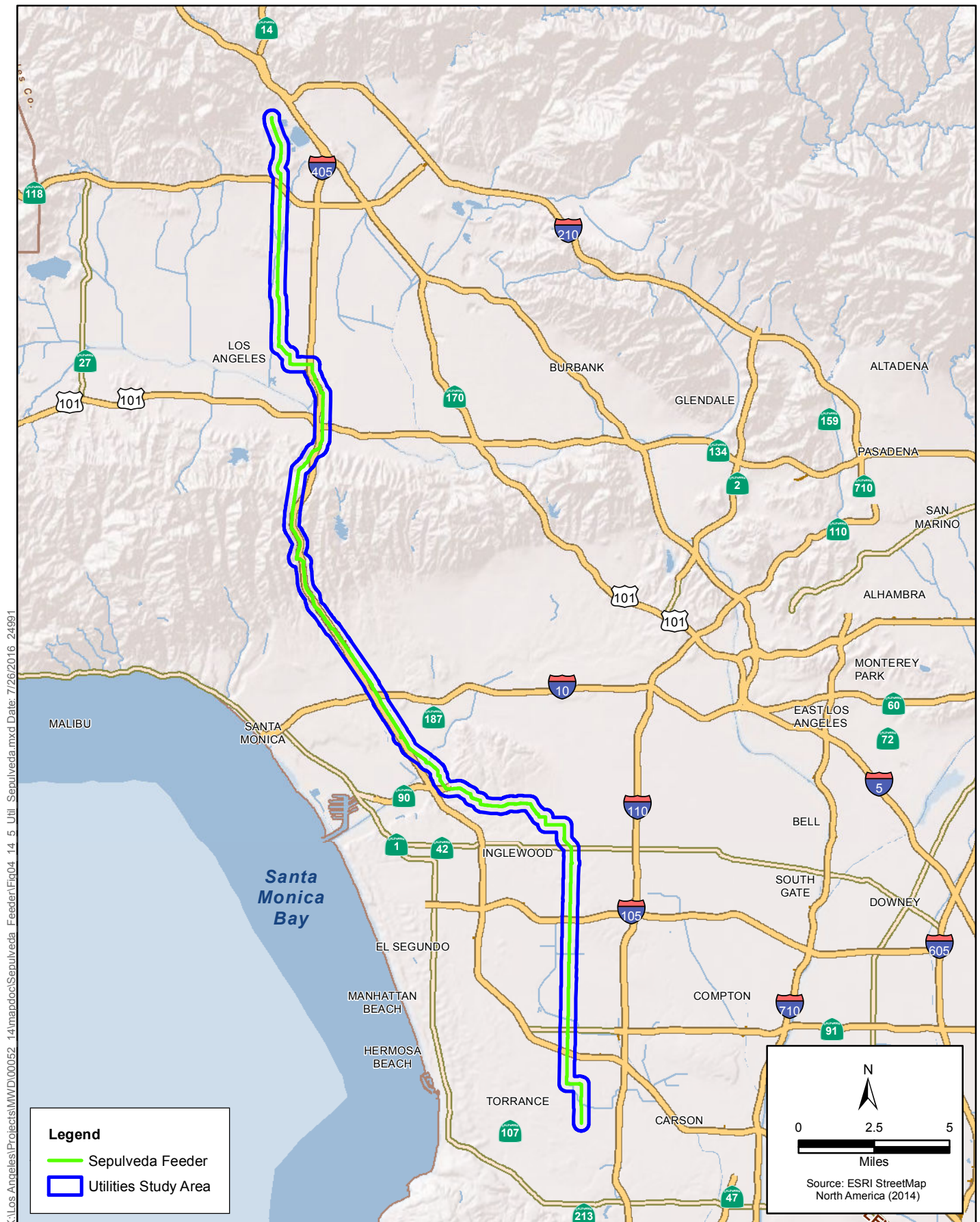


Figure 4.14-4
Second Lower Feeder Utilities Study Area
Metropolitan PCCP Program



**Figure 4.14-5
Sepulveda Feeder Utilities Study Area
Metropolitan PCCP Program**

4.14.2.5 Sepulveda Feeder

In addition to the standard utilities within rights-of-way and easements identified above, the study area for the Sepulveda Feeder includes water reservoirs, electrical substations, major electrical transmission lines, a tank farm, and flood control channels.

Areas along the Sepulveda Feeder are served by the following landfills.

- Burbank, La Crescenta: anticipated closure date approximately 2053 (CalRecycle 2016b)
- Chiquita Canyon, Del Valle: anticipated closure date approximately 2019 (CalRecycle 2016c)
- Sunshine Canyon, Santa Clarita: anticipated closure date approximately 2037 (CalRecycle 2016d)

4.14.3 Regulatory Framework

This section describes the plans, policies, and regulations related to utilities and service systems that are applicable to the proposed program.

4.14.3.1 Federal

Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.)

The Resource Conservation and Recovery Act was enacted in 1976 to ensure that solid and hazardous wastes are properly managed, from their generation to ultimate disposal or destruction. Implementation of the Resource Conservation and Recovery Act has largely been delegated to federally approved state waste management programs and, under Subtitle D, further promulgated to local governments for management of planning, regulation, and implementation of nonhazardous solid waste disposal (EPA 2016). The U.S. Environmental Protection Agency retains oversight of state actions under 40 Code of Federal Regulations (CFR) (Part 239–259). Where facilities are found to be inadequate, 40 CFR Part 256.42 requires that necessary facilities and practices be developed by the responsible state and local agencies or by the private sector (USGPO 2016). In California, that responsibility was created under the California Integrated Waste Management Act of 1989 (Californians Against Waste 2016).

4.14.3.2 State

Title 22, Chapter 16, Waterworks Standards

When buried water mains are close to non-potable pipelines (such as sanitary sewer mains, recycled water, or storm drains), they are vulnerable to contamination. The most effective protection against this type of drinking water contamination is adequate construction and separation of water mains and non-potable pipelines. The Waterworks Standards (Title 22, Chapter 16, Section 64572) provide separation criteria for new construction (California DHS 2003).

California Integrated Waste Management Act (AB 939)

In response to the Resource Conservation and Recovery Act, the California Integrated Waste Management Act of 1989 was enacted by Assembly Bill (AB) 939. It requires cities and counties to prepare an integrated waste management plan, including a countywide siting element, for each jurisdiction. Pursuant to Public Resources Code Sections 41700–41721.5, the countywide siting element provides an estimate of the total permitted disposal capacity needed for a 15-year period, or whenever additional capacity is necessary. Countywide siting elements in California must be updated by each operator and permitted by the Department of Resources Recycling, which is within the Natural Resources Agency, every 5 years. AB 939 mandated that local jurisdictions meet solid waste diversion goals of 50 percent by 2000. (Californians Against Waste 2016)

Protection of Underground Infrastructure (Cal. Gov. Code § 4216)

This code requires that an excavator must contact a regional notification center (i.e., underground service alert) at least 2 days before excavation of any subsurface installations. The underground service alert will then notify the utilities that may have buried lines within 1,000 feet of the excavation. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of excavation. The construction contractor is required to probe and expose the underground facilities by hand prior to using power equipment. (DigAlert 2016)

4.14.3.3 Local

Local policies and regulations related to utilities and service systems generally relate to new construction and buildings. These policies and regulations are not applicable to the proposed program.

4.14.4 Thresholds and Methodology

4.14.4.1 Thresholds of Significance

Table 4.14-1 lists the thresholds from Appendix G of the State CEQA Guidelines that pertain to utilities and service systems. These thresholds are addressed in the PEIR.

Table 4.14-1. CEQA Thresholds for Utilities and Service Systems

Threshold	
<i>Would the proposed program:</i>	
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
b.	Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?
c.	Require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new and expanded entitlements needed?

Threshold <i>Would the proposed program:</i>
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to its existing commitments?
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
g. Comply with federal, state, and local statutes and regulations related to solid waste?

4.14.4.2 Methodology

The analysis of impacts on utilities and service systems includes evaluation of the proposed program's effects related to wastewater treatment, water and wastewater treatment facilities, stormwater drainage facilities, water supplies, wastewater treatment facilities capacity, landfill capacity, and solid waste regulations.

4.14.5 Impacts Analysis

4.14.5.1 Program Analysis

Threshold UTIL-A: Exceed Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board

The proposed program would not generate any long-term or substantial quantities of wastewater, and it would not involve permanent structures with the potential to generate wastewater. The proposed program would require dewatering of the pipelines prior to rehabilitation. The pipelines would be flushed with chlorinated water upon completion of rehabilitation activities. The flushed water would be dechlorinated and released into local flood control channels and sewer systems. Therefore, no additional treatment of water from dewatering or flushed water would be required. No wastewater treatment requirements would be violated or exceeded as a result of the proposed program. Impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold UTIL-B: Require or Result in the Construction of New Water or Wastewater Treatment Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects

The proposed program would rehabilitate existing PCCP along five existing pipelines. It would not involve the construction of new water facilities, and it would not increase the capacity of the Metropolitan water distribution system. The proposed program would not result in construction of new wastewater treatment facilities. No impacts would occur.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

Threshold UTIL-C: Require or Result in the Construction of New Stormwater Drainage Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects

The construction of new stormwater drainage facilities or the expansion of existing facilities is typically required to maintain or increase the facilities' capacity to accommodate an increase in stormwater runoff in an area, such as when a project involves a substantial increase in the amount of impermeable surface. The five existing pipelines that would be rehabilitated under the proposed program would not involve paving previously unpaved areas and therefore would not result in an increase in impermeable surfaces that would necessitate the construction of new or expanded stormwater facilities or the provision of additional capacity. Therefore, no impacts would occur.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

Threshold UTIL-D: Have Sufficient Water Supplies Available to Serve the Project from Existing Entitlements and Resources, or Are New and Expanded Entitlements Needed

The proposed program would rehabilitate existing water distribution pipelines. It would not entail uses that would result in long-term water consumption. Consequently, the proposed program would not affect existing water entitlements or require new entitlements. No impact would occur.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

Threshold UTIL-E: Result in a Determination by the Wastewater Treatment Provider that Serves or May Serve the Project that it Has Adequate Capacity to Serve the Project's Projected Demand in Addition to its Existing Commitments

The proposed program consists of rehabilitating four existing water distribution pipelines. It would not include long-term uses that would require wastewater treatment. No new wastewater would be generated from operation of the four existing pipelines after rehabilitation. Upon completion of the rehabilitation work, the pipelines would operate as they currently do. Consequently, the proposed program would not affect existing wastewater treatment capabilities of the local provider. No impacts would occur.

Mitigation Measures

There would be no impacts for the proposed program.

Residual Impacts

No impacts would result from the proposed program, and no mitigation is necessary. Therefore, there would be no residual impacts for the proposed program.

Threshold UTIL-F: Be Served by a Landfill with Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs

The proposed program would not generate substantial amounts of solid waste. Solid waste debris generated could include cutback asphalt, cut portions of PCCP, and excavated soil. This debris would be either reused on site, if feasible, or recycled off site. The selected contractor would use cost-effective means and methods to recycle or dispose of any solid waste debris generated during rehabilitation. Construction and demolition facilities accept these types of materials on a regular basis to process and dispose of them. Construction and demolition facilities used for current urgent repairs of other existing Metropolitan PCCP lines include Dan Copp Crushing, Arcadia Reclamation, and Standard Metals. The selected contractor would coordinate with these types of facilities prior to rehabilitation. Other solid waste debris that cannot be recycled and cannot go to a construction and demolition facility could be accommodated by one or more of the landfills identified in Section 4.14.2. The selected contractor could coordinate with one or more of these facilities. Given the intent to maximize the proposed program's use of excavated materials as backfill and the presence of multiple designated construction and demolition facilities and landfills with existing daily capacity to recycle or dispose of solid waste debris, impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

Threshold UTIL-G: Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste

The proposed program rehabilitation activities would generate small amounts of solid waste, including construction and demolition debris. All waste produced due to proposed program activities would be removed immediately following the activity and disposed of properly in accordance with federal, state, and local statutes and regulations. The proposed program is not anticipated to have a significant impact on solid waste disposal needs, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.14.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

As discussed in Section 4.14.5, the proposed program would have no impacts related to new or expanded water or wastewater treatment facilities; new or expanded stormwater drainage facilities; water supply availability; and wastewater treatment capacity. Therefore, it would not contribute to cumulative impacts on these resources.

The proposed program would result in less-than-significant impacts related to wastewater treatment requirements. During dewatering of the pipelines, water would be dechlorinated and released into local flood control channels and sewer systems and no additional treatment would be required. No wastewater treatment requirements would be violated or exceeded. Because of the limited scale of this dewatering and the treatment of the water as part of the projects in the program, the program would not result in a considerable contribution to a cumulative impact related to wastewater treatment.

The proposed program would result in less-than-significant impacts related to solid waste disposal. Minimal waste would be generated by the rehabilitation projects in the proposed program. Most of this waste would be reused on site or recycled. The small amount of remaining waste would not result in a considerable contribution to impacts to landfill capacity.

Section 4.15

Energy Conservation

4.15.1 Introduction

This section describes the existing conditions for energy and energy conservation, the regulatory framework associated with energy conservation, the impacts related to energy conservation that would result from the proposed program, and the mitigation measures that would reduce these impacts. This section meets the requirements of Appendix F, Energy Conservation, of the State CEQA Guidelines.

In 2009, the State CEQA Guidelines were revised to include a new Appendix F, Energy Conservation. Appendix F states that, in order to ensure that energy implications are considered in project decisions, EIRs are required to discuss the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

4.15.2 Existing Conditions

The study area for energy conservation is the South Coast Air Basin, the area in which nearly all program construction activities and related energy consumption would occur, which is consistent with the study area used for the purposes of the air quality analysis. A map of the study area is included in Section 4.3, *Air Quality*. As stated in Metropolitan's *2015 Urban Water Management Plan*, California's water sector is responsible for 6.8 percent of statewide greenhouse gas (GHG) emissions, which serves as an indicator of the amount of energy consumed. However, only 0.6 percent of statewide GHG emissions are attributable to the activities of water utilities, as most of the energy use is associated with water end uses (i.e., businesses and residents) and wastewater and agricultural uses (Metropolitan 2016). Table 4.15-1 shows the amount of energy used by Metropolitan for water conveyance, treatment, and distribution for 2013 and 2014.

Table 4.15-1. Metropolitan's Existing Energy Use

	Conveyance (kWh)	Treatment (kWh)	Distribution (kWh)	Treated Energy Intensity (kWh/acre-foot)
2013	3,627,553,292	46,914,223	-239,069,895 ^a	1,786
2014	3,448,714,628	46,695,775	-118,895,649 ^a	1,938
^a Represents a net generation of energy. kWh = kilowatts per hour kWh/acre-foot = kilowatts per hour per acre-foot Source: Metropolitan 2016.				

4.15.3 Regulatory Framework

This section describes the plans, policies, and regulations related to energy conservation that are applicable to the proposed program.

4.15.3.1 Federal

The following federal laws related to energy and energy use are applicable, as the federal government has primary responsibility for the regulation of the fuel economy of vehicles, including for vehicles that would be used during the construction period for the proposed program.

Energy Policy and Conservation Act of 1975

The Energy Policy and Conservation Act of 1975 was enacted to serve the nation's energy demands and calls for energy conservation when feasible. Among other provisions, the act directed the Secretary of the Department of Transportation to set and implement fuel economy standards for passenger cars and light trucks as part of the Corporate Average Fuel Economy program.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 was signed into law by President George W. Bush on December 19, 2007, with the aim of moving the United States toward greater energy independence and security; increasing the production of clean renewable fuels; protecting consumers; increasing the efficiency of products, buildings, and vehicles; promoting GHG research; improving the energy efficiency of the federal government; and improving vehicle fuel economy. The act expanded the Corporate Average Fuel Economy program to include standard-setting for medium- and heavy-duty vehicles.

4.15.3.2 State

California Energy Commission

Created by the Legislature in 1974, the California Energy Commission is the state's primary energy policy and planning agency and is responsible for, among other things, forecasting future energy needs for the state. Senate Bill 1389 (Chapter 568, Statutes of 2002) requires the California Energy Commission to prepare a biennial Integrated Energy Policy Report. This report contains an integrated assessment of major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors, and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The commission published the *2015 Integrated Energy Policy Report* in February 2016 and the *2016 Integrated Energy Policy Report Update* is currently being developed.

Executive Order S-3-05

Executive Order S-3-05, enacted in June 2005, sets specific GHG emission reduction targets for the state and gives the Transportation and Housing Agency responsibility to help meet the targets. The Executive Order sets 2050 GHG reduction targets at 80 percent below 1990 levels and envisions reduced vehicle miles traveled and increased vehicle fuel efficiency as major factors in achieving

GHG reductions. Because of the inextricable relationship between GHG emissions and energy use, Executive Order S-3-05 has implications for energy use.

AB 32: Global Warming Solutions Act

Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32 (Global Warming Solutions Act) into law on September 27, 2006, requiring that the California Air Resources Board (ARB) reduce GHG emissions to 1990 levels by 2020 and maintain and continue reductions beyond 2020. The bill also provides the Governor the ability to invoke a safety valve and suspend the emissions caps for up to 1 year in the case of an emergency or significant economic harm. ARB prepared the AB 32 scoping plan that has been approved and contains a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation regulation to fund the program.

AB 2076, Reducing Dependence on Petroleum

The California Energy Commission and ARB are directed by AB 2076 (passed in 2000, Shelley, Chapter 936, Statutes of 2000) to develop and adopt recommendations for reducing dependence on petroleum. A performance-based goal is to reduce petroleum demand to 15 percent below 2003 demand levels by 2020.

4.15.3.3 Local

Local policies and regulations related to energy generally relate to new construction and buildings; these policies and regulations are not applicable to the proposed program. However, Metropolitan has adopted a set of Energy Management Policies.

Metropolitan Energy Management Policies

To further Metropolitan's mission to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way, the Metropolitan Board adopted a set of Energy Management Policies in August 2010. The Energy Management Policies guide the agency to (1) contain costs and reduce Metropolitan's exposure to energy price volatility; (2) increase operational reliability by implementing renewable energy projects; (3) provide a revenue stream to offset energy costs; and (4) move Metropolitan toward energy independence (i.e., maximize power production facilities and energy contracts for direct use by Metropolitan). These policies are consistent with Metropolitan's goal to balance long-term reliability with cost control, with the added benefit of reducing GHG emissions (Metropolitan 2010). Although the Energy Management Policies do not explicitly address construction-related energy consumption, the efforts to control costs on energy resources applies to the construction period as well.

4.15.4 Thresholds and Methodology

4.15.4.1 Thresholds of Significance

Table 4.15-2 lists the threshold that encompasses all of the potential impacts of the program identified in Appendix F of the State CEQA Guidelines that pertain to energy conservation. The threshold and the analysis below do not address the program's effects on electricity, as there would be negligible electricity consumption during construction and program operation would not increase energy use relative to existing conditions. The following threshold is addressed in the PEIR.

Table 4.15-2. CEQA Thresholds for Energy Conservation

Threshold
<i>Would the proposed program:</i>
a. Use energy in an inefficient, wasteful, or unnecessary manner?

4.15.4.2 Methodology

The estimate of construction-related energy use was calculated by applying the conversion factors for GHG emissions per gallon of fuel to the total GHG emissions. As discussed in Section 4.7, GHG emissions were estimated using emissions factors for off-road construction equipment and on-road vehicle trips and idling derived from CalEEMod and EMFAC2011. Emissions for each of the individual sites were estimated and a full program construction scenario was developed to quantify impacts related to GHGs, which includes the following.

- An average of three relining excavation sites per mile of PCCP
- An average of one new valve/meter vault structure for every 5 miles of PCCP
- An average of one air-release/vacuum valve relocation per mile of PCCP
- 1,000 feet of parallel piping for every 10 miles of PCCP

Emissions were then converted to gallons of diesel fuel, as this would be the primary fuel source for vehicles and equipment during the construction period.

Because the proposed program would involve the rehabilitation and/or replacement of existing water distribution pipelines and would not enhance the capacity of the water distribution network, there would be no change in energy use associated with operation of the proposed program. Therefore, this analysis is limited to energy use that would occur during the construction period.

4.15.5 Impacts Analysis

4.15.5.1 Program Analysis

Threshold ENE-A: Use Energy in an Inefficient, Wasteful, or Unnecessary Manner

Under the proposed program, construction activities would require energy in the form of fuels for construction vehicles and equipment. As shown in Appendix G and Table 4.15-3, approximately 13.84 million gallons of diesel fuel would be consumed over the 25-year construction period. Although the estimated fuel use would be substantial, the construction would occur over a long time horizon. As such, the annual fuel consumption would represent a small portion of the total, a negligible increase in regional demand, and an insignificant amount relative to the greater than 18 billion gallons of on-road fuels used in the state in 2013 (California Energy Commission 2014). Given the extensive network of fueling stations throughout the program region and the fact that construction would be relatively short term in any given location along the pipeline alignments, no new or expanded sources of energy or infrastructure would be required to meet the energy demand of the proposed program.

The proposed program would not involve the construction of new water facilities, and it would not increase the capacity of the Metropolitan water distribution system. In addition, all construction equipment would be maintained in accordance with manufacturers' specifications so equipment performance would not be compromised such that the inefficient use of fuel would result. Therefore, impacts related to energy use would be less than significant.

Table 4.15-3. Construction Energy Consumption

	Energy Consumed
Buildout GHG emissions (MT CO ₂)	140,608.5
Gallons of Diesel Fuel	13,838,767
Source: Calculations by ICF International 2016. See Appendix G. MT CO ₂ = million tons of carbon dioxide	

Mitigation Measures

Impacts would be less than significant for the proposed program, and no mitigation is required. Program-related energy consumption would be reduced by 0.8 percent through the use of Tier 4 off-road construction equipment, as specified by MM AIR-1 in Section 4.3, *Air Quality*.

Residual Impacts

Impacts that would result from the proposed program would be less than significant, and no mitigation is necessary. Therefore, residual impacts would be less than significant.

4.15.5.2 Cumulative Analysis

The proposed program would be implemented over a long period of time; in many cases, implementation of the projects in the proposed program would occur past the planning horizons of

local jurisdictions and agencies. Therefore, the program-level cumulative impact analyses for the various resources are limited to the identification of the types of impacts that may occur.

As discussed in Section 4.15.4, the proposed program would have no impacts related to new or expanded water service, new or expanded stormwater drainage facilities, water supply availability, and water treatment capacity. Therefore, the operation of the proposed program would not contribute to cumulative impacts related to energy resources.

During the construction period, the proposed program would require the use of energy in the form of fuels needed to operate vehicles and equipment, as discussed in Section 4.15.5.1. Given the extensive network of fueling stations found throughout the region and that the pipelines would be relined over more than 25 years, the impact on fuel supply and demand would be negligible and impacts would not be cumulatively considerable.

Chapter 5 Alternatives

5.1 Introduction

During consideration of a project or program that could have a significant effect on the environment, the California Environmental Quality Act (CEQA) requires that alternatives that could avoid or lessen the project's significant effect(s) be considered. This chapter presents potential alternatives to the proposed program and evaluates them as required by CEQA. The State CEQA Guidelines also require environmental impact reports (EIRs) to identify the environmentally superior alternative from among the alternatives (including the proposed project). The environmentally superior alternative is identified in Section 5.5.2.

5.2 Summary of Program Objectives and Significant Impacts

5.2.1 Program Objectives

In September 2011, Metropolitan Water District of Southern California's (Metropolitan) Board authorized initiation of the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program in order to develop a comprehensive, long-term plan for repair of Metropolitan's at-risk PCCP feeders. There were several drivers for the creation of this program: (1) the increasing number of failures of PCCP lines within the water industry, along with recognition of the risks associated with these failures; (2) trends of PCCP deterioration within Metropolitan's distribution system, based on monitoring data collected over a 14-year period; and (3) Metropolitan's experience with expensive, urgent repairs on PCCP lines. Based on this experience and on a risk assessment of Metropolitan's PCCP lines, staff concluded that approximately 100 miles of PCCP will have a reduced service life and need to be rehabilitated, especially in comparison with pipelines made of other materials.

The objectives of the proposed program are to:

- Reduce the risk of unplanned outages
- Extend the service life of the pipelines
- Perform the rehabilitation work in a cost-effective manner
- Minimize the effects of rehabilitation efforts on Member Agency deliveries
- Minimize the loss of hydraulic capacity due to rehabilitation
- Improve system operational and emergency flexibility

5.2.2 Significant Environmental Impacts

The PCCP Rehabilitation Program would potentially result in the following significant impacts (or potentially significant impacts) that could not be reduced to less-than-significant levels with mitigation.

- Conflict with or obstruct implementation of the applicable air quality plan (AQ-A)
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (AQ-B)
- Result in a cumulatively considerable net increase in any criteria pollutant for which the region is in non-attainment under an applicable federal or state ambient air quality standard (AQ-C)
- Expose sensitive receptors to substantial pollutant concentrations (AQ-D)
- Have substantial adverse effect on special-status species (BIO-A) (potentially significant, to be determined at project level)
- Have substantial adverse effect on riparian habitat or other sensitive natural community (BIO-B) (potentially significant, to be determined at project level)
- Have a substantial adverse effect on federally protected wetlands (BIO-C) (potentially significant, to be determined at project level)
- Interfere substantially with the movement of native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors or impede use of native wildlife nursery sites (BIO-D) (potentially significant, to be determined at project level)
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (BIO-F) (potentially significant, to be determined at project level)
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (GHG-A)
- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies (NOI-A) (potentially significant, to be determined at project level)
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project (NOI-D) (potentially significant, to be determined at project level)
- Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths (TRA-A) (potentially significant, to be determined at project level)

5.3 Alternatives Considered but Rejected

Section 15126.6(a) of the State CEQA Guidelines states that an EIR shall describe “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain

most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project,” as well as provide an evaluation of “the comparative merits of the alternatives.” Under Section 15126.6(a), an EIR does not need to consider alternatives that are not feasible, nor need it address every conceivable alternative to the project. The range of alternatives “is governed by the ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.” The focus is on informed decision-making and public participation rather than providing a set of alternatives simply to satisfy format.

As described below, two types of alternatives to the proposed program were considered—alternative locations and alternative methods—along with a No Program Alternative. Except for the No Program Alternative, all of these potential alternatives have been rejected, as described below.

5.3.1 Alternative Locations

Potential alternative pipeline locations are program feeder improvements, including the Allen-McColloch Pipeline, the Calabasas Feeder, the Rialto Pipeline, the Second Lower Feeder, and the Sepulveda Feeder, and are substantially constrained by the need to connect the existing pipelines at their origins and terminations and to the existing service connections. Any alternative location would also be constrained by the width of the existing Metropolitan rights-of-way. Such constraints mean that there is no reasonable way to achieve the objectives of the PCCP program by replacing the pipelines in other locations. Therefore, no alternative locations for the PCCP program were developed.

5.3.2 Alternative Methods

The program description includes various methods for rehabilitation of the pipelines, including steel cylinder relining, steel pipe sliplining, and new pipe replacement. All of these methods were considered in this ~~Programmatic program-level~~ EIR (PEIR) as variations within the program. There are no other feasible methods for rehabilitating the existing pipelines. Therefore, no alternative methods for the PCCP program were developed.

5.4 No Program Alternative

Under the No Program Alternative, repairs and improvements included in the proposed program would not be planned and scheduled. Because the pipelines and feeders would continue to age, there would be a continued risk for failure. Metropolitan would need to prevent failures through localized and as-needed improvements, but these activities would not occur as part of a planned program. Much of this rehabilitation would thus occur as “urgent repairs” because of the lack of a systematic planning offered by the proposed program.

5.4.1 Comparison of the Impacts of the No Program Alternative to the Proposed Program

The No Program Alternative would eventually require the same types of repairs and rehabilitation of the five pipelines within the proposed program, but this would occur without preplanning and scheduling and often as urgent repairs. The ability to locate excavations and other rehabilitation work in a manner that avoids impacts may be lessened due to the need to respond to urgent needs

of deteriorating pipelines. Therefore, impacts under the No Program Alternative would be the same as the proposed program, or may even be greater.

Table 5.4-1. Summary Table

Environmental Resource Area	Proposed Program	No Program
Aesthetics		
Threshold AES-A: Have a Substantial Adverse Effect on a Scenic Vista	Less than significant	Similar
Threshold AES-B: Substantially Damage Scenic Resources, Including, but not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway	Less than significant	Similar
Threshold AES-C: Substantially Degrade the Existing Visual Character or Quality of the Site and Its Surroundings	Less than significant	Similar
Threshold AES-D: Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area	Less than significant with mitigation	Similar or worse, if urgent repairs required nighttime work with lighting
Agriculture & Forestry Resources		
Threshold AGR-A: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) to Non-Agricultural Use	Less than significant	Similar
Threshold AGR-E: Involve Other Changes in the Existing Environment that, Because of Their Location or Nature, Could Result in the Conversion of Farmland to Non-Agricultural Use	Less than significant	Similar
Air Quality		
Threshold AQ-A: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Significant and unavoidable	Similar
Threshold AQ-B: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation	Significant and unavoidable	Similar
Threshold AQ-C: Result in a Cumulatively Considerable Net Increase in Any Criteria Pollutant for Which the Region Is in Non-Attainment under an Applicable Federal or State Ambient Air Quality Standard	Significant and unavoidable	Similar
Threshold AQ-D: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Significant and unavoidable	Similar
Biological Resources		
Threshold BIO-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 Wildlife or U.S. Fish and Wildlife Service	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts either by location or season

Environmental Resource Area	Proposed Program	No Program
Threshold BIO-B: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-C: Have a Substantial Adverse Effect on Federally Protected Wetlands, as Defined by Section 404 of the Clean Water Act, through Direct Removal, Filling, Hydrological Interruption, or Other Means	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-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	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-E: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-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	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts either by location or season
Cultural Resources		
Threshold CUL-A: Cause a Substantial Adverse Change in the Significance of a Historical Resource	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or to fully implement mitigation to protect resources
Threshold CUL-B: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or to fully implement mitigation to protect resources

Environmental Resource Area	Proposed Program	No Program
Threshold CUL-C: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or to fully implement mitigation to protect resources
Geology and Soils		
Threshold GEO-A.I: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault	Less than significant	Similar
Threshold GEO-A.II: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Strong Seismic Groundshaking	Less than significant	Similar
Threshold GEO-A.III: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Seismically Related Ground Failure, Including Liquefaction	Less than significant	Similar
Threshold GEO-A.IV: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Landslides	Less than significant	Similar
Threshold GEO-B: Result in Substantial Soil Erosion or the Loss of Topsoil	Less than significant	Similar
Threshold GEO-C: Be Located on a Geologic Unit or Soil that Is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse	Less than significant	Similar
Threshold GEO-D: Be Located on Expansive Soil, Creating Substantial Risks to Life or Property	Less than significant	Similar
Greenhouse Gas Emissions		
Threshold GHG-A: Generate Greenhouse Gas Emissions, either Directly or Indirectly, that May Have a Significant Impact on the Environment	Significant and unavoidable	Similar
Threshold GHG-B: Conflict with Any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	Less than significant	Similar
Hazards and Hazardous Materials		
Threshold HAZ-A: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials	Less than significant	Similar

Environmental Resource Area	Proposed Program	No Program
Threshold HAZ-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	Similar
Threshold HAZ-C: Emit Hazardous Emissions or Involve Handling Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School	Less than significant with mitigation	Similar
Threshold HAZ-D: Be Located on a Site That Is Included on a List of Hazardous Materials Sites and, as a Result, Create a Significant Hazard to the Public or the Environment	Less than significant with mitigation	Similar
Threshold HAZ-E: For a Project Located within an Airport Land Use Plan or, Where Such Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard for People Residing or Working in the Project Area	Less than significant with mitigation	Similar
Threshold HAZ-F: For a Project within the Vicinity of a Private Airstrip, Result in a Safety Hazard for People Residing or Working in the Project Area	No impacts	Similar
Threshold HAZ-G: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	Less than significant with mitigation	Similar or worse if urgent repairs prevent implantation of mitigation to avoid or reroute emergency routes and make advance notifications
Threshold HAZ-H: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Areas where Wildlands Are Adjacent to Urbanized Areas or where Residences Are Intermixed with Wildlands	Less than significant	Similar
Hydrology and Water Quality		
Threshold WQ-A: Violate Any Water Quality Standards or Waste Discharge Requirements	Less than significant	Similar
Threshold WQ-C: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, in a Manner that Would Result in Substantial Erosion or Siltation On or Off Site	Less than significant	Similar
Threshold WQ-D: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding On or Off Site	Less than significant with mitigation	Similar

Environmental Resource Area	Proposed Program	No Program
Threshold WQ-E: 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	Less than significant	Similar
Threshold WQ-J: Expose People or Structures to Inundation by Seiche, Tsunami, or Mudflow	Less than significant	Similar
Land Use		
Threshold LU-A: Physically Divide an Established Community	Less than significant	Similar
Threshold LU-B: Conflict with Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect	Less than significant	Similar
Noise		
Threshold NOI-A: Expose Persons to or Generate Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies	<u>Significant</u> Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or require nighttime work
Threshold NOI-B: Expose Persons to or Generate Excessive Groundborne Vibration or Groundborne Noise Levels	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold NOI-C: Result in a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project	No impact	Similar
Threshold NOI-D: Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project	<u>Significant</u> Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or require nighttime work
Threshold NOI-E: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Expose People Residing or Working in the Project Area to Excessive Noise Levels	Less than significant	Similar
Threshold NOI-F: For a Project within the Vicinity of a Private Airstrip, Expose People Residing or Working in the Project Area to Excessive Noise Levels	No impact	Similar
Recreation		
Threshold REC-A: Increase the Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such That Substantial Physical Deterioration of the Facilities Would Occur or Be Accelerated	Less than significant	Similar or worse, if urgent repairs prevent ability to avoid impacts by location

Environmental Resource Area	Proposed Program	No Program
Threshold REC-B: Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities, Which Might Have an Adverse Physical Effect on the Environment	No impact	Similar
Transportation and Traffic		
Threshold TRA-A: Conflict with an Applicable Plan, Ordinance, or Policy that Establishes Measures of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-Motorized Travel, and Relevant Components of the Circulation System, Including, but not Limited to, Intersections, Streets, Highways and Freeways, and Pedestrian and Bicycle Paths	<u>Significant</u> Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location, planning and coordination with local jurisdictions, advance notifications, and provision of detours and adequate parking
Threshold TRA-B: Conflict with an Applicable Congestion Management Program, Including, but not Limited to, Level-of-Service Standards and Travel Demand Measures or Other Standards Established by the County Congestion Management Agency for Designated Roads or Highways	Less than significant	Similar
Threshold TRA-C: Result in a Change in Air Traffic Patterns, Including either an Increase in Traffic Levels or a Change in Location that Would Result in Substantial Safety Risks	Less than significant with mitigation	Similar or worse if urgent repairs occur in active runway areas
Threshold TRA-D: Substantially Increase Hazards Due to a Design Feature or Incompatible Uses	Less than significant with mitigation	Similar or worse if urgent repairs occur in locations resulting in hazardous condition
Threshold TRA-E: Result in Inadequate Emergency Access	Less than significant with mitigation	Similar or worse if urgent repairs affect emergency access
Threshold TRA-F: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities or Otherwise Decrease the Performance or Safety of Such Facilities	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location and provision of detours
Utilities and Service Systems		
Threshold UTIL-A: Exceed Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board	Less than significant	Similar

Environmental Resource Area	Proposed Program	No Program
Threshold UTIL-B: Require or Result in the Construction of New Water or Wastewater Treatment Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects	No impact	Similar
Threshold UTIL-C: Require or Result in the Construction of New Stormwater Drainage Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects	No impact	Similar
Threshold UTIL-D: Have Sufficient Water Supplies Available to Serve the Project from Existing Entitlements and Resources, or Are New and Expanded Entitlements Needed	No impact	Similar
Threshold UTIL-E: Result in a Determination by the Wastewater Treatment Provider that Serves or May Serve the Project that it Has Adequate Capacity to Serve the Project's Projected Demand in Addition to its Existing Commitments	No impact	Similar
Threshold UTIL-F: Be Served by a Landfill with Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs	Less than significant	Similar
Threshold UTIL-G: Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste	Less than significant	Similar
Energy Conservation		
Threshold ENE-A: Use Energy in an Inefficient, Wasteful, or Unnecessary Manner	Less than significant	Similar

5.5 Summary of Alternatives Analysis and Identification of the Environmentally Superior Alternative

5.5.1 Resources with Significant and Unavoidable Impacts

The No Program Alternative would have similar or worse impacts for all significant and unavoidable impacts as described in Table 5.4-1.

Chapter 6

Other CEQA Considerations

6.1 Effects Found Not to Be Significant

The proposed program was initially evaluated through the Initial Study Checklist (Appendix A). The Initial Study Checklist identified that the following impacts would be less than significant (or there would be no impact) and would not be evaluated in the PEIR.

- Threshold AGR-B: Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract
- Threshold AGR-C: Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land (as Defined by 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 551104(g))
- Threshold AGR-D: Result in the Loss of Forest Land or Conversion of Forest Land to Non-forest Use
- Threshold GEO-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
- Threshold WQ-B: Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such that There Would be a Net Deficit in Aquifer Volume or a Lowering of the Local Groundwater Table Level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)
- Threshold WQ-G: Place Housing Within a 100-Year Flood Hazard Area, as Mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or Other Flood Hazard Delineation Map
- Threshold WQ-H: Place Within a 100-Year Flood Hazard Area Structures that Would Impede or Redirect Floodflows
- Threshold WQ-I: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding, Including Flooding as a Result of the Failure of a Levee or Dam

As discussed in Chapter 4, *Environmental Analysis*, the following impacts would be less than significant (or there would be no impacts).

- Threshold AES-A: Have a Substantial Adverse Effect on a Scenic Vista
- Threshold AES-B: Substantially Damage Scenic Resources, Including, but not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway
- Threshold AES-C: Substantially Degrade the Existing Visual Character or Quality of the Site and Its Surroundings
- Threshold AGR-A: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) to Non-Agricultural Use

- Threshold AGR-E: Involve Other Changes in the Existing Environment that, Because of Their Location or Nature, Could Result in the Conversion of Farmland to Non-Agricultural Use
- Threshold GEO-A.I: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault
- Threshold GEO-A.II: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Strong Seismic Groundshaking
- Threshold GEO-A.III: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Seismically Related Ground Failure, Including Liquefaction
- Threshold GEO-A.IV: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Landslides
- Threshold GEO-B: Result in Substantial Soil Erosion or the Loss of Topsoil
- Threshold GEO-C: Be Located on a Geologic Unit or Soil that Is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse
- Threshold GEO-D: Be Located on Expansive Soil, Creating Substantial Risks to Life or Property
- Threshold GHG-B: Conflict with Any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases
- Threshold HAZ-A: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials
- Threshold HAZ-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
- Threshold HAZ-F: For a Project within the Vicinity of a Private Airstrip, Result in a Safety Hazard for People Residing or Working in the Project Area
- Threshold HAZ-H: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Areas where Wildlands Are Adjacent to Urbanized Areas or where Residences Are Intermixed with Wildlands
- Threshold WQ-A: Violate Any Water Quality Standards or Waste Discharge Requirements
- Threshold WQ-C: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, in a Manner that Would Result in Substantial Erosion or Siltation On or Off Site
- Threshold WQ-E: 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
- Threshold WQ-J: Expose People or Structures to Inundation by Seiche, Tsunami, or Mudflow
- Threshold LU-A: Physically Divide an Established Community

- Threshold LU-B: Conflict with Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect
- Threshold NOI-C: Result in a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project
- Threshold NOI-E: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Expose People Residing or Working in the Project Area to Excessive Noise Levels
- Threshold NOI-F: For a Project within the Vicinity of a Private Airstrip, Expose People Residing or Working in the Project Area to Excessive Noise Levels
- Threshold REC-A: Increase the Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such That Substantial Physical Deterioration of the Facilities Would Occur or Be Accelerated
- Threshold REC-B: Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities, Which Might Have an Adverse Physical Effect on the Environment
- Threshold TRA-B: Conflict with an Applicable Congestion Management Program, Including, but not Limited to, Level-of-Service Standards and Travel Demand Measures or Other Standards Established by the County Congestion Management Agency for Designated Roads or Highways
- Threshold UTIL-A: Exceed Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board
- Threshold UTIL-B: Require or Result in the Construction of New Water or Wastewater Treatment Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects
- Threshold UTIL-C: Require or Result in the Construction of New Stormwater Drainage Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects
- Threshold UTIL-D: Have Sufficient Water Supplies Available to Serve the Project from Existing Entitlements and Resources, or Are New and Expanded Entitlements Needed
- Threshold UTIL-E: Result in a Determination by the Wastewater Treatment Provider that Serves or May Serve the Project that it Has Adequate Capacity to Serve the Project's Projected Demand in Addition to its Existing Commitments
- Threshold UTIL-F: Be Served by a Landfill with Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs
- Threshold UTIL-G: Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste
- Threshold ENE-A: Use Energy in an Inefficient, Wasteful, or Unnecessary Manner

As discussed in Chapter 4, *Environmental Analysis*, the following impacts would be less than significant with incorporation of mitigation.

- Threshold AES-D: Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area

- Threshold BIO-E: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance
- Threshold CUL-A: Cause a Substantial Adverse Change in the Significance of a Historical Resource
- Threshold CUL-B: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource
- Threshold CUL-C: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature
- Threshold HAZ-C: Emit Hazardous Emissions or Involve Handling Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School
- Threshold HAZ-D: Be Located on a Site That Is Included on a List of Hazardous Materials Sites and, as a Result, Create a Significant Hazard to the Public or the Environment
- Threshold HAZ-E: For a Project Located within an Airport Land Use Plan or, Where Such Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard for People Residing or Working in the Project Area
- Threshold HAZ-G: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan
- Threshold WQ-D: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding On or Off Site
- Threshold NOI-B: Expose Persons to or Generate Excessive Groundborne Vibration or Groundborne Noise Levels
- Threshold TRA-C: Result in a Change in Air Traffic Patterns, Including either an Increase in Traffic Levels or a Change in Location that Would Result in Substantial Safety Risks
- Threshold TRA-D: Substantially Increase Hazards Due to a Design Feature or Incompatible Uses
- Threshold TRA-E: Result in Inadequate Emergency Access
- Threshold TRA-F: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities or Otherwise Decrease the Performance or Safety of Such Facilities

6.2 Unavoidable Adverse Effects

As discussed in Chapter 4, *Environmental Analysis*, the following impacts would be significant, even with the incorporation of mitigation (or potentially significant, requiring analysis at the project level).

- Threshold AQ-A: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan
- Threshold AQ-B: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation

- Threshold AQ-C: Result in a Cumulatively Considerable Net Increase in Any Criteria Pollutant for Which the Region Is in Non-Attainment under an Applicable Federal or State Ambient Air Quality Standard
- Threshold AQ-D: Expose Sensitive Receptors to Substantial Pollutant Concentrations
- Threshold BIO-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 Wildlife or U.S. Fish and Wildlife Service
- Threshold BIO-B: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
- Threshold BIO-C: Have a Substantial Adverse Effect on Federally Protected Wetlands, as Defined by Section 404 of the Clean Water Act, through Direct Removal, Filling, Hydrological Interruption, or Other Means
- Threshold BIO-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
- Threshold BIO-F/LU-C: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan
- Threshold GHG-A: Generate Greenhouse Gas Emissions, either Directly or Indirectly, that May Have a Significant Impact on the Environment
- Threshold NOI-A: Expose Persons to or Generate Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies
- Threshold NOI-D: Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project
- Threshold TRA-A: Conflict with an Applicable Plan, Ordinance, or Policy that Establishes Measures of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-Motorized Travel, and Relevant Components of the Circulation System, Including, but not Limited to, Intersections, Streets, Highways and Freeways, and Pedestrian and Bicycle Paths

6.3 CEQA Mandatory Findings of Significance

CEQA Guidelines Section 15065 requires that an EIR be prepared if there is substantial evidence, in light of the whole record, that any of the following conditions may occur:

- The project has 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 an endangered, rare, or threatened species; or eliminate important examples of major periods of California history or prehistory.

- The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The project has possible effects that are individually limited but cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
- The environmental effects of a project would cause substantial adverse effects on human beings, either directly or indirectly.

Because the proposed program has the potential to result in such significant effects, this PEIR was prepared. The following provides a summary of the conclusions in this PEIR regarding these mandatory findings of significance.

6.3.1 Substantially Degrade the Quality of the Environment

This PEIR identified significant or potentially significant environmental impacts that may not be reduced to less-than-significant levels by mitigation to air quality, biological resources, greenhouse gas emissions, noise, and traffic. Because these impacts may not be reduced to less-than-significant levels, there is the potential that projects within the proposed PCCP Rehabilitation Program could substantially degrade the environment. These impacts are as follows:

- *Conflict with or obstruct implementation of the applicable air quality plan* (see Section 4.3.5.1, Threshold AQ-A) because construction-period emissions from projects in the PCCP Rehabilitation Program would exceed regional mass emissions thresholds developed to aid the South Coast Air Basin in achieving attainment for those pollutants for which it is nonattainment.
- *Violate any air quality standard or contribute substantially to an existing or projected air quality violation* (see Section 4.3.5.1, Threshold AQ-B) because localized emissions from construction activities that would occur at a given rehabilitation site and in its immediate vicinity for projects in the PCCP Rehabilitation Program would exceed localized significance thresholds for nitrogen oxides and particulate matter 2.5 microns or less.
- *Result in cumulatively considerable net increase in any criteria pollutant for which the region is in non-attainment under an applicable federal or state ambient air quality standard* (see Section 4.3.5.1, Threshold AQ-C) because the projects in the PCCP Rehabilitation Program would exceed regional mass emissions thresholds for carbon monoxide and nitrogen oxides.
- *Expose sensitive receptors to substantial pollutant concentrations* (see Section 4.3.5.1, Threshold AQ-D) because localized emissions from construction activities that would occur at a given rehabilitation site and in its immediate vicinity for projects in the PCCP Rehabilitation Program would exceed localized significance thresholds for nitrogen oxides and particulate matter 2.5 microns or less.
- *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service* (see Section 4.4.5.1, Threshold BIO-A) because there is the potential for candidate, sensitive, or special-status species to occur in proximity to projects within the PCCP Rehabilitation Program and various rehabilitation activities could affect these species, and

because rehabilitation activities could affect bird nests or eggs protected under the Migratory Bird Treaty Act and Section 35.03 of the California Fish and Game Code.

- *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service* (see Section 4.4.5.1, Threshold BIO-B) because there is the potential for riparian habitat or other sensitive natural communities to occur in proximity to projects within the PCCP Rehabilitation Program and various rehabilitation activities could affect these communities.
- *Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act, through direct removal, filling, hydrological interruption, or other means* (see Section 4.4.5.1, Threshold BIO-C) because there is the potential for wetlands to occur in proximity to projects within the PCCP Rehabilitation Program and various rehabilitation activities could affect these wetlands.
- *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* (see Section 4.4.5.1, Threshold BIO-D) because there is the potential for migration corridors or nursery sites to occur in proximity to projects within the PCCP Rehabilitation Program and various rehabilitation activities could affect these resources.
- *Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan* (see Section 4.4.5.1, Threshold BIO-F) because projects within the PCCP Rehabilitation Program may conflict with the adopted Shell Western Energy and Petroleum and Metropolitan Habitat Conservation Plan, the Central and Coastal Natural Community Conservation Plan/Habitat Conservation Plan, and the proposed North Fontana Multispecies Habitat Conservation Plan.
- *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment* (See Section 4.7.5.1, Threshold GHG-A) because construction of the full PCCP Rehabilitation Program would result in amortized annual emissions of greenhouse gases that would exceed the South Coast Air Quality Management threshold.
- *Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies* (see Section 4.11.5.1, Threshold NOI-A) because noise levels during rehabilitation would be likely to exceed noise-level restrictions set by some local jurisdictions at some locations.
- *Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project* (see Section 4.11.5.1, Threshold NOI-D) because noise levels in some locations would result in substantial temporary increases in ambient noise levels in the vicinity of construction, above existing levels.
- *Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths* (see Section 4.13.5.1, Threshold TRA-1) because the disruption of local and regional traffic caused by the capacity reduction of streets in the proximity of projects in the PCCP Rehabilitation Program could be significant.

6.3.2 Substantially Reduce the Habitat of a Fish or Wildlife Species

This PEIR identified potentially significant environmental impacts on candidate, sensitive, or special-status species that may occur in proximity to projects within the PCCP Rehabilitation Program, and various rehabilitation activities could affect these species, including the reduction of habitat (see Section 4.4.5.1, Threshold BIO-A). Impacts on riparian habitat or other sensitive natural communities may also occur, affecting fish or wildlife species using this habitat (see Section 4.4.5.1, Threshold BIO-B). Adverse effects on wetlands may also occur, affecting fish or wildlife species using this habitat (see Section 4.4.5.1, Threshold BIO-C). Rehabilitation may also affect wildlife corridors or nursery sites (see Section 4.4.5.1, Threshold D). Projects in the proposed program may also conflict with provisions in adopted habitat conservation plans or natural community conservation plans (see Section 4.4.5.1, Threshold BIO-F). The level of the impacts identified above cannot be determined at the program level, and project-level analysis will determine if the impact is substantial.

6.3.3 Cause a Fish or Wildlife Population to Drop below Self-Sustaining Levels

This PEIR identified potentially significant environmental impacts on candidate, sensitive, or special-status species that may occur in proximity to projects within the PCCP Rehabilitation Program, and various rehabilitation activities could affect these species, including the reduction of habitat (see Section 4.4.5.1, Threshold BIO-A). Projects in the proposed program may also conflict with provisions in adopted habitat conservation plans or natural community conservation plans (see Section 4.4.5.1, Threshold BIO-F). Although these impacts would be unlikely to reduce fish or wildlife populations, causing them to drop below self-sustaining levels, the impacts of the projects in the PCCP Rehabilitation Program could contribute to cumulative impacts that could affect population levels. The level of the impacts identified above cannot be determined at the program level, and project-level analysis will determine whether the projects would result in population loss either individually or cumulatively.

6.3.4 Threaten to Eliminate a Plant or Animal Community

This PEIR identified potentially significant environmental impacts on candidate, sensitive, or special-status species that may occur in proximity to projects within the PCCP Rehabilitation Program, and various rehabilitation activities could affect these species (see Section 4.4.5.1, Threshold BIO-A). Impacts on riparian habitat or other sensitive natural communities may also occur (see Section 4.4.5.1, Threshold BIO-B). Adverse effects on wetlands may also occur (see Section 4.4.5.1, Threshold BIO-C). Rehabilitation may also affect wildlife corridors or nursery sites (see Section 4.4.5.1, Threshold D). Projects in the proposed program may also conflict with provisions in adopted habitat conservation plans or natural community conservation plans (see Section 4.4.5.1, Threshold BIO-F). Although these impacts would be unlikely to eliminate a plant or animal community, the impacts of the projects in the PCCP Rehabilitation Program could contribute to cumulative impacts that could threaten to eliminate a plant or animal community. The level of the impacts identified above cannot be determined at the program level, and project-level analysis will determine whether the projects would result in the elimination of a plant or animal community either individually or cumulatively.

6.3.5 Substantially Reduce the Number or Restrict the Range of an Endangered, Rare, or Threatened Species

This PEIR identified potentially significant environmental impacts on candidate, sensitive, or special-status species that may occur in proximity to projects within the PCCP Rehabilitation Program, and various rehabilitation activities could affect these species, including the reduction of habitat (see Section 4.4.5.1, Threshold BIO-A). Projects in the proposed program may also conflict with provisions in adopted habitat conservation plans or natural community conservation plans (see Section 4.4.5.1, Threshold BIO-F). The level of the impacts identified above cannot be determined at the program level, and project-level analysis will determine if the impacts would substantially reduce the number or restrict the range of endangered, rare, or threatened species, either individually or by contributing to a cumulative impact.

6.3.6 Eliminate Important Examples of Major Periods of California History or Prehistory

This PEIR identified potentially significant impacts on historical resources (built environment) from groundborne vibration from excavation and concrete cutting (see Section 4.5.5.1, Threshold CUL-A). Mitigation would protect historical resources (MM CUL-1). The PEIR also identified a low potential to encounter known or unknown buried archaeological resources (see Section 4.5.5.1, Threshold CUL-B). Mitigation would protect archaeological resources (MM CUL-2, MM CUL-3, MM CUL-4, and MM CUL-5). With implementation of the mitigation measures, projects in the proposed program would not eliminate important examples of major periods of California history or prehistory.

6.3.7 Achieve Short-Term Environmental Goals to the Disadvantage of Long-Term Environmental Goals

The PCCP Rehabilitation Program objectives are to reduce the risk of unplanned outages, extend the service life of pipelines, perform rehabilitation work in a cost-effective manner, minimize the effects of rehabilitation efforts on Member Agency deliveries, minimize the loss of hydraulic capacity caused by rehabilitation, and improve system operational and emergency flexibility. These objectives represent short-term goals as well as long-term environmental goals. Impacts of rehabilitation would generally be limited to the construction period. No changes in land use would occur. Once rehabilitation is complete, there would be no additional impacts and the system would be less likely to be at risk for unplanned outages. Therefore, the proposed program would not achieve short-term environmental goals to the disadvantage of long-term environmental goals.

6.3.8 Have Possible Effect That Are Individually Limited but Cumulatively Considerable

Although most of the impacts of the project in the PCCP Rehabilitation Program would be localized and short-term during the construction period, some impacts could contribute to cumulative impacts. These include the following:

- Conflict with or obstruct implementation of the applicable air quality plan (see Section 4.3.5.2)
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (see Section 4.3.5.2)

- Result in cumulatively considerable net increase in any criteria pollutant for which the region is in non-attainment under an applicable federal or state ambient air quality standard (see Section 4.3.5.2)
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (see Section 4.4.5.2)
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (See Section 4.7.5.2)
- Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths (see Section 4.13.5.2)

6.3.9 Cause Substantial Adverse Effects on Human Beings, Either Directly or Indirectly

This PEIR identified potentially substantial adverse effects on human beings in the following ways:

- Conflict with or obstruct implementation of the applicable air quality plan (see Section 4.3.5.1, Threshold AQ-A)
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (see Section 4.3.5.1, Threshold AQ-B)
- Result in cumulatively considerable net increase in any criteria pollutant for which the region is in non-attainment under an applicable federal or state ambient air quality standard (see Section 4.3.5.1, Threshold AQ-C)
- Expose sensitive receptors to substantial pollutant concentrations (see Section 4.3.5.1, Threshold AQ-D)
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (See Section 4.7.5.1, Threshold GHG-A)
- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies (see Section 4.11.5.1, Threshold NOI-A)
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project (see Section 4.11.5.1, Threshold NOI-D)
- Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths (see Section 4.13.5.1, Threshold TRA-1)

6.4 Growth Inducement

A proposed action can result in growth inducement if it would foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth inducement may include actions that would remove obstacles to population growth or encourage or facilitate growth.

The PCCP Rehabilitation Program would rehabilitate existing pipelines. It would not increase the capacity of the pipelines nor add additional pipelines. Therefore, it would not foster economic or population growth or result in the construction of additional housing. It would not remove obstacles to population growth or encourage or facilitate growth.

6.5 Significant Irreversible Changes

The State CEQA Guidelines mandate that an EIR address any significant irreversible environmental changes that would occur if the proposed action were implemented (State CEQA Guidelines Section 15126.2(s)). Such effects would occur if:

- The proposed action would involve a large commitment of nonrenewable resources;
- The primary or secondary impacts of the proposed action would generally commit future generations to similar uses;
- The proposed action could result in environmental accidents; or
- The proposed action would involve consumption of resources that are not justified.

The PCCP Rehabilitation Program would use nonrenewable resources in the form of construction materials and energy resources. Use of these resources, however, would not represent a large commitment of resources because rehabilitation would occur over a 25-year period and would not negatively affect their availability.

The proposed program would not change land uses because it would include rehabilitation of existing pipelines. In addition, the pipelines are located underground, primarily in street rights-of-way, allowing other uses of the land above the pipelines. Therefore, the proposed program would not commit future generations to similar uses.

The PCCP Rehabilitation Program, with mitigation discussed in Section 4.7, *Hazards and Hazardous Materials*, would not result in significant risks of environmental accidents.

Although the proposed program would involve the consumption of resources, this consumption is justified because rehabilitation of the pipelines would reduce risks of pipeline failures that could result in loss of water resources.

Chapter 7

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Chapter 8

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Chapter 9

Responses to Comments

9.1 Comments Received on Draft PEIR



State Water Resources Control Board

November 7, 2016

Mr. Hans Vandenberg
The Metropolitan Water District of Southern California
Environmental Planning Team
P.O. Box 54143 Los Angeles, California 90054-0153

Dear Mr. Vandenberg

INFORMAL COMMENTS ON THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED PRESTRESSED CONCRETE CYLINDER PIPE REHABILITATION PROGRAM, STATE CLEARINGHOUSE NO. 2014121055

State Water Resources Control Board (State Water Board) staff received the Metropolitan Water District of Southern California (Metropolitan Water District) Draft Program Environmental Impact Report (DPEIR) for the Concrete Cylinder Pipe Rehabilitation Program (Project) on September 6, 2016. I recognize the DPEIR comment period closed but the Metropolitan Water District may find these comments useful while preparing any related WQC application materials.

The proposed Project entails rehabilitating approximately 100 miles of five existing subsurface water delivery pipelines by either relining existing pipe with steel or replacing existing pipe with new welded steel pipe. The size and scope of the DEIR does not allow a comprehensive review of all details in the time provided. Therefore, this review covers general topics of concern that need to be addressed in order for Water Board staff to evaluate project impacts to waters of the state.

1 The Water Boards expect that for any project subject to their permitting authority, every effort will be made to avoid and minimize impacts to all waters of the state to the maximum extent practicable, and to ensure no net loss of any waters or their beneficial uses. State Water Board staff will work with the project proponents and other regulatory agencies to ensure that this goal is met by ensuring project activities are protective of beneficial uses. Although we recognize the importance of this Project, it has the potential to adversely impact water quality and beneficial uses during construction as well as over the life of the Project.

California law protects all waters of the state. All surface waters and groundwater are considered waters of the state, which include, but are not limited to, aquifers, drainages, streams, washes, ponds, pools, wetlands, concrete-lined channels and flood control channels.

In order for Water Board staff to fully evaluate all potential project impacts to water quality and hydrology we request a full delineation of surface water resources be performed. Many small, ephemeral drainages that are not represented as blue-line features on topographic maps and

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

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Metropolitan Water District

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November 7, 2016

- 1 cont. lack riparian vegetation may still be considered waters of the State and thus can be subject to Water Board jurisdiction. Metropolitan Water District must clearly identify all surface water resources within the Project area and evaluate the Project's potential impacts on these resources, both on site and off site, upstream and downstream.
- 2 In the event that unavoidable impacts occur, mitigation for the loss of area or beneficial use function mitigation shall be provided. Project impacts may all be temporary, but it should be noted that the Water Board requires on-site in-kind mitigation for all temporary impacts. In addition, the DEIR does not discuss any compensatory mitigation options. Temporary impacts not restored to pre-project condition within a specified amount of time (most typically one-year) result in a temporal loss. Impacts resulting in a temporal loss and permanent impacts must be offset through compensatory mitigation. The Metropolitan Water District may want to prepare a description of on-site temporary impact mitigation activities, and, if anticipated, a description of mitigation for temporal loss or permanent impacts.
- We encourage you describe how the project would affect beneficial uses. The Hydrology and Water Quality Section narrative description of Water Board beneficial uses is noted, but we ask the Metropolitan Water District list all beneficial uses impacted by Project activities and how those beneficial uses would be protected. Water Board Basin Plan Hydrologic Units are available online. You may also contact Water Board staff to request an ArcMap layer that geographically links beneficial uses to water features.
- 3 The Project falls within the jurisdiction of two Regional Water Boards, the Los Angeles Regional Water Board and the Santa Ana Regional Water Board. Since the Project spans more than one water quality control region, the State Water Board's Division of Water Quality is responsible for permitting activities that excavate or dredge in state waters or that add fill material to state waters. For those activities, the State Water Board issues a Clean Water Act 401 water quality certification, if the project proponent obtains a CWQS Section 404 permit from the United States Army Corps of Engineers; otherwise, a waste discharge requirement (WDR) would be issued. In addition, the State Water Board issues storm water construction permits for dischargers whose projects disturb more one or more acres of soil or whose projects disturbs less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Permits verify that project activities comply with water quality standards.
- Efficient certification requires early coordination between all agencies and the Metropolitan Water District. We ask that the Metropolitan Water District contact us to schedule a pre-application consultation during which we will discuss project specific potential compensatory mitigation requirements and State Water Board certification procedures. Ideally, staff from the California Department of Fish and Wildlife and the United States Army Corps of Engineers will be present at this pre-application consultation.
- 4 Additionally, the State Water Board is proposing Procedures for Discharges of Dredged or Fill Material to Waters of the State (proposed Procedures), for inclusion in the Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The proposed Procedures consist of three major elements: 1) a statewide wetland area definition; 2) wetland delineation procedures; and 3) Procedures for the regulation of dredged or fill discharges to waters of the state. Future Project certifications or WDRs may be subject to requirements of the proposed Procedures depending on how certification application timing aligns with adoption of the proposed Procedures.

Metropolitan Water District


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November 7, 2016

Thank you for your time. Water Board staff will work with the Metropolitan Water District to address these comments during our certification application process to ensure impacts to water quality and beneficial uses of water are avoided and minimized to the greatest practicable extent.

If you have any questions regarding this letter, please contact me at (916) 322-7789 (jean.bandura@waterboards.ca.gov) or Bill Orme, 401 Program Manager, at (916) 341-5464 (bill.orme@waterboards.ca.gov).

Sincerely,


Jean Bandura

9.2 Responses to Comments

9.2.1 Response to Comment 1

Comment noted. Metropolitan Water District of Southern California (Metropolitan) will work with State Water Board staff to avoid, minimize and/or mitigate impacts, as necessary if rehabilitation projects have the potential to adversely impact waters of the state.

The proposed Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program would include a series of rehabilitation projects, implemented incrementally over time. Construction may occur within or near impervious concrete channels, natural channels or streams, and natural land (hillsides and undeveloped areas), however most construction would generally take place in existing public rights-of-way, ensuring impacts on hydrology and water quality, including waters of the state, are minimized. Further analysis of future rehabilitation projects would include an evaluation of affected surface water resources. Additionally, as discussed in the Draft PEIR, Section 4.9.5.1, *Threshold WQ-A, Violate Any Water Quality Standards or Waste Discharge Requirements*, construction of each of the proposed projects will require individual construction discharge permits. In addition, as outlined in the hydrology and water quality analysis, Section 4.9.4.2, *Methodology*, Metropolitan would require all contractors to comply with all applicable regulations, including Municipal and Construction General Permits for all proposed projects in the PCCP Rehabilitation Program. Further, MM HYD-1, Implementation of a Grading and Drainage Plan, requires the implementation of grading and drainage plans developed in coordination with the city and/or county in which the project will be located. Because the work zone would be restored to existing conditions upon project completion, the Draft PEIR determined that impacts would be less than significant.

Water resources were also addressed in Section 4.2.5.1, *Threshold BIO-C, Have a Substantial Adverse Effect on Federally Protected Wetlands, as Defined by Section 404 of the Clean Water Act, through Direct Removal, Filling, Hydrological Interruptions, or Other Means*. The potential for the project to result in significant impacts to water resources was identified in the Draft PEIR, and mitigation was included to protect these resources (MM BIO-5, Adverse Impacts on Wetlands). This mitigation requires that pre-construction surveys be conducted at the project level, that any resource within 100 feet of ground disturbance be mapped and flagged for avoidance, and that other measures are taken to protect these surface water resources, including obtaining permits, if required. MM BIO-5, Adverse Impacts to Wetlands, has been revised to specifically include coordination with affected agencies and application for appropriate regulatory permits, if required.

9.2.2 Response to Comment 2

Comment noted. When the locations of ground-disturbing activities for future rehabilitation projects are known, Metropolitan will describe whether, and if so, how each project may affect beneficial uses and how such uses could be protected. Metropolitan will work with State Water Board staff, as necessary, if rehabilitation projects have the potential to adversely impact waters of the state to avoid, minimize and/or mitigate such impacts.

9.2.3 Response to Comment 3

Comment noted. The PCCP Rehabilitation Program falls within the jurisdiction of two Regional Water Boards, the Los Angeles Regional Water Board and the Santa Ana Regional Water Board. Where an individual rehabilitation project falls within the jurisdiction of two Regional Water Quality Control Boards and the project has the potential to adversely impact waters of the state, Metropolitan will coordinate with the State Water Board and other appropriate regulatory agencies to discuss any compensatory measures that may be applicable and necessary. It is anticipated, however, that individual projects would not span more than one Regional Water Board jurisdiction. Therefore, when a project has the potential to adversely affect waters of the state and falls within only one Regional Water Board jurisdiction, Metropolitan will work with the appropriate Regional Water Quality Board for that project.

9.2.4 Response to Comment 4

Comment noted. Metropolitan will comply with any new requirements that may be adopted during the course of implementing the PCCP Rehabilitation Program that may be applicable for individual project-level rehabilitation projects.

Appendix A

Notice of Preparation/Initial Study Checklist

Notice of Preparation/Initial Study Checklist

FOR THE

PRE-STRESSED CONCRETE CYLINDER PIPE REHABILITATION PROGRAM AND SECOND LOWER FEEDER REHABILITATION PROJECT

The Metropolitan Water District of Southern California
Environmental Planning Team
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Metropolitan Report No. 1481
December 2014



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LIST OF ACRONYMS

AMP	Allen-McColloch Pipeline
Basin	South Coast Air Basin
CEQA	California Environmental Quality Act
Cfs	cubic feet per second
CNDDDB	California Natural Diversity Database
CO	carbon monoxide
EIR	environmental impact report
Farmland	Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gas
I-	Interstate
Metropolitan	Metropolitan Water District of Southern California
MS4	Municipal Separate Storm Sewer System
NCCP	Natural Community Conservation Plan
NO ₂	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
PCCP	Pre-Stressed Concrete Cylinder Pipe
PM10	particulate matter less than 10 microns in size
PM2.5	particulate matter less than 2.5 microns in size
proposed program	Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program
proposed project	Second Lower Feeder Rehabilitation Project
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SEA	Significant Ecological Area
SLF	Second Lower Feeder
SR-	State Route
SWPPP	Stormwater Pollution Prevention Plan
USFWS	U.S. Fish and Wildlife Service

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ENVIRONMENTAL CHECKLIST FORM

PROGRAM AND PROJECT DESCRIPTION

1. Title

Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation Project

2. Lead Agency Name and Address

The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, California 90012

Mailing Address:

P.O. Box 54153
Los Angeles, California 90054-0153

3. Contact Person and E-mail

Diane Doesserich, Environmental Specialist
EPT@mwdh2o.com

4. Location

Allen-McColloch Pipeline (AMP), Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder (proposed program)

The proposed Pre-Stressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed program) would rehabilitate subsurface water distribution pipelines (also known as feeders¹), which are located primarily in Metropolitan Water District of Southern California (Metropolitan) owned rights-of-way and existing public roads. The pipelines that would be rehabilitated extend through the following cities and counties:

Allen-McColloch Pipeline (AMP)

- Anaheim
- Lake Forest
- Irvine
- Mission Viejo
- Orange
- Tustin
- Yorba Linda

Calabasas Feeder

- Calabasas
- Hidden Hills
- Los Angeles

¹ A feeder and a pipeline are equivalent. Unless referring to the formal name, pipeline will be used throughout this document.

Rialto Pipeline

- Claremont
- Rancho Cucamonga
- San Dimas
- Fontana
- Rialto
- Upland
- La Verne
- San Bernardino
- Unincorporated San Bernardino County

Sepulveda Feeder

- Culver City
- Inglewood
- Gardena
- Los Angeles
- Hawthorne
- Torrance

Second Lower Feeder (proposed project)

The proposed Second Lower Feeder (SLF) Rehabilitation Project (proposed project) would rehabilitate approximately 30 miles of PCCP within the existing 40 miles of the SLF. The SLF is located primarily in Metropolitan owned rights-of-way and public roads, and it extends through the following cities and counties:

Second Lower Feeder

- Anaheim
- Cypress
- Long Beach
- Placentia
- Yorba Linda
- Buena Park
- Lakewood
- Los Alamitos
- Rolling Hills Estates
- Unincorporated Los Angeles County
- Carson
- Lomita
- Los Angeles
- Torrance
- Unincorporated Orange County

Figures 1a through 1f shows the regional vicinity of the proposed program and the proposed project. Figures 2a through 2c and 3a through 3c show the local vicinity of the proposed project. Table 1 summarizes the locations of the various pipelines that would be rehabilitated under the proposed program and project.

5. Sponsor's Name and Address

The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, California 90012

6. General Plan Land Use Designations

As noted in Section 4, the proposed program and proposed project extend through numerous cities and counties. Because these pipelines are located primarily within Metropolitan owned rights-of-way and public roads, the general plan land use designations are typically related to Public Services, Utilities, or Open Space. However, the general plan land use designations also include, but are not limited to, General Commercial, Residential, Limited Manufacturing, Business Park, Recreation, and Public Facilities. It should be noted that California Government Code Section 53091 exempts Metropolitan, as a regional public water purveyor and utility, from local zoning and building ordinances. Despite this exemption from local land use planning jurisdiction, for purposes of full disclosure of potential program and project impacts on the environment, this EIR evaluates the program and the project's compatibility with relevant general plan policies.

Table 1. Summary of Five Pipeline Characteristics and Their Locations

Feeder	Construction Year	Total Length (miles)	Length of PCCP (miles)	Starting Location	Terminus Location	Counties	Cities
Allen-McColloch Pipeline (AMP)	1970	26	9	Diemer Water Treatment Plant's Finished Water Reservoir, City of Yorba Linda	El Toro Water District's El Toro Reservoir, City of Mission Viejo	Orange	Anaheim, Irvine, Lake Forest, Mission Viejo, Orange, Tustin, and Yorba Linda
Calabasas Feeder	1975	9.3	9.3	West Valley Feeder No. 2, City of Los Angeles	Las Virgenes Municipal Water District's Service Connection, City of Calabasas	Los Angeles	Calabasas, Hidden Hills, and Los Angeles
Rialto Pipeline	1970	30	16	California Department of Water Resources' Devil Canyon Facility, City of San Bernardino	San Dimas Power Plant Control Structure, City of San Dimas	Los Angeles, San Bernardino	Claremont, Fontana, La Verne, Rancho Cucamonga, Rialto, San Bernardino, San Dimas, and Upland
Sepulveda Feeder	1970	42	37	Joseph Jensen Water Treatment Plant, City of Los Angeles	SLF Interconnection, City of Torrance	Los Angeles	Culver City, Gardena, Hawthorne, Inglewood, Los Angeles, and Torrance
Second Lower Feeder (SLF)	1966	39	30	Diemer Water Treatment Plant, City of Yorba Linda	Palos Verdes Reservoir, City of Rolling Hills Estates	Orange, Los Angeles	Anaheim, Buena Park, Carson, Cypress, Lakewood, Lomita, Long Beach, Los Alamitos, Los Angeles, Placentia, Rolling Hills Estates, Torrance, and Yorba Linda

7. Zoning

As noted in Section 4, the proposed program and project pipelines extend through numerous cities and counties. Because these pipelines are located primarily within Metropolitan owned rights-of-way and public roads, the zoning designations are typically related to Public Services, Utilities, or Open Space. However, the zoning designations also include, but are not limited to, Commercial Recreation, Residential (various densities), Light Manufacturing, Public Facilities, and Office.

8. Introduction of the Proposed Program and Project Descriptions

Metropolitan is proposing to rehabilitate the PCCP portions of the following five pipelines:

- AMP
- Calabasas Feeder
- Rialto Pipeline
- SLF
- Sepulveda Feeder

The first pipeline to be rehabilitated by Metropolitan would be the SLF under the proposed project, followed by the remaining four pipelines under the proposed program over a period of approximately 15 to 20 years. Metropolitan will prepare a joint program-level/project-level environmental impact report (EIR) for the proposed program and the proposed project to analyze environmental impacts resulting from rehabilitation activities. Section 9 describes proposed program components and rehabilitation activities applicable to all pipelines, and Section 10 provides information regarding proposed project components and rehabilitation activities for the SLF.

9. Description of Proposed Program

Proposed Program Background

Metropolitan was formed in 1928 under an enabling act of the California legislature. Metropolitan includes 26 cities and water districts (member agencies) that provide drinking water to approximately 18.4 million people in parts of Los Angeles, Orange, San Bernardino, Riverside, San Diego, and Ventura counties. Metropolitan's mission is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible manner.

Metropolitan has more than 830 miles of pipelines that distribute drinking water to its member agencies. The pipelines are made of various materials, including PCCP. Between 1962 and 1985, 163 miles of PCCP was installed throughout the service area. PCCP lines range from 42 to 201 inches in diameter; the majority of which are 78 inches in diameter or larger. Under certain subsurface conditions, PCCP lines have an elevated risk of failure compared with other types of pipe. PCCP failures can occur without warning. Such failures can be catastrophic, compromising system reliability and resulting in unplanned major repairs, significant costs from service interruptions and repair work, and potential third-party damages. In response to this risk, in 1999, Metropolitan developed a program to inspect and assess all 163 miles of PCCP within its distribution system. In 2011, Metropolitan initiated a comprehensive program of inspections to evaluate and rank PCCP lines with the highest risk of failure. The data indicate that the following five pipelines represent the

highest risk: AMP, Calabasas Feeder, Rialto Pipeline, Sepulveda Feeder, and the SLF. Under the proposed program, Metropolitan proposes to rehabilitate the PCCP portions of these five pipelines. Rehabilitation would occur along approximately 70 miles of the AMP, Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder and approximately 30 miles of the SLF (described further in Section 10, Description of Project, below). The first pipeline to be rehabilitated by Metropolitan would be the SLF, under the proposed project, followed by the remaining four pipelines (AMP, Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder), under the proposed program, over 15 to 20 years. The sequence of rehabilitation is subject change.

The characteristics and locations of the five pipelines are described above in Table 1.

Program Objectives

The proposed program is designed to maintain the reliability of Metropolitan's distribution system. The proposed program would minimize risks associated with failures by proactively rehabilitating each portion of PCCP, starting with the pipes that show the greatest risk of failure. This would help Metropolitan avoid possible unplanned system outages, thereby increasing service reliability for all customers within Metropolitan's service area.

The objectives of the proposed program are to:

- Improve system reliability by minimizing the likelihood of PCCP failure.
- Reduce the higher costs of emergency repairs.
- Reduce unplanned outages.

The following sections describe the various components, rehabilitation activities, construction equipment, and timing and phasing of the proposed program, including the proposed project, if applicable. Further details regarding the proposed project are provided in Section 10.

Program Components

The proposed program consists primarily of pipeline rehabilitation. For pipelines the term "rehabilitation" is used to describe either relining of the pipe or installation of supplemental or relocated lines. For valves and appurtenant structures, the term "rehabilitation" is used to describe either refurbishment or replacement. Rehabilitation of valves and appurtenances, such as isolation valves, blow-off valves, air-release and vacuum valves, manholes, and meters, may be required along with rehabilitation of the pipelines. All of these components, as they relate to the proposed program and the proposed project, are described below.

Rehabilitation of PCCP

The proposed program would consist primarily of rehabilitating the PCCP portions of the pipelines by lining them with steel. This is known as "slip line" construction. New liner segments, approximately 20 feet long, would be inserted into existing PCCP pipelines by cutting into the existing pipelines, moving the new liner segments into position to reline the PCCP sections, and welding together the new liner segments. The cut sections of the PCCP would be encased in concrete after the new liner segments are welded together.

In some cases, it may be necessary to relocate existing PCCP with welded steel pipe in lieu of using steel liners to rehabilitate the PCCP. Portions of the PCCP would be left in place and new steel

pipeline segments would be used. Relocation would involve excavating an open trench along the length of the existing pipeline or in an appropriate location in the vicinity of the existing pipeline, placing bedding for the new pipe to sit upon, and installing the new pipe. The dimensions of the open trench and the amount of soil that would be excavated would correspond to the depth and diameter of the new pipe, which would typically be between 54 and 96 inches (or approximately 6 and 8 feet), similar to the diameters of the existing pipelines. If shored, the open trench would generally be a few feet wider than the diameter of the pipe. If open-cut, the trench may be several times wider than the diameter of the pipeline, depending on the depth of the line and soil conditions. Metropolitan's lines are usually installed to a depth of at least 10 feet below existing grade. After installation the pipe trench is backfilled and the surface is restored.

Rehabilitation of Isolation Valves and Appurtenant Structures

Isolation valves are located subsurface and are used to divide the pipelines into more easily managed sections and separate one part of the pipeline from another. These valves allow Metropolitan to shut off water flow in various sections of the pipelines and drain the water from the section when needed so the pipeline can be accessed for interior work. Under the proposed program, Metropolitan would either refurbish or replace the existing isolation valves along the five pipelines. Refurbishing or replacing isolation valves would require excavation for removal and reinstallation of the valves. In some locations new isolation valves would be added to provide continued water supply to its member agencies. New valves would require construction of new subsurface vaults to house the valves.

Appurtenant structures installed along a pipeline, such as air-release and vacuum valves, blow-offs, meters, and access manholes, release pressure from the pipeline and allow the pipeline to be dewatered and accessed. Some of the appurtenant structures located along the five pipelines may need rehabilitation. Rehabilitation could occur during the slip-lining process or new pipe installation. However, when necessary, appurtenance rehabilitation could also be separate and independent in location and time from slip-line or new pipe installation.

Proposed Program Work Description

The proposed program would include planned rehabilitation of all PCCP sections and any necessary appurtenance rehabilitation along the five pipelines, including the SLF (described in Section 10, Description of Proposed Project). Rehabilitation would include site preparation and excavation, including staging; PCCP isolation, bulkhead construction (if needed), dewatering, and demolition; relining of the pipeline (in some areas, supplemental or replacement pipelines would be required) and replacement or refurbishment of isolation valves and appurtenant structures; and reactivation of the rehabilitated PCCP line and site restoration. Information regarding these activities is provided in subsections A through D below.

Most of the rehabilitation would be located in urban areas, within Metropolitan owned rights-of-way and public roads. Metropolitan would coordinate with local agencies and the surrounding communities prior to and during rehabilitation activities. As part of the proposed program, Metropolitan would also coordinate with member agencies prior to and during rehabilitation activities, thereby reducing the potential for a service interruption during rehabilitation activities. Minor protection and/or relocation work for existing utilities may be needed in some locations to provide an adequate work area for rehabilitation activities. Metropolitan would work with utility owners to coordinate such activity.

A. Site Preparation and Excavation

Site preparation and excavation would include preparing the excavation sites, work zones, and staging areas, as well as implementing traffic management plans for directing traffic during rehabilitation. Excavation sites along a pipeline would be approximately 1,500 to 2,000 feet apart. These sites would allow access to the pipeline and insertion of the new steel liner. An opening would be excavated and shored. The depth of the excavation site would be equal to the depth of the PCCP or appurtenant structure, with the top of the pipe or structure usually about 10 feet from the ground surface. Staging areas for storing and staging construction equipment and materials would be established either adjacent or close to the work zones. Traffic control measures would remain in place during the subsequent work activities until site restoration is complete.

B. PCCP Isolation and Dewatering

Each section of PCCP where work would be performed would be taken out of service through a dewatering process to provide access to the pipeline's interior and ensure safe working conditions. This process would be initiated by closing existing isolation or service connection valves. Once a pipeline section is isolated (i.e., all connection points are fully closed), dewatering would take place. If needed, temporary bulkheads may be installed within the existing pipe to allow certain portions of the line to be returned to service during the rehabilitation to allow deliveries to member agency service connections.

C. PCCP Relining

To reline an existing section of PCCP, a section of the pipe would first be cut out and removed to provide access to the remainder of the pipe where rehabilitation would occur. Next, equipment would be placed such that new collapsible steel liners could be lowered down into the excavation site and then inserted into the existing PCCP line. After all liner sections have been installed, pipe connections would be restored.

D. Pipeline Reactivation and Site Completion

Contractor materials and equipment would then be removed, and the pipe would be cleaned and disinfected. Upon confirmation that the pipe has passed pressure testing and disinfection testing, Metropolitan would restore service to customers. The excavation site would be backfilled and compacted, and the ground surface would be restored. Previously excavated materials would be used for backfill, where appropriate. Excess materials would be hauled off site. Work zones and staging areas would be restored to pre-existing conditions. Traffic control measures would be removed after site restoration activities are complete.

Proposed Program Construction Equipment

Rehabilitation would require a combination of different types and quantities of construction equipment. The expected types of construction equipment include, but are not limited to, welding trucks, water trucks, low-bed trailers, dump trucks, excavators, loaders, generators, tractors, cranes, concrete delivery trucks, graders, and construction workers' vehicles.

Proposed Program Phasing

Work on all five pipelines is anticipated to occur over a period of approximately 15 to 20 years, beginning with the SLF in 2016 and extending through the early 2030s. Construction on some sections of the five pipelines and between pipelines would most likely occur concurrently.

The phasing and duration of work at each pipeline would depend on the length of the individual PCCP line being rehabilitated. Each pipeline would be divided into sections that would be hydraulically isolated to allow for rehabilitation activities. The length of PCCP to be rehabilitated would vary and would depend on the distance between isolation valves and bulkheads along the pipeline. Actual pipeline rehabilitation sequencing would be based on factors such as system operations, water supply availability, and member agency demands. Rehabilitation of some sections may be performed concurrently. Construction work within each section would be expected to take a minimum of 2 to 3.5 months up to a maximum of 9 months.

Operation of Pipelines

There would be no change between baseline operation of the distribution system and operation of the distribution system under the proposed program. The proposed program would increase the reliability and service life of the various PCCP lines and appurtenant structures. The proposed program would not result in the installation or operation of new pipelines and thus would not expand the existing water supply distribution system.

10. Description of Proposed Project: Second Lower Feeder

All proposed program components, rehabilitation activities, equipment, and phasing described above under Section 9, Description of Proposed Program, are applicable to the proposed project. Additional information about the proposed project is provided below.

Proposed Project Background

As described in Table 1, the SLF, which was constructed in the late 1960s, is approximately 39 miles long, with approximately 30 miles of PCCP. The eastern end of SLF begins at the Diemer Water Treatment Plant in the city of Yorba Linda. The SLF traverses many local governmental jurisdictions and ends at the Palos Verdes Reservoir in the city of Rolling Hills Estates on the western end. It is located in both Los Angeles and Orange counties. The SLF crosses beneath the following major freeways and transportation corridors, from east to west: Imperial Highway, the Alameda Corridor rail lines, Burlington Northern Santa Fe Railway, Metrolink, Interstate (I-) 605, Long Beach Municipal Airport, the Los Angeles County Metropolitan Transportation Authority's Blue Line, I-710, I-405, I-110, the Union Pacific Railroad, and Western Avenue. The pipeline extends primarily through an urbanized area that includes flood control channels, numerous underground utility lines, natural gas lines, and oil lines. Figures 2a through 2c and 3a through 3c show the local vicinity of the SLF. Table 2 summarizes the general surrounding land uses and local jurisdictions through which the SLF traverses and expected locations of work areas along the pipeline.

Table 2. Summary of Proposed Project Locations

Section Number	Pipeline Station Numbers	Approximate Length (feet)	Surrounding Land Uses and Location(s)	Rehabilitation Locations ¹
1	1724+40 to 1859+80	13,540	<ul style="list-style-type: none"> • Predominately residential • Cities of Los Angeles and Carson 	<ul style="list-style-type: none"> • 11 proposed work areas • 8 staging areas
2	1589+40 to 1724+40	13,500	<ul style="list-style-type: none"> • Predominately residential • City of Carson 	<ul style="list-style-type: none"> • 9 proposed work areas • 3 staging areas
3	1417+27 to 1589+40	17,213	<ul style="list-style-type: none"> • Industrial, residential, and commercial uses • Cities of Long Beach and Carson 	<ul style="list-style-type: none"> • 9 proposed work areas • 3 staging areas
4	1174+77 to 1269+65	10,800	<ul style="list-style-type: none"> • Predominately residential • Unincorporated Los Angeles County • City of Long Beach 	<ul style="list-style-type: none"> • 7 proposed work areas • 2 staging areas
	1859+80 to 1865+41		<ul style="list-style-type: none"> • Predominately residential • Cities of Torrance and Los Angeles 	<ul style="list-style-type: none"> • 2 proposed work areas • 1 staging area
5	1865+41 to 1902+95	11,378	<ul style="list-style-type: none"> • Predominantly residential • Cities of Los Angeles and Torrance 	<ul style="list-style-type: none"> • 11 proposed work areas • 5 staging areas
	2040+60 to 2116+84		<ul style="list-style-type: none"> • Predominantly residential • Cities of Lomita and Rolling Hills Estates 	
6	1902+95 to 2040+60	13,765	<ul style="list-style-type: none"> • Predominantly residential • Cities of Lomita, Torrance, and Los Angeles 	<ul style="list-style-type: none"> • 11 proposed work areas • 4 staging areas

Section Number	Pipeline Station Numbers	Approximate Length (feet)	Surrounding Land Uses and Location(s)	Rehabilitation Locations ¹
7	1269+65 to 1409+45	13,980	<ul style="list-style-type: none"> • Predominately industrial, with some residential and commercial uses • City of Long Beach 	<ul style="list-style-type: none"> • 8 proposed work areas • 1 staging area
8	1409+45 to 1475+25	782	<ul style="list-style-type: none"> • Predominately industrial, with some residential and commercial uses • Cities of Long Beach and Lakewood 	<ul style="list-style-type: none"> • 2 proposed work areas • 1 staging area
9	824+75 to 975+19	15,044	<ul style="list-style-type: none"> • Residential, with some commercial uses • Cities of Anaheim, Buena Park, and Cypress 	<ul style="list-style-type: none"> • 13 proposed work areas • 5 staging areas
10	1065+60 to 1174+77	10,917	<ul style="list-style-type: none"> • Predominately single-family residential, with a few commercial uses • Cities of Cypress, Los Alamitos and Long Beach 	<ul style="list-style-type: none"> • 8 proposed work areas • 11 staging areas
11	975+19 to 1065+60	9,041	<ul style="list-style-type: none"> • Predominately single-family residential, with a few commercial uses • City of Cypress 	<ul style="list-style-type: none"> • 4 proposed work areas • 3 staging areas
12	56+18 to 291+72	23,554	<ul style="list-style-type: none"> • Primarily residential • Unincorporated area of Orange County • Cities of Yorba Linda and Placentia 	<ul style="list-style-type: none"> • 23 proposed work areas • 11 staging areas
13	291+72 to 342+40	5,068	<ul style="list-style-type: none"> • Primarily residential • Unincorporated area of Orange County • Cities of Placentia and Anaheim 	<ul style="list-style-type: none"> • 6 proposed work areas • 4 staging areas
¹ This is a conservative estimate of the number of rehabilitation locations; some rehabilitation locations may be shared between or included in multiple sections.				

The SLF pipeline has inside diameters ranging from 78 to 84 inches and operates at pressures of up to 340 pounds per square inch. The SLF, which has interconnections to six other Metropolitan pipelines, supplies water to the Central Pool portion of Metropolitan's distribution system as well as the cities of Long Beach, Los Angeles, and Torrance; the Central Basin Municipal Water District; and the Municipal Water District of Orange County. The SLF PCCP sections were identified by Metropolitan as having the highest risk of reduced service life expectancy and are therefore proposed for rehabilitation first. The objectives for the proposed project are the same as those described above for the proposed program (Section 9).

Proposed Project Rehabilitation Activities

The rehabilitation of the PCCP lines of the SLF is divided into 13 sections. Using this approach, Metropolitan would be able to ensure few and infrequent interruptions in the water supply to member agencies while it rehabilitates the pipeline. Table 2 summarizes the sections, pipeline station numbers within the sections, surrounding land uses and locations, and rehabilitation activities expected within each section. Figures 4a through 4f show the different pipeline sections and general locations of where rehabilitation activities would occur. The number of rehabilitation activities described in the table is conservative and most likely over-estimates the number of activities actually performed during rehabilitation. These activities are based on conceptual designs. The actual number of rehabilitation activities would be refined and most likely reduced during final design using the considerations described in the Proposed Project Phasing section, below. Some rehabilitation activities may be shared between sections.

In addition to rehabilitation of the PCCP and appurtenant structures along the PCCP portions of the SLF, Metropolitan would rehabilitate or replace some appurtenant equipment structures and vaults along existing steel-lined sections of the SLF.

Proposed Project Construction Equipment

The construction equipment for the proposed program described above in Section 9 would be the same as that needed for the proposed project.

Proposed Project Phasing

Phasing for the proposed project would be similar to the phasing for the proposed program (as described in Section 9). Design and rehabilitation of the SLF would generally occur first and the design and rehabilitation of the other pipelines in the proposed program occurring at later dates.

Metropolitan's phasing for the proposed project would involve numerous considerations, however, sections with significant lengths and without service connections would be prioritized over those that would require more involved efforts (i.e., installing temporary bulkheads or isolation points to maintain the water supply). Additionally, rehabilitation would be scheduled during months with low water demand (i.e., late fall, winter, early spring).

Final prioritization of phasing for rehabilitation activities would consider:

- Completing all work in an individual city or community within one section and within the shortest timeframe feasible.
- Coordinating with cities to avoid conflicts with other public improvement projects, moratoriums, community events, and seasonal events as well as local business disruptions.
- Coordinating with member agencies to determine the length of any required outage to their service connections.

Table 3 summarizes the sections of the pipeline and estimated rehabilitation start and end years. The start of rehabilitation includes procurement and prefabrication of the steel liners off site.

Table 3. Summary of Estimated Section Rehabilitation (Years)

Section(s)	Estimated Start*	Estimated End
1	2016	2017
2	2017	2018
3	2018	2019
4	2019	2020
5-12	2020	2033
*includes offsite pre-manufacturing		

Operation of Pipelines

Similar to the operation of the distribution system under the proposed program as described in Section 9 above, there would be no change between baseline operating conditions and conditions under the proposed project. The SLF would continue to provide water to member agency jurisdictions in the service area.

11. Proposed Program and Project Surrounding Land Uses and Setting

The proposed program is located in urban and rural settings within Orange, Los Angeles, and San Bernardino counties. The proposed project is located in a primarily urban setting in Orange and Los Angeles counties. The pipelines and appurtenant structures are primarily subsurface. Land uses include residential, commercial, and industrial uses (e.g., businesses, restaurants, manufacturing); institutional uses (e.g., schools, churches); public facilities and services (e.g., fire stations, police stations, airports, libraries); and recreational and open space areas (e.g., conservation areas, developed parks, undeveloped parks). A general description of the surrounding land uses relevant to the proposed project is provided in Table 2, above (Section 10).

12. Other Public Agencies Whose Approval Is Required (e.g., permits, financial approval, or participation agreement)

Permits or approvals that could be required include the following:

- California Air Resources Board portable equipment registration and/or South Coast Air Quality Management District permit to operate for construction equipment.
- California Department of Transportation, Districts 7 and 12 encroachment permits.
- California Division of Occupational Safety and Health Tunnel Safety Order compliance.

- Utility construction permits and traffic control plans from the Cities of Anaheim, Buena Park, Calabasas, Carson, Claremont, Culver City, Cypress, Fontana, Gardena, Hawthorne, Hidden Hills, Inglewood, Irvine, Lakewood, La Verne, Lomita, Long Beach, Los Alamitos, Los Angeles, Mission Viejo, Orange, Placentia, Rancho Cucamonga, Rialto, Rolling Hills Estates, San Bernardino, San Dimas, Torrance, Tustin, Upland, and Yorba Linda and the Counties of Los Angeles, Orange, and San Bernardino.
- Conformance with applicable State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) and/or Municipal Separate Storm Sewer System (MS4) requirements.
- Review and approval by Long Beach Airport and Federal Aviation Administration.
- Orange County Flood Control District and Los Angeles County Flood Control District permits.

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PURPOSE OF THE INITIAL STUDY

Metropolitan will prepare an EIR for the proposed program and project. Because the need for an EIR has already been determined, the purpose of this initial study checklist is to help focus the draft EIR and provide information that will allow a meaningful comment on the anticipated scope of the draft EIR. Specifically, this initial study is intended to (1) inform responsible agencies and the public of the nature of the proposed program and project, as well as the locations; (2) identify impacts that would clearly be less than significant or have “no impact” and therefore would not be discussed further in the draft EIR; and (3) provide a general description of the topics that are intended to be addressed in the draft EIR.

This initial study is separated into an evaluation of the proposed program (AMP, Calabasas, Rialto, and Sepulveda) and an evaluation of the proposed project (Second Lower Feeder). These evaluations determined that there would be “no impact” or “less than significant impact” on some of the environmental impact categories examined as a result of the rehabilitation of the proposed program and project; therefore, those impacts will not be further addressed in the draft EIR.

Proposed Program: AMP, Calabasas, Rialto, Sepulveda

Table 4 below identifies the environmental resources proposed to be addressed in the draft EIR for the proposed program. The checked box identifies which potentially significant impacts were identified that will be addressed in the draft EIR.

Table 4. Program-Level Environmental Factors Potentially Affected

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

Proposed Project: Second Lower Feeder

Table 5 below identifies the environmental impacts to be addressed in the draft EIR for the proposed project. The checked boxes identify which potentially significant impacts were identified that will be addressed in the draft EIR.

Table 5. Project-Level Environmental Factors Potentially Affected

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

Organization of the Initial Study

This initial study uses a modified version of the checklist set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. It indicates whether an environmental impact category will be analyzed in the draft EIR or will not require further analysis. The “No Additional Analysis Required” box is checked for the environmental impact categories that would not have an environmental effect or would have a less-than-significant effect as a result of the proposed program. For these topics, no additional analysis beyond that provided in this initial study is warranted or required. The “Impact to be Analyzed in the EIR” box is checked for all categories that require further analysis or study.

The initial study first evaluates the proposed program and then the proposed project. For the proposed program analysis, analysis is presented for only the initial study checklist topics for which no additional analysis is required. All of the remaining topics will be analyzed in the draft EIR. For the proposed project analysis, all of the issues in the initial study checklist are analyzed and a determination is made as to whether additional analysis is required in the draft EIR.

DETERMINATION (To Be Completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed program and project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.
- ☐ I find that although the proposed program and project could have a significant effect on the environment, there would 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 would be prepared.
- ☒ I find that the proposed program and project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed program and 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 program and 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 program and project, nothing further is required.

Signature

Deirdre West, Manager,
Environmental Planning Team

Printed Name

December 17, 2014**Date**

The Metropolitan Water District of
Southern California

For

EVALUATION OF PROGRAM-RELATED ENVIRONMENTAL IMPACTS

INTRODUCTION

Under the proposed program, Metropolitan proposes to rehabilitate the PCCP portions of four pipelines. Rehabilitation would occur along approximately 70 miles of the AMP, Calabaras Feeder, Rialto Pipeline, and Sepulveda Feeder (see Section 9, Description of the Proposed Program, for additional details). This section of the initial study checklist evaluates the potential environmental impacts related to the proposed program.

Each impact category has several specific questions. This evaluation determined that the proposed program would have “no impact” or a “less-than-significant impact” on some categories or questions within the category. These categories and questions are evaluated in this section, therefore, further analysis of these topics is not required in the draft EIR. All other categories and questions will be analyzed in the draft EIR and are listed below. The categories identified below will be addressed in the draft EIR. Topics in parenthesis are the remaining impacts to be further analyzed.

- I. Aesthetics
- II. Agriculture (convert farmland, conflict with agricultural designations)
- III. Air quality
- IV. Biological resources
- V. Cultural resources
- VI. Geology and soils (exposure to earthquake faults, seismic ground shaking, seismically related ground failure/liquefaction, and landslides; soil erosion; unstable soils; expansive soils; landslides and mudflow)
- VII. Greenhouse gas emissions
- VIII. Hazards and hazardous materials
- IX. Hydrology and water quality (water quality/wastewater discharge, drainage patterns and runoff,)
- X. Land use and planning
- XII. Noise
- XV. Recreation
- XVI. Transportation and traffic (including fire and police emergency response and access and parking)
- XVII. Utilities and service systems

Operating conditions of the four pipelines following rehabilitation would be identical to baseline conditions. The pipelines are currently not visible or otherwise noticeable aboveground, except for some appurtenant structures. Vegetation and paving materials removed during rehabilitation would be replaced in kind prior to the completion of rehabilitation. Therefore, there would be no change between baseline conditions and conditions under operation of the four pipelines following rehabilitation. Impacts on resources resulting from operation of the pipelines would not occur and will not be further addressed in either this evaluation or the draft EIR.

II. AGRICULTURE AND FOREST RESOURCES

Would the proposed program:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- b. Conflict with existing zoning for agricultural use or a Williamson Act contract?

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No Impact. According to California Department of Conservation data, no portions of the proposed program alignments are within areas under Williamson Act contract (California Department of Conservation 2013). PCCP portions of AMP within the city of Irvine occur within areas that are currently used for agricultural purposes and are zoned Preservation, which allows for agricultural uses. Given that rehabilitation activities would not change existing zoning, the proposed program would not conflict with zoning for agricultural use (City of Irvine 2013). No further analysis is required in the draft EIR.

- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined by 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 551104(g))?

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Less-than-Significant Impact. The proposed program would rehabilitate existing pipelines. These existing pipelines are located primarily in Metropolitan owned rights-of-way or public roads. There are no designated forest lands along the pipeline alignment (California Department of Conservation 2010; U.S. Forest Service 2014). Therefore, the proposed uses would not conflict with zoning. No further analysis is required in the draft EIR.

- d. Result in the loss of forestland or conversion of forest land to non-forest use?

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Less-than-Significant Impact. The proposed program would rehabilitate existing pipelines that are located primarily in Metropolitan owned rights-of-way and public roads. There are no designated forest lands along the pipeline alignment. No further analysis is required in the draft EIR.

VI. GEOLOGY AND SOILS

Would the proposed program:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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?

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No Impact. The proposed program would not include septic systems. No further analysis is required in the draft EIR.

IX. HYDROLOGY AND WATER QUALITY

Would the proposed program:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

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Less-than-Significant Impact. The proposed program involves the rehabilitation of existing water conveyance pipelines. No changes to water usage or supply would occur as a result of the proposed program as demand would remain unchanged. The proposed program would not result in increased use or extraction of groundwater, and there would be no associated impacts on groundwater supplies, aquifer volumes, or groundwater tables. In the unlikely event that shallow groundwater is encountered during rehabilitation activities, temporary dewatering efforts would be minimal and short-term. Based on the temporary nature and limited extent of such potential dewatering activities, no associated impacts related to the drawdown or depletion of local groundwater resources would occur. The proposed program would entail relining the existing pipelines and would not result in the construction of substantial new impervious surfaces such as pavement. Accordingly, the proposed program would not result in impacts related to the reduction of local or regional infiltration and associated groundwater recharge capacity. Therefore, impacts would be less than significant. No further analysis is required in the draft EIR.

- g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

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No Impact. The proposed program does not include the construction of any housing, and no impacts related to the placement of housing in a floodplain would result. No further analysis is required in the draft EIR.

- h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

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Less-than-Significant Impact. The proposed program would rehabilitate an existing pipeline. The ground surface would be returned to its existing condition following the completion of rehabilitation. There would be no structures aboveground that would impede or redirect flood flows. No further analysis is required in the draft EIR.

- i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

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Less-than-Significant Impact. According to Figure 12.4 of the Los Angeles County Draft General Plan, the Sepulveda Feeder alignment coincides with the dam and reservoir inundation areas of the Van Norman, Encino, and Stone Canyon reservoirs (County of Los Angeles 2014a). The Rialto Pipeline coincides with the San Antonio and San Dimas dam inundation areas (County of Los

Would the proposed program:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

Angeles 2014a). The PCCP portions of the Calabasas Feeder and the AMP do not coincide with any dam inundation areas. Although the Rialto Pipeline and Sepulveda Feeder coincide with inundation areas, pipeline rehabilitation associated with the proposed program would not increase the risks associated with dam failure because activities would be limited to the existing pipeline locations and would not come into contact with any dam infrastructure. In addition, construction activities would be temporary and short term in duration. Proposed program impacts would be less than significant. No further analysis is required in the draft EIR.

XI. MINERAL RESOURCES

Would the proposed program:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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?

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Less-than-Significant Impact. According to Figure 9.6 of the Los Angeles County Draft General Plan, the alignment of the Rialto Pipeline within Los Angeles County coincides with designated mineral resource zones in the city of San Dimas (County of Los Angeles 2014a). Aggregate operations are located in the northwestern and northeastern portions of the city of Upland. The only area in which the PCCP portion of the Rialto Pipeline coincides with an active aggregate operation is in the northeastern portion of the city of Upland where the pipeline crosses a portion of the resource extraction area (City of Upland 1986). Rehabilitation work would be confined to a corner of the property adjacent to State Route (SR-) 210 where active resource extraction is not occurring. The general plans of Orange and Los Angeles counties indicate that no portion of the AMP or Calabasas and Sepulveda feeders coincide with state-designated mineral resource zones (County of Orange 2005; County of Los Angeles 2014a). No further analysis is required in the draft EIR.

- 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?

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Less-than-Significant Impact. As indicated in Item XIa, portions of the Rialto Pipeline coincide with resource extraction areas designated by the Los Angeles County Draft General Plan. However, pipeline rehabilitation would not result in the loss of availability of these resources delineated on this local general plan because rehabilitation would not prevent extraction. No further analysis is required in the draft EIR.

XIII. POPULATION AND HOUSING

Would the proposed program:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure)?

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No Impact. The proposed program involves rehabilitating existing pipelines and does not include the construction of any new homes or businesses. In addition, it would not displace any existing population or housing units or businesses. Operating conditions of the four pipelines following rehabilitation would be identical to baseline conditions and would not expand the existing water distribution system. Therefore, no population growth would be induced and no further analysis is required in the draft EIR.

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

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No Impact. Implementation of the proposed program would not displace any existing housing units or necessitate the construction of replacement housing elsewhere. No further analysis is required in the draft EIR.

- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

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No Impact. Implementation of the proposed program would not displace any people, necessitating the construction of replacement housing elsewhere. No further analysis is required in the draft EIR.

XIV. PUBLIC SERVICES

Would the proposed program result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

Fire protection?

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No Impact. The proposed program would rehabilitate existing pipelines and would not require new fire protection services because the proposed program would not expand the service area or indirectly contribute to new development. It does not include the construction of new homes or businesses. The program would not add capacity to the pipeline, which could induce population growth. Therefore, direct population growth, which could result in the need for additional or expanded fire protection, would not occur with implementation of the program. The temporary

construction activities necessary to rehabilitate the existing pipelines would not have a significant effect on or result in a need for new or altered fire protection services. Metropolitan would ensure that appropriate fire safety procedures are followed during construction. The proposed program rehabilitation would not result in the provision of new or physically altered governmental facilities to maintain acceptable service ratios or other performance objectives for fire protection. Impacts would not occur, and no further analysis is required in the draft EIR.

Police protection?

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No Impact. The proposed program would rehabilitate existing water distribution pipelines and would not require new police protection services because the proposed program would not expand the service area or indirectly contribute to new development. It does not include the construction of new homes or businesses. The program would not add capacity to the pipeline, which could induce population growth. Therefore, direct population growth, which could result in the need for additional or expanded police protection, would not occur with implementation of the program. The temporary construction activities would not result in an increased demand for police protection. The proposed program rehabilitation would not result in the provision of new or physically altered governmental facilities to maintain acceptable service ratios or other performance objectives for police protection. Impacts would not occur, and no further analysis is required in the draft EIR.

Schools?

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No Impact. The proposed program would rehabilitate existing water distribution pipelines and would not require new school services because the proposed program would not expand the service area or indirectly contribute to new development. It does not include the construction of new homes or businesses. The program would not add capacity to the pipeline, which could induce population growth. Therefore, direct population growth, which could result in the need for additional or expanded school facilities, would not occur with implementation of the program. Rather, the program would repair and maintain existing infrastructure to ensure an adequate water supply to the existing water service area. As a result, the program would not increase school enrollment or result in the need for new or expanded school facilities. The proposed program rehabilitation would not result in the provision of new or physically altered governmental facilities to maintain acceptable performance objectives for schools. Impacts would not occur and no further analysis is required in the draft EIR.

Parks?

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No Impact. The proposed program would rehabilitate existing water distribution pipelines and would not require new parks because the proposed program would not expand the service area or indirectly contribute to new development. Therefore, direct population growth, which could result in the need for additional parks, would not occur with implementation of the program. Rather, the program would repair and maintain existing infrastructure to ensure an adequate water supply to the existing water service area. The proposed program would not result in an increase in water conveyance capacity or otherwise affect the location, distribution, density, or growth rate of the

population within the vicinity. Because growth would not occur, the proposed program would not result in an increase in the use of existing parks such that new parks would be needed or that physical deterioration of the parks would occur. Activities would be limited to construction along the existing underground pipeline. The proposed program rehabilitation would not result in the provision of new or physically altered governmental facilities to maintain acceptable objectives for parks. Impacts would not occur, and no further analysis is required in the draft EIR.

Other public facilities?

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No Impact. The proposed program would not require new public facilities because the proposed program would not expand the service area or indirectly contribute to development. Rehabilitation of the existing pipelines would provide for increased reliability of supplemental water deliveries to local water agencies. Impacts would not occur, and no further analysis is required in the draft EIR.

EVALUATION OF PROJECT-RELATED ENVIRONMENTAL IMPACTS

INTRODUCTION

Under the proposed project, Metropolitan proposes to rehabilitate the PCCP portions of the SLF (see Section 10, Description of Proposed Project, for additional details). This section of the initial study checklist evaluates the potential environmental impacts associated with the rehabilitation activities that would occur under the proposed project.

Each category analyzed has several specific questions. This evaluation determined that the proposed project would have “no impact” or a “less-than-significant impact” on some categories or questions within each category. These categories are evaluated in this section, therefore, further analysis of these topics is not required in the draft EIR.

The categories listed below will be analyzed further in the draft EIR. Topics in parenthesis are the remaining impacts to be further analyzed.

- I. Aesthetics (scenic vistas, visual character or quality, new source of light or glare)
- III. Air quality (applicable air quality plan, existing or projected air quality violation, net increase in any criteria pollutant, exposure to substantial pollutant concentrations)
- IV. Biological resources (adverse effect on candidate, sensitive, or special-status species; adverse effect on riparian habitat or other sensitive natural community; adverse effect on federally protected wetlands; conflict with any local policies or ordinances)
- V. Cultural resources
- VI. Geology and soils (exposure to earthquake faults, seismic ground shaking, seismically related ground failure/liquefaction, and landslides; soil erosion; unstable soils; expansive soils)
- VII. Greenhouse gas emissions
- VIII. Hazards and hazardous materials (routine transport, use, or disposal of hazardous materials; reasonably foreseeable upset and accident conditions; hazardous materials within 0.25 mile of a school; hazardous materials site; airport land use plan; emergency response or evacuation plan)
- IX. Hydrology and water quality (water quality/wastewater discharge, drainage patterns and runoff, mudflow)
- X. Land use and planning (conflict with applicable land use plan, policy, or regulation)
- XII. Noise (noise in excess of standards, groundborne vibration or noise, temporary increase in noise, airport land use plan)
- XV. Recreation (increased use of recreational facilities)
- XVI. Transportation and traffic (applicable plan, ordinance, or policy; congestion management program, design feature, emergency access; public transit, bicycle, or pedestrian facilities)

Operating conditions of the SLF following rehabilitation would be identical to baseline conditions. The SLF is a subsurface pipeline that is not visible or otherwise noticeable aboveground, except for some appurtenant structures. Vegetation and paving materials removed during rehabilitation would be replaced in kind prior to the completion of rehabilitation. Therefore, there would be no change between baseline

and operational conditions of the SLF following rehabilitation. Impacts on resources resulting from operation of the SLF would not occur and will not be further addressed in either this evaluation or the draft EIR. Only impacts related to rehabilitation will be evaluated in the draft EIR.

I. AESTHETICS

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

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



Potentially Significant Impact. Scenic vistas discussed in the Draft Los Angeles County General Plan and the Orange County General Plan include views from hillsides and ridges as well as scenic highways. Some city general plans also identify scenic vistas. Construction equipment used would be of various sizes, the largest of which has the potential to temporarily obscure scenic vistas from surrounding properties. The potential for SLF rehabilitation to affect scenic vistas substantially will be further evaluated in the draft EIR.

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



Less-than-Significant Impact. There are no state-designated scenic highways within the vicinity of the SLF. The closest designated scenic highway to the SLF alignment is a portion of SR-91 east of SR-55, the closest point of which is approximately 2.5 miles southeast of the SLF alignment (California Department of Transportation 2012). Construction activities associated with the proposed project would be concentrated around excavation points and would be temporary. Construction equipment would not be large enough to obscure views of the background mountain views. Therefore, the potential for any rehabilitation-related impacts from SLF implementation on scenic highways is very low. SLF rehabilitation would not substantially damage scenic resources within a state scenic highway, and impacts would be less than significant. No further analysis is required in the draft EIR.

- c. Substantially degrade the existing visual character or quality of the site and its surroundings?



Potentially Significant Impact. While SLF rehabilitation is underway, excavation sites, work zones, and staging areas would be required, which would entail grading, vegetation removal, and excavation of a shored pit. Such actions could make the areas in which they are located less visually appealing and temporarily alter the existing visual character and quality of the site(s) and the surrounding areas. The potential for the SLF rehabilitation activities to degrade the existing visual character or quality of sites and their surroundings substantially will be further evaluated in the draft EIR.

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



Potentially Significant Impact. SLF rehabilitation would generally occur during daytime hours, precluding the need for lighting that would be capable of creating new sources of substantial light or glare. However, under certain conditions, nighttime or around-the-clock rehabilitation activities may be necessary to minimize traffic impacts and shorten water shutdowns. Although these impacts would be temporary, nighttime rehabilitation activities would require the use of lighting to illuminate the work area. The potential for the SLF rehabilitation to create a new source of substantial light or glare that would affect day or nighttime views in the area will be further evaluated in the draft EIR.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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?



No Impact. According to the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is not present in the segment of the SLF alignment in Los Angeles County (California Department of Conservation 2010). Two areas near the Orange County part of the SLF alignment are designated as Unique Farmland. One portion of the SLF intersects Unique Farmland within the city of Anaheim, and another portion of the SLF is approximately 0.10 mile south of Unique Farmland within the city of Yorba Linda. However, in both instances, the designated Unique Farmland is not within the public right-of-way in which SLF rehabilitation would occur, and staging areas are not planned in these two designated areas. Consequently, no conversion of state-designated Farmland to a non-agricultural use would occur, and there would be no impacts on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No further analysis is required in the draft EIR.

- b. Conflict with existing zoning for agricultural use or a Williamson Act contract?



No Impact. As described above, SLF rehabilitation would not conflict with existing zoning for agricultural use. Based on a review of the Williamson Act enrollment maps for Orange and Los Angeles counties, no parcels of land are under a Williamson Act contract within the vicinity of the SLF alignment; therefore, impacts involving a conflict with existing zoning for agricultural use or a Williamson Act contract would not occur. No further analysis is required in the draft EIR (California Department of Conservation 2013).

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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))?

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No Impact. The nearest forest land is the Cleveland National Forest, which is located 11 miles southeast of the SLF alignment at the Diemer Plant (U.S. Forest Service 2014). There are no areas of forest land, timberland, or timberland zoned for timberland production near the SLF alignment (California Department of Conservation 2010; U.S. Forest Service 2014). Therefore, no impacts on forestland or timberland would occur as a result of SLF rehabilitation. No further analysis is required in the draft EIR.

- d. Result in the loss of forestland or conversion of forestland to non-forest use?

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No Impact. As described above, there are no existing forestlands near the SLF alignment. The nearest forestland is 11 miles away. Therefore, no loss or conversion of forestland would occur, and no impacts would occur as a result of SLF rehabilitation. No further analysis is required in the draft EIR.

- e. Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or the conversion of forestland to non-forest use?

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Less-than-Significant Impact. One parcel within the city of Placentia, at 292–350 Yorba Linda Boulevard, identified as a potential staging area, is currently being used for agricultural purposes. The property is designated for office uses in the city of Placentia's zoning and land use maps (City of Placentia 2009a; City of Placentia 2009b). Temporary use of the property for staging purposes would not preclude the property owners from continuing the site's current agricultural use following the completion of SLF rehabilitation. Consequently, SLF rehabilitation would not result in the permanent conversion of farmland to non-agricultural uses, and impacts would be less than significant. There are no existing forestland, timberland, or timberland areas zoned for timberland production within the vicinity of the proposed project alignment. No further analysis is required in the draft EIR.

III. AIR QUALITY

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

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



Potentially Significant Impact. The proposed project is located in the South Coast Air Basin (Basin), which is regulated by the South Coast Air Quality Management District (SCAQMD). During the course of rehabilitation, emissions would result from construction equipment, rehabilitation activities (e.g., excavation, cutting concrete), and the transport of workers and materials to and from work sites. Rehabilitation along the SLF alignment could occur consecutively or concurrently, thus influencing the timing, type, and amount of emissions. The potential for SLF rehabilitation to conflict with or obstruct implementation of the applicable air quality plan of the SCAQMD will be further evaluated in the draft EIR.

- b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?



Potentially Significant Impact. As stated above for Item (a), SLF rehabilitation is expected to result in the emission of pollutants and emissions may exceed localized significance thresholds established in the *CEQA Air Quality Handbook* developed by SCAQMD for criteria pollutants. The potential for emissions resulting from SLF rehabilitation to violate any air quality standard or contribute substantially to an existing or projected air quality violation will be further evaluated in the draft EIR.

- c. Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?



Potentially Significant Impact. As discussed in Items (a) and (b), SLF rehabilitation activities are anticipated to emit pollutants for which the Basin is not in attainment. The potential for the proposed project to result in a cumulatively considerable net increase in criteria pollutants in a non-attainment area will be further evaluated in the draft EIR.

- d. Expose sensitive receptors to substantial pollutant concentrations?



Potentially Significant Impact. Sensitive receptors adjacent to the proposed project include numerous single-family and multi-family residences, schools, parks, and health care facilities. SLF rehabilitation would take place adjacent to such sensitive receptors. The potential for rehabilitation activities to expose sensitive receptors to substantial pollutant concentrations will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- e. Create objectionable odors that would affect a substantial number of people?

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Less-than-Significant Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. Rehabilitation includes none of these land uses. During the rehabilitation process, some limited odor may result from asphalt paving activities, which may be detectable by people immediately adjacent to work sites. However, asphalt paving would occur for a limited time period at each excavation site (less than 1 week), and the locations of paving activities would be distributed over several excavation sites along the entire alignment. Furthermore, SCAQMD Rule 402 prohibits the discharge of air contaminants that cause nuisance or annoyance to the public, including odors. And SCAQMD maintains both a toll-free phone line (1-800-CUT-SMOG) and a web-based platform (<http://www.aqmd.gov/contact/complaints>) for reporting complaints related to air quality, including odors. Given the limited duration and location of asphalt paving, mandatory compliance with SCAQMD Rule 402, and ability for the public to report complaints to SCAQMD, SLF rehabilitation would not create a significant level of objectionable odors. No further analysis is required in the draft EIR.

IV. BIOLOGICAL RESOURCES

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

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

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Potentially Significant Impact. The proposed project is located primarily within Metropolitan-owned rights-of-way and public roads and in fully developed and urbanized areas of Los Angeles and Orange counties; however, sensitive species and critical habitat have been documented in proximity to the SLF alignment. A search of the California Natural Diversity Database (CNDDB) yielded 15 sensitive species that have the potential to be found within several hundred feet of the SLF alignment (California Natural Diversity Database 2014). Given the proximity of critical habitat and the potential for sensitive species to occur adjacent to the SLF alignment, sensitive species could be directly or indirectly affected by SLF rehabilitation. The potential for SLF rehabilitation to have a substantial direct or indirect adverse effect on sensitive species will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?



Potentially Significant Impact. The proposed project is located primarily within Metropolitan-owned rights-of-way and public roads and in fully developed and urbanized areas of Los Angeles and Orange counties; however, there is the potential for riparian habitats or other sensitive communities to be located adjacent to the alignment. The potential for SLF rehabilitation to affect riparian habitat or other sensitive natural communities substantially and adversely will be further addressed in the draft EIR.

- c. Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal areas, etc.) through direct removal, filling, hydrological interruption, or other means?



Potentially Significant Impact. The SLF extends under concrete-lined flood control channels and other existing drainages (i.e., Dominguez Channel, the Los Angeles River, San Gabriel River, Coyote Creek) (USFWS 2014). In addition, the SLF intersects with unnamed and unlined water bodies, including a stream that connects freshwater ponds within El Dorado East Regional Park and a freshwater pond located on the west bank of the Los Angeles River (USFWS 2014). Given the proximity of the SLF to such water bodies, the potential for SLF rehabilitation to affect federally protected wetlands substantially and adversely will be further evaluated in the draft EIR.

- 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. Proposed project rehabilitation would not affect the movement of fish or wildlife species because work areas would be located outside of the concrete-lined flood protection channels, and pipeline work would primarily occur below the surface. For the proposed project to interfere substantially with fish or wildlife movement, it would have to occur within or between habitat areas. The northern segment of the SLF is not within a habitat area designated by the Orange County Central and Coastal Subregion Natural Community Conservation Plan (NCCP) and Habitat Conservation Plan (HCP) (habitat areas are located approximately 6 miles to the southeast of the alignment) (GIS data based on Nature Reserve 1996). Furthermore, the SLF alignment is not located between wildlife habitat areas identified in the Orange County General Plan (Figures VI-4 and VI-5 County of Orange 2005). The southern terminus of the SLF is not located within a wildlife area, nor is it located in areas that could serve as wildlife corridors. The SLF alignment is 3 miles east of the Palos Verdes Peninsula NCCP/HCP (Palos Verdes Peninsula Land Conservancy 2004 [Figure 2-2]). In addition, there are no regional wildlife linkages near the SLF alignment (County of Los Angeles 2014a [Figure 6.3]). All other areas of the alignment are urbanized with no wildlife areas. Consequently, SLF rehabilitation would not impose physical

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

barriers that would prevent fish and animal species from migrating, and impacts would be less than significant. No further analysis is required in the draft EIR.

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



Potentially Significant Impact. Some vegetation and trees adjacent to existing roadways may be removed or disturbed during the rehabilitation process. The potential for SLF rehabilitation to conflict with any local policies or ordinances protecting biological resources will be further evaluated in the draft EIR.

- 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?



No Impact. As discussed above, the SLF alignment does not pass through the Orange County Central and Coastal Subregion NCCP/HCP; the NCCP/HCP area is located approximately 6 miles to the southeast (GIS data based on Nature Reserve 1996). The closest portion of the SLF alignment to the Palos Verdes Peninsula NCCP/HCP is 3 miles west of the NCCP/HCP (Palos Verdes Peninsula Land Conservancy 2004 [Figure 2-2]). Therefore, SLF rehabilitation would not conflict with the provisions of these plans. The Los Angeles County Department of Regional Planning identifies Significant Ecological Areas (SEAs), which are designated to preserve undisturbed or lightly disturbed habitat by placing additional conditions on development in areas within their boundaries (County of Los Angeles 2014b). The southern terminus of the SLF alignment is located 0.4 mile east of the Rolling Hills Canyons SEA and immediately adjacent to a portion of the proposed Palos Verdes Peninsula and Coastline SEA (GIS data based on County of Los Angeles 2014b). The work site at this location would not extend into the boundaries of the proposed Palos Verdes Peninsula and Coastline SEA. Because no portion of the SLF alignment or rehabilitation area coincides with an existing or proposed SEA, no SEA-related conditions would be imposed. SLF rehabilitation would not conflict with the provisions of an adopted HCP/NCCP/or other approved local, regional, or state HCP, and no impact would occur. No further analysis is required in the draft EIR.

V. CULTURAL RESOURCES

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?



Potentially Significant Impact. SLF rehabilitation would require excavation and soil disturbance, which could affect unknown historical resources buried along the pipeline alignment. The potential for rehabilitation to cause a substantial adverse change in the significance of a historical resource will be further evaluated in the draft EIR.

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



Potentially Significant Impact. The SLF is subsurface and primarily within public rights-of-way. Areas surrounding the SLF alignment are previously disturbed. Unknown buried archaeological resources were most likely previously disturbed by the extensive development in the area; however, past development in Southern California has resulted in numerous buried archaeological resources being uncovered during excavation and soil-disturbing activities. The potential for SLF rehabilitation to affect archaeological resources substantially and adversely will be further evaluated in the draft EIR.

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



Potentially Significant Impact. The SLF alignment extends through different geologic formations, some of which could have high potential for sensitive paleontological resources. Because the exact locations and depths of potentially sensitive paleontological resources are unknown, disturbance of intact paleontological resources during the rehabilitation process could occur. The potential for SLF rehabilitation to destroy a unique paleontological resource directly or indirectly will be further evaluated in the draft EIR.

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



Potentially Significant Impact. SLF rehabilitation would occur primarily within previously disturbed public rights-of-way in previously disturbed areas. The probability of workers encountering human remains, including those interred outside of formal cemeteries is considered relatively low; however, the potential for SLF rehabilitation to disturb human remains will be further evaluated in the draft EIR.

VI. GEOLOGY AND SOILS

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Expose people or structures to 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)?



Potentially Significant Impact. The proposed project lies within the Newport-Inglewood-Rose Canyon Earthquake Fault Zone, as defined by the California Geological Survey (GeoPentech 2014). In addition, the SLF passes through other fault zones that are not delineated as Alquist-Priolo Earthquake Fault Zones, including two Quaternary faults (the Los Alamitos fault and the Palos Verdes fault), as defined by the U.S. Geological Survey Quaternary Fault and Fold Database (GeoPentech 2014). The potential for fault-related impacts will be further evaluated in the draft EIR.

- ii. Strong seismic ground shaking?



Potentially Significant Impact. The proposed project is in Southern California, which is a known seismically active region. The potential for impacts with respect to seismic ground shaking will be further evaluated in the draft EIR.

- iii. Seismically related ground failure, including liquefaction?



Potentially Significant Impact. Liquefaction is the phenomenon whereby soils lose shear strength and exhibit fluid-like flow behavior, typically as a result of seismic ground acceleration in areas with sandy and saturated soils. According to the preliminary geotechnical/geologic evaluation, the central portion of the SLF alignment extends through several Liquefaction Hazard Zones, as defined by the California Geological Survey (GeoPentech 2014). The potential for seismically related ground failure impacts will be further evaluated in the draft EIR.

- iv. Landslides?



Potentially Significant Impact. The SLF alignment passes within 0.25 mile of Earthquake-Induced Landslide Hazard Zones near the northeastern end of the alignment (Reach 1) as well as near the southwestern end of the alignment (Reach 10) (GeoPentech 2014). Given the proximity to landslide areas and the seismically active nature of Southern California, there is the potential for landslides to affect the pipeline and construction workers at excavation sites and work zones. The potential for impacts related to landslides will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

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



Potentially Significant Impact. During the course of SLF rehabilitation, excavation activities would temporarily uncover areas that are currently paved, exposing such areas to erosive forces. As a result, some erosion and a temporary reduction in soil stability may occur, particularly on steeper grades. The potential for impacts related to erosion and the loss of topsoil will be further evaluated in the draft EIR.

- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?



Potentially Significant Impact. As discussed in Item VIa, iii and iv, above, the SLF alignment would extend through areas that are susceptible to liquefaction and seismically induced landslides. The potential for impacts related to unstable soils will be further evaluated in the draft EIR.

- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?



Potentially Significant Impact. Expansive soils generally owe their characteristics to the presence of swelling clay minerals, which expand as they take on water and reduce as water drains from them. The resulting swelling and shrinking can exert strong pressures on structures and are capable of causing property damage. According to the preliminary geotechnical/geologic evaluation, clays are likely to be found in soils through which the SLF alignment extends (GeoPentech 2014). The potential for impacts related to expansive soils will be further evaluated in the draft EIR.

- 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. SLF rehabilitation would not include the installation or use of septic tanks or alternative wastewater disposal systems. No impacts would occur. No further analysis is required in the draft EIR.

VII. GREENHOUSE GAS EMISSIONS

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

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



Potentially Significant Impact. Greenhouse gas (GHG) emissions would be generated as a result of on-site construction equipment usage, off-site vehicle trips by construction workers, and travel to and from the proposed project site by haul/delivery trucks. The increase in GHG emissions from SLF rehabilitation would be a small fraction of the regional, statewide, and worldwide total inventory. The potential for impacts related to GHG emissions will be further evaluated in the draft EIR.

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



Potentially Significant Impact. As discussed in Item VIIa, above, GHG emissions would be emitted as a result of SLF rehabilitation. The potential for GHG emissions to conflict with applicable plans, policies, or regulations will be further evaluated in the draft EIR.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

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



Potentially Significant Impact. During the course of the SLF rehabilitation, some hazardous material would be used, such as fuel, oils, lubricants, and disinfection solutions that use chlorine. These hazardous materials would be used, transported to and from, and possibly stored at work sites. Therefore, the potential for impacts associated with use, transport, and handling of hazardous materials during rehabilitation will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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?



Potentially Significant Impact. Rehabilitation work and equipment used for the proposed project would require the use of hazardous substances (e.g., fuel and lubricants). Therefore, SLF rehabilitation has the potential to release oils, greases, solvents, and other finishing materials through accidental spills or upsets of these materials, which would have the potential to affect surrounding land uses, although the amount of hazardous substances that would be used for the project is relatively small. The potential for impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment will be further evaluated in the draft EIR.

- c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?



Potentially Significant Impact. There are several schools within 0.25 mile of the SLF alignment. With the exception of the fuels, lubricants, disinfectants containing chlorine, other substances used during the rehabilitation process, and contaminated soil that the crews could uncover, no other hazardous or acutely hazardous materials are anticipated to be encountered. However, the potential for impacts related to hazardous emissions within 0.25 mile of schools will be further evaluated in the draft EIR.

- d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?



Potentially Significant Impact. According to the preliminary findings of the hazardous materials analysis, 3,399 federal and state regulatory case files were identified by Environmental Data Resources (a data retrieval service), where hazardous substances or petroleum products were used, transported, stored, disposed of, or released within 0.25 mile of the PCCP sections of the SLF alignment (UltraSystems 2014). Of the 3,399 cases, 152 case files reported unauthorized releases to the subsurface that could affect soil and/or groundwater. In addition, the SLF alignment traverses the Gaffey, Torrance, and Long Beach oil and gas fields in Los Angeles County and the Richfield, Coyote East, and Yorba Linda oil and gas fields in Orange County. Therefore, the SLF alignment could be located on a site that has been included on a list of hazardous materials sites. The potential for impacts related to hazardous materials sites will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- e. For a project located within an airport land use plan or, where such plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?



Potentially Significant Impact. The SLF alignment crosses within the northern boundary of Long Beach Airport. Construction activities would take place within several hundred feet of a runway and within the airport boundary. The potential for impacts related to SLF rehabilitation within an airport setting will be further evaluated in the draft EIR.

- f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?



Less-than-Significant Impact. Los Alamitos Joint Forces Training Base is 1.2 miles south of the SLF alignment. In addition, Torrance Airport is 1.2 miles west of the SLF alignment, near its southern terminus. Rehabilitation work would generally be located outside of this area and therefore would not be close enough to the airports to create a safety hazard for construction workers or people at the airports. No further analysis is required in the draft EIR.

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



Potentially Significant Impact. During the course of SLF rehabilitation, portions of existing roadways would be shut down to accommodate excavation sites, work zones, or staging areas. In addition, cranes may need to temporarily disrupt traffic. The potential for the SLF rehabilitation to impair implementation of or physically interfere with adopted emergency response plans or evacuation plans will be further evaluated in the draft EIR.

- h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?



No Impact. The SLF alignment is located primarily within a fully developed, urbanized environment and not immediately adjacent to wildlands. The only undeveloped area near the SLF alignment is an undeveloped hillside area adjacent to the Diemer Water Treatment Plant, just outside of Yorba Linda. However, this undeveloped hillside is on the northern side of the treatment plant, and SLF rehabilitation activities would begin on the southern side of the treatment plant adjacent to a golf course. Given that the SLF alignment is not located in wildland areas, SLF rehabilitation would not expose people or structures to the risk of loss, injury, or death as a result of wildland fires. No impact would occur. No further analysis is required in the draft EIR.

IX. HYDROLOGY AND WATER QUALITY

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Violate any water quality standards or waste discharge requirements?



Potentially Significant Impact. SLF rehabilitation tasks that may result in adverse effects on water quality include grading and cleanup as well as short-term, localized excavation and grading activities. Because of the proximity to watercourses (preliminarily identified in Items IVb and IVc), SLF rehabilitation activities could result in releases of excess sediment or other pollutants into these and other waterways. The potential for SLF rehabilitation to violate water quality standards and waste discharge requirements will be further evaluated in the draft EIR.

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?



Less-than-Significant Impact. The proposed project involves the rehabilitation of an existing water conveyance pipeline. No changes to water usage or supply would occur as a result of the proposed project as demand would remain unchanged. The proposed project would not result in increased use or extraction of groundwater, and there would be no associated impacts on groundwater supplies, aquifer volumes, or groundwater tables. In the unlikely event that shallow groundwater is encountered during SLF rehabilitation activities, temporary dewatering efforts would be minimal and short-term. Based on the temporary nature and limited extent of such potential dewatering activities, no associated impacts related to the drawdown or depletion of local groundwater resources would occur. The proposed project would entail relining the existing SLF and would not result in the construction of substantial new impervious surfaces such as pavement. Accordingly, the proposed project would not result in impacts related to the reduction of local or regional infiltration and associated groundwater recharge capacity. Therefore, impacts would be less than significant. No further analysis is required in the draft EIR.

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?



Potentially Significant Impact. Some staging areas or excavation sites would be close to receiving waters. These areas and sites may experience grading or other ground-disturbing activities that could result in altering the existing drainage patterns such that a substantial erosion or siltation could occur in the receiving waters. The potential for SLF rehabilitation to result in substantial erosion or siltation on or off site will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?



Potentially Significant Impact. Some staging areas and excavation sites would be close to receiving waters. Staging areas and excavation sites would experience grading or other ground-disturbing activities. These ground-disturbing activities have the potential to alter the existing drainage pattern of a site such that the amount of surface water runoff could be affected. The potential for SLF rehabilitation to increase the rate or amount of surface water runoff substantially as a result of alterations to the existing drainage area such that flooding would occur will be further evaluated in the draft EIR.

- e. 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? (Note: Refer to Item XVIIc regarding capacity of stormwater systems.)



Potentially Significant Impact. As identified in Items IXc and IXd, above, siltation or runoff could occur as a result of the effects ground-disturbing activities during SLF rehabilitation. The potential for SLF rehabilitation to provide substantial additional sources of polluted runoff will be further evaluated in the draft EIR.

- f. Otherwise substantially degrade water quality?



Less-Than-Significant Impact. Proposed project rehabilitation would not result in other substantial degradations of water quality beyond those previously discussed under Items IXa through IXg above. Impacts would be less than significant. No further analysis is required in the draft EIR.

- g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?



No Impact. The proposed project does not include the construction of any housing, and no impacts related to the placement of housing in a floodplain would occur. Therefore, impacts would not occur. No further analysis is required in the draft EIR.

- h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows?



Less-than-Significant Impact. According to the Federal Emergency Management Agency's (FEMA's) National Flood Hazard Layer mapping tool, several portions of the SLF alignment occur within a 100-year flood hazard area but are located within actual concrete-lined flood control channels. These concrete-lined channels are designed to protect surrounding areas from flooding, and inundation of the surrounding areas would not occur during typical flooding events (FEMA 2013). Structures related to the SLF alignment within these areas would primarily be

Would the proposed project:

	<i>Impact to Be Analyzed in EIR</i>	<i>No Additional Analysis Required</i>
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underground and are not expected to impede or redirect flows that would be contained by the concrete-lined channels. A portion of the SLF alignment east of Coyote Creek, within the cities of Long Beach, Los Alamitos, and Cypress, is within an area that has been designated as a Future Conditions 1% Annual Chance Flood Hazard (Zone X), which differs from existing conditions 100-year flood hazard areas. This designation is made only to support floodplain management decision-making (FEMA 2013). This area is currently developed, and structures related to the SLF alignment within the area would primarily be underground. Consequently, proposed project structures would not impede or redirect floodflows, and impacts would be less than significant. No further analysis is required in the draft EIR.

- i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

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Less-than-Significant Impact. As discussed in Item IXh, above, portions of the SLF alignment are located within a 100-year flood hazard area. In addition, according to Figure 12.4 of the Los Angeles County Draft General Plan, the SLF alignment is located within the dam and reservoir inundation areas of San Gabriel, Morris, and Big Dalton reservoirs (County of Los Angeles 2014a). A small portion of the SLF rehabilitation would be performed adjacent to Metropolitan's existing Palos Verdes Reservoir. Excavations for the SLF rehabilitation would occur in areas outside of the dam and above the reservoir's water surface elevation and would not result in any additional risk. Given the 25-mile distance that flood flows would have to travel before reaching the project area and given that the location of the SLF rehabilitation would not contribute to dam vulnerabilities, impacts would be less than significant. No further analysis is required in the draft EIR.

- j. Expose people or structures to inundation by seiche, tsunami, or mudflow?

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Potentially Significant Impact. As discussed in Item IXi, above, portions of the SLF alignment are located within a dam and reservoir inundation area, but the risk of a seiche emanating from San Gabriel, Morris, and Big Dalton reservoirs that would affect the project area 25 miles to the south is very low. Figure 12.3 of the Los Angeles County Draft General Plan (and the Orange County General Plan) indicates that the proposed project is not located within a tsunami inundation area (County of Los Angeles 2014a; County of Orange 2005). Excavations to perform SLF rehabilitation adjacent to Metropolitan's existing Palos Verdes Reservoir are at elevations above the reservoir such that inundation by seiche is not expected to occur. Therefore, SLF rehabilitation would not result in inundation by seiche or tsunami. No further analysis regarding seiches and tsunamis is required in the draft EIR.

As discussed in Item VIa, iv, there are Earthquake-Induced Landslide Hazard Zones near the northeastern end of the alignment, as well as near the southwestern end of the alignment. The potential for mudflows in connection with landslides will be discussed in the draft EIR.

X. LAND USE AND PLANNING

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Physically divide an established community?

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No Impact. Rehabilitation work would involve excavation sites, work zones, and staging areas. Barriers would be used to confine construction for safety purposes. The proposed project consists of improvements to an existing subsurface water distribution pipeline and would not involve the construction or operation of any permanent structures or alterations that would physically divide an established community. No impacts would occur. No further analysis is required in the draft EIR.

- b. Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

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Potentially Significant Impact. The SLF alignment traverses multiple local and regional jurisdictions. The proposed project's consistency with applicable land use plans, policies, and regulations will be further evaluated in the draft EIR. It should be noted that California Government Code Section 53091 exempts Metropolitan, as a regional public water purveyor and utility, from local zoning and building ordinances. This exemption applies to the SLF as a water transmission pipeline and a direct component of Metropolitan's treatment, storage, and transmission system. Despite this exemption from local land use planning jurisdiction, for purposes of full disclosure of potential project impacts on the environment, this EIR evaluates project compatibility with relevant general plan policies.

- c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

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No Impact. As discussed in Item IVf, the SLF alignment does not pass through the Orange County Central and Coastal Subregion NCCP/HCP; the NCCP/HCP area is approximately 6 miles to the southeast. The closest portion of the SLF alignment to the Palos Verdes Peninsula NCCP/HCP is 3 miles west of the NCCP/HCP. Given the distance of the SLF rehabilitation from the NCCP/HCP areas, conflicts with these plans are not anticipated, and no impact would occur. No further analysis is required in the draft EIR.

XI. MINERAL RESOURCES

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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?

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Less-than-Significant Impact. The proposed project would occur within rights-of-way that have been previously disturbed by both installation of the SLF and other development (e.g., roads, sidewalks, surrounding buildings). According to the Conservation Element of the Rolling Hills Estates General Plan, land in and around the Chandler Quarry, a source of aggregate materials, has been designated a Mineral Resource Zone (MRZ-2) by the State of California (City of Rolling Hills Estates 1992). Although the SLF alignment intersects the Mineral Resource Zone, it is fully within the transportation right-of-way where it coincides with the zone. SLF rehabilitation would not preclude continued use of the quarry and the collection of aggregate materials, nor would it result in the loss of availability of aggregate in the surrounding area. Impacts would be less than significant. No further analysis is required in the draft EIR.

- b. Result in the loss of availability of a locally important mineral resource recovery site, as delineated on a local general plan, specific plan, or other land use plan?

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Less-than-Significant Impact. According to Figure 9.6 of the Los Angeles County Draft General Plan, the SLF alignment extends through areas that are known to contain oil and gas resources (County of Los Angeles 2014a). Because the SLF alignment occurs within a transportation right-of-way that overlaps oil and gas resources, the oil and gas resources are not currently accessible within those areas. Furthermore, SLF rehabilitation would not contribute to the loss of availability of such resources because they could continue to be accessed and used at other locations within the area known to contain oil and gas. Impacts would be less than significant. No further analysis is required in the draft EIR.

XII. NOISE

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?



Potentially Significant Impact. SLF Rehabilitation would generally occur during daytime hours, in accordance with the local jurisdiction's ordinances. Nighttime, Saturday, or 24-hour rehabilitation work may be necessary for an operational response or to minimize traffic impacts or shorten water shutdown and refill periods. Noise related to rehabilitation work would be generated by the use of various pieces of equipment, including, but not limited to, tunnel/pipe ventilation fans, excavators, concrete saws, and generators. This equipment could generate noise in excess of standards established in the local general plans or noise ordinances of the various jurisdictions the SLF alignment traverses. The potential for the SLF rehabilitation activities to expose persons to or generate noise in excess of standards will be further evaluated in the draft EIR.

- b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?



Potentially Significant Impact. Rehabilitation work could result in ground vibration or noise because it would take place below grade. Construction would not involve high-impact activities such as pile-driving or blasting; however, given the proximity of excavation sites to residences and other sensitive receivers, use of equipment in the excavation and compaction phases of the rehabilitation process could result in excessive groundborne vibration or noise. The potential for the SLF rehabilitation to expose persons to or generate excessive groundborne vibrations or noise will be further evaluated in the draft EIR.

- c. Result in a substantial permanent increase in ambient noise levels in the project vicinity, above levels existing without the project?



No Impact. The proposed project would not result in a permanent increase in ambient noise levels in the project vicinity because of the temporary nature of the rehabilitation work. Once SLF rehabilitation is complete, operation of the SLF alignment would continue below grade. Therefore, a substantial permanent increase in ambient noise levels would not occur and there would be no impact. No further analysis related to operational noise is required in the draft EIR.

- d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project?



Potentially Significant Impact. As discussed in Item XIIa, noise related to SLF rehabilitation activities would be generated by the use of various pieces of equipment, including, but not limited to, tunnel/pipe ventilation fans, excavators, concrete saws, and generators. The potential for SLF rehabilitation to substantially increase ambient noise levels temporarily or periodically will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?



Potentially Significant Impact. The SLF alignment crosses the northern boundary of Long Beach Airport, and SLF rehabilitation activities would occur within the airport boundary. The potential for impacts related to noise created by the proposed project in the vicinity of Long Beach Airport will be further evaluated in the draft EIR.

- f. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels?



Less-than-Significant Impact. Los Alamitos Joint Forces Training Base is approximately 1.2 miles south of the SLF alignment. In addition, Torrance Airport is approximately 1.2 miles west of the SLF alignment. Because of the distance of these airports from the SLF rehabilitation areas, equipment at the excavation sites and work zones would not be louder than noise generated by aircraft at these airports. SLF rehabilitation would not expose construction workers to excessive noise generated by a private airstrip. Impacts would be less than significant. No further analysis is required in the draft EIR.

XIII. POPULATION AND HOUSING

Would the project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure)?



No Impact. The proposed project does not include construction or operation of housing that would result in a direct increase in population, nor would it displace any existing population or housing. The proposed project would only rehabilitate segments of an existing subsurface water distribution pipeline. It would not expand the existing water distribution system, thereby providing an indirect catalyst for population growth. Impacts would not occur, and further analysis is not required in the draft EIR.

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



No Impact. SLF rehabilitation would not displace any existing housing units, thereby necessitating the construction of replacement housing elsewhere. Rehabilitation activities would take place along an existing pipeline alignment, within existing rights-of-way or easements where homes do not currently exist. Impacts would not occur. Further analysis is not required in the draft EIR.

Would the project:

*Impact to Be
Analyzed in EIR*

*No Additional
Analysis Required*

- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

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No Impact. SLF rehabilitation would not displace people, thereby necessitating the construction of replacement housing elsewhere. Rehabilitation activities are temporary and would take place along an existing pipeline alignment, within rights-of-way or easements. Therefore, people living in homes in the area would not be displaced. Impacts would not occur. Further analysis is not required in the draft EIR.

XIV. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

*Impact to Be
Analyzed in EIR*

*No Additional
Analysis Required*

Fire protection?

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No Impact. The SLF rehabilitation project would rehabilitate an existing water distribution pipeline and would not require new fire protection services because the proposed project would not expand the service area or indirectly contribute to new development. It does not include the construction of new homes or businesses. The project would not add capacity to the pipeline, which could induce population growth. Therefore, direct population growth, which could result in the need for additional or expanded fire protection, would not occur with implementation of the project. The temporary construction activities necessary to rehabilitate the existing pipelines would not have a significant effect on or result in a need for new or altered fire protection services. Metropolitan would ensure that appropriate fire safety procedures are followed during construction. The proposed project would not result in the provision of new or physically altered governmental facilities to maintain acceptable service ratios or other performance objectives for fire protection. No impact would occur, and no further analysis is required in the draft EIR. Potential impacts on emergency responders, including fire protection, access, and response times, are discussed in Section XVI, Transportation/Traffic.

Police protection?

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No Impact. The SLF rehabilitation project would rehabilitate an existing water distribution pipeline and would not require new police protection services because the proposed project would not expand the service area or indirectly contribute to new development. It does not include the construction of new homes or businesses. The project would not add capacity to the pipeline, which could induce population growth. Therefore, direct population growth, which could result in the need for additional or expanded police protection, would not occur with implementation of the project. The temporary construction activities would not result in an increased demand for police

protection. The proposed project would not result in the provision of new or physically altered governmental facilities to maintain acceptable service ratios or other performance objectives for police protection. Impacts would not occur, and no further analysis is required in the draft EIR. Potential impacts on emergency responders, including police, access, and response times, are discussed in Section XVI, Transportation/Traffic.

Schools?

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No Impact. The SLF rehabilitation project would rehabilitate an existing water distribution pipeline and would not require new school services because the proposed project would not expand the service area or indirectly contribute to new development. It does not include the construction of new homes or businesses. The project would not add capacity to the pipeline, which could induce population growth. Therefore, direct population growth, which could result in the need for additional or expanded school facilities, would not occur with implementation of the project. Rather, the project would repair and maintain existing infrastructure to ensure an adequate water supply to the existing water service area. As a result, the project would not increase school enrollment or result in the need for new or expanded school facilities. The proposed project would not result in the provision of new or physically altered governmental facilities to maintain acceptable performance objectives for schools. Impacts would not occur, and no further analysis is required in the draft EIR. Potential temporary impacts on school athletic fields or other school-related recreational facilities are discussed in Section XV, Recreation. Potential impacts on school parking are discussed in Section XVI, Transportation/Traffic.

Parks?

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No Impact. The SLF rehabilitation project would rehabilitate existing water distribution pipelines and would not require new parks because the proposed project would not expand the service area or indirectly contribute to new development. The project would repair and maintain existing infrastructure to ensure an adequate water supply to the existing water service area and does not include the expansion or construction of park facilities. As described previously, the project would not result in an increase in water conveyance capacity or otherwise affect the location, distribution, density, or growth rate of the population within the vicinity of the project area. Because growth would not occur, the proposed project would not result in an increase in the use of existing parks such that new parks would be needed or that physical deterioration of the parks would occur. Activities would be limited to construction along the existing underground pipeline. The proposed project would not result in the provision of new or physically altered governmental facilities to maintain acceptable objectives for parks. Impacts would not occur, and no further analysis is required in the draft EIR. Potential temporary impacts on recreational facilities are discussed in Section XV, Recreation.

Other public facilities?

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No Impact. The proposed project would not require new public facilities because the proposed project would not expand the service area or indirectly contribute to development. Rehabilitation of the existing pipeline would provide for increased reliability of water deliveries to member agencies. Impacts would not occur, and no further analysis is required in the draft EIR.

XV. RECREATION

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?



Potentially Significant Impact. The proposed project would rehabilitate an existing water distribution pipeline. It would not result in or contribute to population growth such that increased use of existing parks would occur. However, SLF rehabilitation could occur within and adjacent to parks and other recreational areas (e.g., open spaces or school athletic fields) and could result in short-term, indirect effects on recreational facilities (e.g., access restrictions, construction noise, or pollutant emissions) or short-term, direct effects (e.g., eliminate the use of the recreation facility for a period of time). Although SLF rehabilitation is unlikely to lead to permanent deterioration of such facilities, impacts could be significant and will be further evaluated in the draft EIR.

- 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. The proposed project does not include recreational facilities, nor would it require the construction or expansion of existing facilities. No impact would occur. Further analysis is not required in the draft EIR.

XVI. TRANSPORTATION/TRAFFIC

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Conflict with an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, and pedestrian and bicycle paths?



Potentially Significant Impact. During the course of the SLF rehabilitation, work zones would be established within existing roadways, requiring lane closures for extended periods of time (e.g., potentially several months). Temporary signage, traffic cones, fencing, and barriers would be placed where needed during rehabilitation as part of the proposed project. In addition, staging areas and work zones could displace existing parking at various locations (e.g., schools and roadways). The potential for the proposed project to conflict with applicable plans, ordinances, or policies related to the circulation system will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?



Potentially Significant Impact. As described in Item XVIa, SLF rehabilitation would disrupt traffic and conflict with congestion management plans or existing level-of-service standards during the different construction phases of the proposed project. The potential for SLF rehabilitation activities to conflict with congestion management plans or level-of-service standards related to the circulation system will be further evaluated in the draft EIR.

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks?



Less-than-Significant Impact. The proposed project would rehabilitate existing subsurface water distribution pipelines and therefore would not result in an increase in air traffic levels such that air traffic patterns would be influenced. Rehabilitation activities may occur in areas adjacent to existing runways at Long Beach Airport, but the work sites would not be located on the runways. Consequently, SLF rehabilitation would not alter air traffic patterns at Long Beach Airport. Impacts would be less than significant. No further analysis is required in the draft EIR.

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



Potentially Significant Impact. During the rehabilitation activities, work zones would be established within roadways and would include heavy machinery, handheld equipment, and excavation pits. Lane closures would be required for some work zones. The potential for the SLF rehabilitation to result in transportation hazards will be further evaluated in the draft EIR.

- e. Result in inadequate emergency access?



Potentially Significant Impact. During the course of SLF rehabilitation, lane closures would be required to accommodate SLF rehabilitation activities within the work zones and the use of equipment. In some areas with narrow roadways, full road closures would be necessary. Both lane closures and full road closures could affect access to roadways that are used by emergency providers. SLF rehabilitation would result in the temporary disruption or shutdown of existing roads, as described in Item VIIIg. Disruption of traffic has the potential to delay fire personnel, police, or first responders and possibly to increase response times. The potential for SLF rehabilitation to result in inadequate emergency access will be further evaluated in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?



Potentially Significant Impact. SLF rehabilitation would take place along several roadways that are designated as bus corridors. Buses could be delayed if lanes are needed to provide space for work zones. Bus stops may be temporarily relocated in consideration of the locations of the work zones. In addition, Bixby Road in the city of Long Beach has Class II bicycle lanes that could be temporarily disrupted during rehabilitation activities. The potential for SLF rehabilitation activities to conflict with the performance of existing public transit, bicycle, or pedestrian facilities will be further evaluated in the draft EIR.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?



Less-than-Significant Impact. The proposed project would not generate any long-term or substantial quantities of wastewater, and it would not involve permanent structures with the potential to generate wastewater. The proposed project would require dewatering of the pipe prior to rehabilitation. The pipe would be flushed with chlorinated water upon completion of rehabilitation activities. The flushed water would be dechlorinated and released into local flood control channels and sewer systems. Therefore, no additional treatment of water from dewatering or flushed water would be required. No wastewater treatment requirements would be violated or exceeded as a result of the proposed project. Further analysis is not required in the draft EIR.

- b. Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?



No Impact. The proposed project would rehabilitate existing PCCP along the SLF alignment. It would not involve the construction of new water facilities, and it would not increase the capacity of the system. The proposed project would not result in construction of new wastewater treatment facilities. No impacts would occur, and further analysis is not required in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- c. Require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects?

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No Impact. The construction of new stormwater drainage facilities or the expansion of existing facilities is typically required to maintain or increase the facilities' capacity to accommodate an increase in stormwater runoff in an area, such as when a project involves a substantial increase in the amount of impermeable surface. SLF rehabilitation would not involve paving previously unpaved areas and therefore would not result in an increase in impermeable surfaces that would necessitate the construction of new or expanded stormwater facilities or the provision of additional capacity. Impacts would not occur, and further analysis is not required in the draft EIR.

- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new and expanded entitlements needed?

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No Impact. The proposed project would rehabilitate an existing water distribution pipeline. It would not entail uses that would result in long-term water consumption. Consequently, the proposed project would not affect existing water entitlements or require new entitlements. No impact would occur, and further analysis is not required in the draft EIR.

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

☐
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No Impact. The proposed project consists of rehabilitating an existing pipeline. It would not include long-term uses that would require wastewater treatment. No new wastewater would be generated from operation of the SLF. Upon completion of SLF rehabilitation work, the pipeline would operate as it currently does. Consequently, the proposed project would not affect existing wastewater treatment capabilities of the local provider. No impacts would occur, and further analysis is not required in the draft EIR.

- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

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Less-than-Significant Impact. The proposed project would not generate substantial amounts of solid waste. Solid waste debris generated could include cutback asphalt, cut portions of PCCP, and excavated soil that could not be reused on site. This debris would either be reused on site, if feasible, or be recycled off site. The selected contractor would use cost-effective means and methods to recycle or dispose of any solid waste debris generated during rehabilitation. Construction and demolition facilities accept these types of materials on a regular basis to process and dispose of them. Construction and demolition facilities used for current emergency repairs of the SLF include: Dan Copp Crushing, Arcadia Reclamation, and Standard Metals. The selected contractor would coordinate with these types of facilities prior to rehabilitation. Other solid waste debris that cannot be recycled and cannot go to a construction and demolition facility could be

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

accommodated by one or more of the six solid waste facilities in Los Angeles County. The selected contractor could coordinate with one or more of these facilities. These facilities accepted, on average, more than 500 tons of solid waste per day as of 2012 (Los Angeles County Department of Public Works 2013 [Appendix E-2, Table 1]). These facilities include Antelope Valley (accepts 822 tons per day), Calabasas (accepts 633 tons per day), Chiquita Canyon (accepts 2,971 tons per day), Lancaster (accepts 682 tons per day), Scholl Canyon (accepts 675 tons per day), and Sunshine Canyon (accepts 7,107 tons per day). Given the intent to maximize the proposed project's use of excavated materials as backfill and the presence of multiple designated construction and demolition facilities and landfills with existing daily capacity to recycle or dispose of solid waste debris, impacts would be less than significant. Further analysis is not required in the draft EIR.

- g. Comply with federal, state, and local statutes and regulations related to solid waste?

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Less-than-Significant Impact. As discussed above, SLF rehabilitation activities would generate small amounts of solid waste including construction and demolition debris. All waste produced due to proposed project activities would be removed immediately following the activity and disposed of properly in accordance with federal, state, and local statutes and regulations. The proposed project is not anticipated to have a significant impact on solid waste disposal needs, and no further analysis is required. Impacts would be less than significant. Further analysis is not required in the draft EIR.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- a. Does the project have the potential to 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?

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Potentially Significant Impact. As discussed in Section IV above, the potential for SLF rehabilitation to reduce the quality of the environment and affect wildlife species and associated habitat will be addressed further in the draft EIR. As discussed in Section V above, the potential for SLF rehabilitation to eliminate important examples of major periods of California history or prehistory will be addressed further in the draft EIR.

Would the proposed project:

*Impact to Be
Analyzed in EIR* *No Additional
Analysis Required*

- 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.)



Potentially Significant Impact. The potential for SLF rehabilitation to contribute to cumulative impacts will be addressed further in the draft EIR.

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



Potentially Significant Impact. The potential for SLF rehabilitation to result in direct and/or indirect adverse impacts on human beings will be addressed further in the draft EIR.

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PREPARERS OF INITIAL STUDY

The following individuals participated in the preparation of the initial study:

The Metropolitan Water District of Southern California (CEQA lead agency)

- Diane Doesserich
- Malinda Stalvey

ICF International, Inc.

- Donna McCormick
- Nicole Williams
- Rusty Whisman
- Tanya Jones
- Elizabeth Irvin
- John Mathias
- Jenelle Mountain-Castro

Appendix B

Comment Letters on the Notice of Preparation



CITY OF ORANGE

DEPARTMENT OF COMMUNITY DEVELOPMENT
www.cityoforange.org

ADMINISTRATION
(714) 744-7240
fax: (714) 744-7222

PLANNING DIVISION
(714) 744-7220
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BUILDING DIVISION
(714) 744-7200
fax: (714) 744-7245

CODE ENFORCEMENT DIVISION
(714) 744-7244
fax: (714) 744-7245

January 20, 2015

#35-14

Ms. Diane Doesserich
 Environmental Planning Team
 The Metropolitan Water District of Southern California
 PO Box 54153
 Los Angeles, CA 90054-0153

via email: EPT@mwadh2o.com

Subject: Pre-Stressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program and Second Lower Feeder (SLF) Rehabilitation Project

Dear Ms. Doesserich:

The City of Orange (City) has received a Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the PCCP Rehabilitation Program and the SLF Rehabilitation Project. The project includes rehabilitation of the Allen McColloch, Calabasas, Rialto, Sepulveda Feeder and Second Lower Feeder water distribution pipelines. The pipelines are located within MWD-owned rights of way and existing roads. Work includes trenching, relining existing pipes, installation of supplemental or relocated pipes, and refurbishment or replacement of valves and other appurtenant structures. We understand that work would start on the SLF in 2016 and move to the other four pipelines over the next 15 to 20 years.

The Allen McCullough Pipeline is located within the City of Orange. Therefore, we have an interest in ensuring that the EIR evaluate and mitigate any potential impacts to our infrastructure or operations. As such, we request consideration of the following comments:

1. The City requests that the EIR describe the general sequencing and timing for the Allen McColloch Pipeline work and identify any potential for disruption of water service to Orange's connections. We also request substantial advance notification (at least 12 to 24 months) of any work on the AMP that would disrupt water service to Orange's connections, so that there is sufficient time to coordinate any necessary operational changes.

2. The City requests the EIR identify City streets that would be affected by project construction and describe the nature and extent of the disruption. The City requests the EIR describe any street or lane closures or detours and evaluate the impact of redistribution of traffic on adjacent local streets during construction. Any haul routes or detour routes should avoid residential neighborhoods and other sensitive use areas.
3. The City requests the EIR acknowledge that MWD will obtain encroachment permits, haul permits, transportation permits and/or traffic control plan approvals from the City of Orange prior to construction. Depending on the volume of materials hauled, issuance of the haul permit may be a discretionary action approved at the City Council level.

In addition, please note that conditions may be applied to City-issued permits as a means of minimizing impacts and inconvenience to local roadway users. Conditions may include but are not limited to restricted work or haul hours and implementation of certain traffic safety measures such as use of flagmen at sensitive locations. Also, please note that as a condition of our encroachment and haul permit, the City will require MWD to perform a pavement survey and replace any pavement damaged or disturbed by project equipment, work, or hauling. Depending on project design, this may result in MWD repaving the entire width of the roadway where pipeline work is located.

Thank you for the opportunity to comment on the NOP. We look forward to reviewing the Draft EIR upon completion and coordinating on any future work. If you have any questions, please feel free to contact Mr. Frank Sun, City Engineer at (714) 744 – 5544 or at fsun@cityoforange.org.

Sincerely,



Joe DeFrancesco
Public Works Director
City of Orange

DEPARTMENT OF TRANSPORTATION

DISTRICT 12

3347 MICHELSON DRIVE, SUITE 100

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FAX (949) 724-2019

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*Flex your power!
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Jan. 16, 2014

Diane Doesserich
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, , CA 90054-0153

File: IGR/CEQA
SCH#: 2014121055
IGR Log #: 4158

Dear Ms. Doesserich,

Thank you for the opportunity to review and comment on the **Notice of Preparation (NOP) for the Draft Environmental Impact Report(EIR) for the Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation Project**. Metropolitan Water District of Southern California has more than 830 miles of pipelines that distribute drinking water to its member agencies within its service area. The pipelines are made of various materials, including PCCP. Between 1962 and 1985, 163 miles of PCCP was installed throughout the service area. Under certain subsurface conditions, PCCP lines have an elevated risk of failure compared with other types of pipe. PCCP failures can occur without warning. Such failures can be catastrophic, compromising system reliability and resulting in unplanned major repairs, significant costs from service interruptions and repair work, and potential third-party damages. In response to this risk, in 1999, Metropolitan developed a program to inspect and asses all 163 miles of PCCP within its distribution system. In 2011, Metropolitan initiated a comprehensive program to evaluate and rank PCCP lines with the highest risk of failure. The inspections and data indicate that the following five feeders represent the highest risk: the Sepulveda Feeder, Rialto Pipeline, Allen McColloch Pipeline (AMP), Calabasas Feeder, and the SLF. Metropolitan proposes to rehabilitate the PCCP portions of these five pipelines under the proposed program and proposed project. Rehabilitation would occur along approximately 70 miles of the AMP, Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder under the proposed program and approximately 30 miles of the SLF under the proposed project. The first pipeline to be rehabilitated by Metropolitan would be the SLF, followed by the remaining four pipelines (Sepulveda Feeder, Rialto Pipeline, and Calabasas Feeder, AMP) over a period of approximately 15 to 20 years. Rehabilitation would include relining PCCP lines or installing supplemental or relocated lines. Rehabilitation or replacement of isolation valves or appurtenances such as blow-off valves, air-release and vacuum valves, manholes, and meters would also occur within or adjacent to the pipelines.

Caltrans is a commenting agency on this project and has the following comments:

1. If the cost of work within the State R/W is below one Million Dollars the Encroachment Permit process will be handled by Caltrans Permits Branch, otherwise the permit should be authorized through Caltrans Project Development.

2. Allow 2 to 4 weeks for a complete submittal to be reviewed and for a permit to be issued. When applying for Encroachment Permit, please incorporate Environmental Documentation, SWPPP/ WPCP, Hydraulic Calculations, Traffic Control Plans, Geotechnical Analysis, Materials specifications, and all relevant design details including design exception approvals. Maintenance Agreement shall be required between State and the City.
3. If MWD's contractor has not been exempt from permit fees in the Cooperative Agreement, a deposit of \$820 will be needed at the time of Double Permit Application submittal.
4. For specific details on Caltrans Encroachment Permits procedure, please refer to Caltrans Encroachment Permits Manual. The latest edition of the Manual is available on the web site: <http://www.dot.ca.gov/hq/traffops/developserv/permits/>
5. A Traffic Management Plan (TMP) for construction vehicles should be submitted to Caltrans in order to minimize the impacts on the State highway facilities. Coordination of this project with other construction activities may be needed. Any hauling of materials should not occur during A.M and P.M peak periods of travel on State highway facilities during demolition and/or construction of the proposed project. All vehicle loads should be covered so that materials do not blow over or onto the Caltrans Right-of-Way.

Please continue to keep us informed of this project and any future developments that could potentially impact State transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Maryam Molavi at (949) 724-2241.

Sincerely,



MAUREEN EL HARAKE
Branch Chief, Regional-Community-Transit Planning
District 12



PUBLIC UTILITIES DEPARTMENT

Environmental Services

January 27, 2015

Ms. Diane Doesserich
Environmental Planning Team
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

**RE: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT
REPORT FOR THE PRE-STRESSED CONCRETE CYLINDER PIPE
REHABILITATION PROGRAM (PCCP) AND SECOND LOWER FEEDER
REHABILITATION PROJECT (SLF)**

Dear Ms. Doesserich:

Thank you for the opportunity to review and comment on the above-referenced document.

Public Utilities Department – Water Planning and Resources staff offer the following comments:

1. The City of Anaheim has existing aboveground and subsurface infrastructure within the Project Area. During design and before Project construction, all appropriate measures shall be taken to minimize or avoid any potential disturbances to any existing City of Anaheim infrastructure improvements within the Project Area.
2. MWD shall coordinate their maintenance/construction activities with Anaheim when those activities occur in Anaheim's water service area.

Should you have any questions regarding these comments, please contact Al Shaikh, Principal Civil Engineer, at (714)765-5268.

The Public Utilities Department, Environmental Services Division, offers the following comments:

1. Recommend adding the name of the street, Ball Road, to the map on page 32 in order to offer more identification of the location of the Second Lower Feeder.
2. Page 41, Section IX – Hydrology and Water Quality, of the Initial Study indicates that the Allen McColloch Pipeline (AMP) is not within an area of potential dam failure or inundation. Please refer to the "Dam Inundation Map" of the Safety Element of the Anaheim General Plan which indicates areas of the AMP are within an area subject to inundation due to failure of Prado Dam.

Should you have any questions regarding these comments from the Utilities Department, please contact Marie Newland, Environmental Services Specialist, at (714)765-4166.

The Public Works Department, Traffic Engineering staff offers the following comments:

1. Traffic studies should be included to address construction related impacts. Project construction will most likely impact traffic circulation, including transit service, particularly within The Anaheim Resort Area. Any significant traffic impacts will require mitigation in order to avoid increases to existing traffic congestion conditions.
2. Traffic Control Plans will need to be submitted to the City of Anaheim Public Works Department for approval for any work to be done within Anaheim's city limits. The traffic control plans will assist in providing a safe, uniform flow of traffic. The proposed construction activities and public travel, whether by vehicle, bicycle, or by pedestrians walking, must be given equal consideration when developing traffic control plans.

For comments related to Traffic Engineering, please contact Rafael Cobian, Associate Engineer, at (714) 765-4991.

We would again like to thank you for the opportunity to comment on the above-referenced project. Please forward any subsequent public notices and/or environmental documents regarding this project to my attention at the address listed at the bottom of the first page of this letter.

Sincerely,



Marie Newland
Environmental Services Specialist

cc:

Sara Mathis, Public Utilities Department
Al Shaikh, Public Utilities
Rafael Cobian, Public Works Department
Raul Garcia, Public Works Department
Rod Yong, Public Utilities Department
Nam Nguyen, Public Utilities Department

**PUBLIC UTILITIES DEPARTMENT**

Environmental Services

January 27, 2015

Ms. Diane Doesserich
Environmental Planning Team
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

**RE: NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT
REPORT FOR THE PRE-STRESSED CONCRETE CYLINDER PIPE
REHABILITATION PROGRAM (PCCP) AND SECOND LOWER FEEDER
REHABILITATION PROJECT (SLF)**

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For comments related to Traffic Engineering, please contact Rafael Cobian, Associate Engineer, at (714) 765-4991.

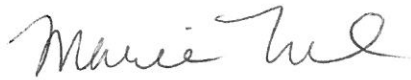
Public Works Department, Development staff offers the following comments:

1. The contractor shall obtain a right of way construction permit for all work with City of Anaheim right-of-ways.
2. During the duration of the project within Anaheim, the contractor needs to schedule regular Traffic Coordination meetings.
3. The Contractor shall include Emergency Services (Fire, Police, etc) in the Traffic Control coordination meetings.
4. Any work outside of the City right-of-way, but within Anaheim's jurisdiction may require a grading permit.
5. Pavement restoration plans shall be submitted to the City of Anaheim
6. No storage of materials on the street will be allowed.
7. Welding ventilation system outlets need to be located away from residential areas.
8. The Contractor shall avoid any conflicts with City projects in the area.
9. The Contractor shall be prepared to address any possibility of street flooding at the Ball Road/Knott Avenue intersection general area.
10. The project shall be coordinated with CALTRANS for the crossing at Beach Avenue.
11. The project shall be coordinated with OCTA for any impacts to bus services.
12. Street closures are not allowed unless approved by City of Anaheim.

For comments related to Development, please contact Raul Garcia, Principal Engineer, at (714) 765-5255.

We would again like to thank you for the opportunity to comment on the above-referenced project. Please forward any subsequent public notices and/or environmental documents regarding this project to my attention at the address listed at the bottom of the first page of this letter.

Sincerely,



Marie Newland
Environmental Services Specialist

cc:

Sara Mathis, Public Utilities Department
Al Shaikh, Public Utilities
Rafael Cobian, Public Works Department
Raul Garcia, Public Works Department
Rod Yong, Public Utilities Department
Nam Nguyen, Public Utilities Department



State of California - Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

7-5

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



January 16, 2015

Ms. Diane Doesserich
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153
Email: EPT@mwdh2o.com

Subject: Comments on the Notice of Preparation of a Joint Project Level and Program Level Draft Environmental Impact Report for the Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation Project; Los Angeles, Orange, and San Bernardino Counties, SCH#2014121055.

Dear Ms. Doesserich:

The California Department of Fish and Wildlife (Department) has reviewed the Pre-Stressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (PCCP Program) and Second Lower Feeder (SLF) Rehabilitation Project (SLF Project) Notice of Preparation (NOP) and Initial Study (IS) for a joint project level and program level Draft Environmental Impact Report (DEIR). The PCCP Program, if approved by the Metropolitan Water District of Southern California (Metropolitan), will consist of rehabilitation along approximately 100 miles of drinking water distribution PCCP identified to have a higher risk of failure. The PCCP Program would include relining PCCP lines or installing supplemental or relocated lines. Rehabilitation or replacement of isolation valves or appurtenances such as blow - off valves, air - release and vacuum valves, manholes, and meters would also occur within or adjacent to the pipelines.

The PCCP Program would occur primarily in Metropolitan-owned rights-of-way and public roads and extends through unincorporated Los Angeles, Orange and San Bernardino County and numerous cities within these counties.

The first pipeline to be rehabilitated in the PCCP Program would be the SLF Project which will include: Anaheim, Buena Park, Carson, Cypress, Lakewood, Lomita, Long Beach, Los Alamitos, Los Angeles, Placentia, Rolling Hills Estates, Torrance, Yorba Linda, unincorporated Los Angeles County, and unincorporated Orange County. The SLF Project will be followed by the remaining pipelines included in the PCCP Program over a period of approximately 15 to 20 years.

The following comments and recommendations have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the Project (California Environmental Quality Act [CEQA] Guidelines § 15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed Project that come under the purview of the California Endangered Species Act ([CESA] Fish and Game Code § 2050 *et seq.*) and Fish and Game Code section 1600 *et seq.* to assist the City in avoiding and minimizing impacts to biological resources.

1. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion, which would result in a reduction of wetland acreage or wetland habitat, values, unless, at a minimum, Project mitigation assures there will be “no net loss” of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether intermittent or perennial, should be retained and provided with substantial setbacks, which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations. Mitigation measures to compensate for impacts to mature riparian corridors must be included in the DEIR and must compensate for the loss of function and value of a wildlife corridor.
 - a) The Project area supports riparian habitat and may support other wetland habitat types; therefore, a jurisdictional delineation of any creeks and their associated riparian habitats should be included in the DEIR. The delineation should be conducted pursuant to the U.S. Fish and Wildlife Service wetland definition adopted by the Department.¹ Please note that some wetland and riparian habitats subject to the Department’s authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.
 - b) The Department also has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed. For any such activities, the Project applicant (or “entity”) must provide written notification to the Department pursuant to section 1600 *et seq.* of the Fish and Game Code. Based on this notification and other information, the Department determines whether a Lake and Streambed Alteration (LSA) Agreement with the applicant is required prior to conducting the proposed activities. The Department’s issuance of a LSA Agreement for a Project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA may consider the local jurisdiction’s (lead agency) Negative Declaration or Environmental Impact Report for the Project. To minimize additional requirements by the Department pursuant to section 1600 *et seq.* and/or under CEQA, the document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA Agreement.²
2. The Department considers adverse impacts to a species protected by the CESA, for the purposes of CEQA, to be significant without mitigation. As to CESA, take of any endangered, threatened, or candidate species that results from the Project is prohibited, except as authorized by state law (Fish and Game Code, §§ 2080, 2085.) Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, the Department recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from the Department may include an incidental take permit (ITP) or a

¹ Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

² A notification package for a LSA may be obtained by accessing the Department’s website at www.wildlife.ca.gov/habcon/1600.

consistency determination in certain circumstances, among other options (Fish and Game Code §§ 2080.1, 2081, subds. (b),(c)). Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

3. To enable the Department to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish and wildlife, we recommend the following information be included in the DEIR.
 - a) A complete discussion of the purpose and need for, and description of, the proposed Project, including all staging areas and access routes to the construction and staging areas.
 - b) A range of feasible alternatives to ensure that alternatives to the proposed Project are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive biological resources particularly wetland/riparian habitat. Specific alternative locations should be evaluated in areas with lower resource sensitivity where appropriate.

Biological Resources within the Project's Area of Potential Effect

4. To provide a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats, the DEIR should include the following information.
 - a) Per CEQA Guidelines, section 15125(c), information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis should be placed on resources that are rare or unique to the region.
 - b) A thorough, recent floristic-based assessment of special status plants and natural communities, following the Department's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (see <http://www.dfg.ca.gov/habcon/plant/>). The Department recommends that floristic, alliance- and/or association-based mapping and vegetation impact assessments be conducted at the Project site and neighboring vicinity. The Manual of California Vegetation, second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2008)³. Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at

³ Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2008. A Manual of California Vegetation. Second edition. California Native Plant Society, Sacramento, California, USA.

the alliance level will help establish baseline vegetation conditions.

- c) A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. The Department's California Natural Diversity Data Base in Sacramento should be contacted at www.wildlife.ca.gov/biogeodata/ to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.
- d) An inventory of rare, threatened, endangered, and other sensitive species on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the Project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

Analyses of the Potential Project-Related Impacts on the Biological Resources

- 5. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DEIR.
 - a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage should also be included. The latter subject should address: Project-related changes on drainage patterns on and downstream of the Project site; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site. The discussions should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and the potential resulting impacts on the habitat, if any, supported by the groundwater. Mitigation measures proposed to alleviate such impacts should be included.
 - b) Discussions regarding indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a NCCP). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR.
 - c) The zoning of areas for development Projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.
 - d) A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future Projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Mitigation for the Project-related Biological Impacts

6. The DEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from Project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.
7. The DEIR should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.
8. For proposed preservation and/or restoration, the DEIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.
9. In order to avoid impacts to nesting birds, the DEIR should require that clearing of vegetation, and when biologically warranted construction, occur outside of the peak avian breeding season which generally runs from February 1 through September 1 (as early as January for some raptors). If Project construction is necessary during the bird breeding season a qualified biologist with experience in conducting bird breeding surveys should conduct weekly bird surveys for nesting birds, within three days prior to the work in the area, and ensure no nesting birds in the Project area would be impacted by the Project. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer should be a minimum width of 300 feet (500 feet for raptors), be delineated by temporary fencing, and remain in effect as long as construction is occurring or until the nest is no longer active. No Project construction shall occur within the fenced nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the Project. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.
10. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.
11. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

We appreciate the opportunity to comment on the referenced NOP. Questions regarding this letter and further coordination on these issues should be directed to Scott Harris, Environmental Scientist at (626) 797-3170 or scott.p.harris@wildlife.ca.gov.

Sincerely,



Betty J. Courtney
Environmental Program Manager I

cc: Erinn Wilson, CDFW, Los Alamitos
Marilyn Fluharty, CDFW, San Diego
Jeff Brandt, CDFW, Ontario
Kelly Schmoker, CDFW, Mission Viejo
Scott Harris, CDFW, Pasadena
Victoria Chau, CDFW, Los Alamitos
State Clearing House

From: Mark McAvoy [<mailto:m.mcavoy@lomitacity.com>]

Sent: Tuesday, January 20, 2015 5:43 PM

To: Environmental Planning Team - EPT

Cc: Mark Andersen; Tom Shahbazi; Ulises Escalona; Paul.Williams@waterboards.ca.gov; Ric.Roda@waterboards.ca.gov

Subject: PCCP Rehabilitation Program and SLF Rehabilitation Project

Date: January 20, 2015

To: Ms. Diane Doesserich, Environmental Planning Team
The Metropolitan Water District of Southern California
P.O. Box 54153 Los Angeles, CA 90054-0153

From: Mark McAvoy, City of Lomita, Director of Public Works/City Engineer
P.O. Box 339, Lomita CA 90717 – 310.325.7110 x124

Subject: PCCP Rehabilitation Program and SLF Rehabilitation Project

The City of Lomita has received the Notice of Preparation (NOP) of an EIR, for the PCCP Rehabilitation Program and SLF Rehabilitation Project, prepared by The Metropolitan Water District of Southern California (MWD). MWD proposes to rehabilitate (5) pipelines, the Sepulveda Feeder, Rialto Pipeline, Allen McColloch Pipeline, Calabazas Feeder and the Second Lower Feeder over a period of approximately 15 to 20 years, beginning with the Second Lower Feeder. The City is concerned regarding this project's potential impacts to the operations of the City's water system, and how those potential impacts are going to be mitigated.

Background

The City of Lomita was incorporated in 1964, and is located 26 miles south of downtown Los Angeles and is bounded by the City of Torrance to the north and west; the City of Los Angeles to the east; the City of Rolling Hills Estates on the southwest; the City of Rancho Palos Verdes on the southeast and unincorporated County area to the northeast. The City's total area is 1.97 square miles.

The City is a retail water agency within West Basin Municipal Water District's (WBMWD) service area. The City's Water Division currently serves a population of approximately 21,515 and handles operations, maintenance, water treatment and upgrading of the (41) miles of distribution pipes within the water system which has more than 4200 service connections.

Pressure Zones

The City of Lomita's topography varies widely in elevation (225 ft. to 430 ft.) requiring (4) different pressure zones to deliver water at adequate pressures to the City's customers.

MWD Connections

The table below provides a summary of the imported MWD water connections that supply the City.

Site Name	Location	Inlet PSI	Outlet PSI	Flow Capacity (gpm)
WB-7	Walnut Ave & Turrell St.	120	72	1,800
WB-8	Appian Way	165	110	3,350

WB-7 can only supplement supply within water pressure Zone I (that portion of the City of Lomita north of Pacific Coast Highway (SR-1)) which serves 75% of the City's population. WB-8 can supply all (4) pressures Zones.

Emergency Connections

The table below provides a summary of emergency connections.

Location	2 way/1 way	Size	Discharge (gpm)
Palos Verdes Drive	2 way	8"	1,800
239 th and Narbonne	1 way	8"	1,350
Pennsylvania Ave and 240 th St.	1 way	8"	1,350

These (3) connections can allow water to flow to the City's water distribution system during emergencies, but cannot supply the entire City (water pressure Zone II has no emergency connection).

Storage Facilities

There are (2) operating reservoirs in the City's system; the Cypress reservoir at 5.3 MG and the Harbor Hills reservoir at 100,000 gallons, with a combined storage capacity of 5.4 MG. Harbor Hills supplies Zone III and IV and Cypress supplies Zone I. Zone II is a closed zone with no storage capacity and is solely dependent upon imported water supplied through WB-8.

Pump Stations

There are (2) pump stations. One is located at the Cypress Water Production Facility (CWPF) and the other is adjacent to WB-8. The booster pump at Appian Way can supply all (4) pressure zones.

Cypress Water Production Facility (CWPF)

CWPF was successfully placed into service in April of 2013. This facility includes a well capable of 1,500 gpm, a chemical disinfection system, iron and manganese filter and a 5.3 MG reservoir. Secondary water quality issues prohibit the sole distribution of well water. Current operations include blending 50% MWD water

supplied through WB-8 with 50% well water which is then treated, stored and distribution through gravity to Zone I. There are no back up wells within the City's water system.

Water Demands

The table below provides a (2) year summary of historical water demand.

Fiscal Year	CWPF	MWD
2013 - 2014	592.3 AF	1,787.7 AF
2012 - 2013	161.7 AF	2,275.0 AF

This equates to an approximate daily average of 2.3 MGD, which is consistent with the City's (10) year historical water usage data.

Potential Impacts to Water Resources

The City of Lomita is greatly dependent upon MWD's supply from the Second Lower Feeder (SLF) which directly supplies WB-8. While the City understands MWD's need to rehabilitate the SLF, the City is concerned about potential direct and cumulative impacts of this project on water supplies to the City.

The City respectfully requests that prior to implementation of the SLF project, MWD work with the City to identify adequate backup water supplies for the City's population so that water can continue to be delivered to the City's customers. In addition, assistance is requested to help prepare a written contingency plan to be practiced between MWD operational staff and the City's Water Division staff to ensure these planned emergency operations can functionally supply water to each of the (4) water pressure zones within the City's water distribution system. At no point can the City sustain a shutdown of WB-8 before an adequate backup for water pressure Zone II is identified and constructed. The City also understands that the WB-8 connection is referred to by two (2) separate names, WB-8A and WB-8B; we would like confirmation whether that implies two separate connections and whether or not both of these connections would be affected by the SLF project.

We appreciate the opportunity to provide input to your planning process and look forward to receiving future correspondence on this project.

Mark A. McAvoy
Public Works Director

City of Lomita
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Lomita, CA 90717
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January 8, 2015

Diane Doesserich
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

RE: SCH # 2014121055 Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation, Los Angeles County.

Dear Ms. Doesserich,

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
 - A Sacred Lands File Check. USGS 7.5-minute quadrangle name, township, range, and section required
 - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) Guidelines §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered cultural items that are not burial associated, which are addressed in Public Resources Code (PRC) §5097.98, in consultation with culturally affiliated Native Americans.
 - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, PRC §5097.98, and CEQA Guidelines §15064.5(e), address the process to be followed in the event of an accidental discovery of any human remains and associated grave goods in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

CC: State Clearinghouse

**Native American Contacts
Los Angeles County
January 7, 2015**

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Fernandeño

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Serrano

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Chumash

Fernandeno Tataviam Band of Mission Indians
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Fernandeno
Tataviam

LA City/County Native American Indian Comm
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randrade@css.lacounty.gov
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(213) 386-3995 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed SCH #2014121055 Pre-Stressed Concrete Cylinder Pipe-Rehabilitation Program and Second Level Feeder Rehab, Los Angeles County.

**Native American Contacts
Los Angeles County
January 7, 2015**

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Chumash

Gabrieleno/Tongva San Gabriel Band of Mission Indian
Anthony Morales, Chairperson
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Gabrielino Tongva

Tongva Ancestral Territorial Tribal Nation
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Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed
SCH #2014121055 Pre-Stressed Concrete Cylinder Pipe-Rehabilitation Program and Second Level Feeder Rehab, Los Angeles County.

**Native American Contacts
Los Angeles County
January 7, 2015**

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Gabrielino Tongva Indians of California Tribal Council
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Kern Valley Indian Council
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Gabrielino-Tongva Tribe
Bernie Acuna, Co-Chairperson
1999 Avenue of the Stars, Suite 1100 Gabrielino
Los Angeles , CA 90067
(310) 428-5690 Cell

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed SCH #2014121055 Pre-Stressed Concrete Cylinder Pipe-Rehabilitation Program and Second Level Feeder Rehab, Los Angeles County.

**Native American Contacts
Los Angeles County
January 7, 2015**

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
1999 Avenue of the Stars, Suite 1100 Gabrielino
Los Angeles , CA 90027
(626) 676-1184 Cell

Barbareno/Ventureno Band of Mission Indians
Raudel Joe Banuelos, Jr.
331 Mira Flores Court Chumash
Camarillo , CA 93012
(805) 987-5314

Santa Ynez Tribal Elders Council
Freddie Romero, Cultural Preservation ConsInt
P.O. Box 365 Chumash
Santa Ynez , CA 93460
freddyromero1959@yahoo.com
(805) 688-7997, Ext 37

Coastal Band of the Chumash Nation
Janet Darlene Garcia
P.O. Box 4464 Chumash
Santa Barbara CA 93140
(805) 689-9528

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393 Gabrielino
Covina , CA 91723
gabrielenoindians@yahoo.
(626) 926-4131

Coastal Band of the Chumash Nation
Crystal Baker
P.O. Box 723 Chumash
Atascadero , CA 93423
(805) 466-8406

Barbareno/Ventureno Band of Mission Indians
Kathleen Pappo
2762 Vista Mesa Drive Chumash
Rancho Pales Verdes CA 90275
(310) 831-5295

Gabrielino-Tongva Tribe
Conrad Acuna
1999 Avenue of the Stars, Suite 1100 Gabrielino
Los Angeles , CA 90027

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This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed SCH #2014121055 Pre-Stressed Concrete Cylinder Pipe-Rehabilitation Program and Second Level Feeder Rehab, Los Angeles County.

**Native American Contacts
Los Angeles County
January 7, 2015**

Gabrielino /Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net
(909) 262-9351

PeuYoKo Perez
5501Stanford Street Chumash
Ventura , CA 93003
grndowl4U@yahoo.com
(805) 231 -0229 Cell

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This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed SCH #2014121055 Pre-Stressed Concrete Cylinder Pipe-Rehabilitation Program and Second Level Feeder Rehab, Los Angeles County.



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

Notice of Preparation

December 18, 2014

To: Reviewing Agencies

Re: Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation Project
SCH# 2014121055

Attached for your review and comment is the Notice of Preparation (NOP) for the Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Diane Doesserich
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Morgan".

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

SCH# 2014121055
Project Title Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder Rehabilitation
Lead Agency Project
Metropolitan Water District of Southern California

Type NOP Notice of Preparation

Description Metropolitan has more than 830 miles of pipelines that distribute drinking water to its member agencies within its service area. The pipelines are made of various materials, including PCCP. Between 1962 and 1985, 163 miles of PCCP was installed throughout the service area. Under certain subsurface conditions, PCCP lines have an elevated risk of failure compared with other types of pipe. PCCP failures can occur without warning. Such failures can be catastrophic, compromising system reliability and resulting in unplanned major repairs, significant costs from service interruptions and repair work, and potential third-party damages. In response to this risk, in 1999, Metropolitan developed a program to inspect and assess all 163 miles of PCCP within its distribution system. In 2011, Metropolitan initiated a comprehensive program to evaluate and rank PCCP lines with the highest risk of failure. The inspections and data indicate that the following five feeders represent the highest risk: the Sepulveda Feeder, Rialto Pipeline, Allen McColloch Pipeline (AMP), Calabasas Feeder, and the SLF. Metropolitan proposes to rehabilitate the PCCP portions of these five pipelines under the proposed program and proposed project. Rehabilitation would occur along approximately 70 miles of the AMP, Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder under the proposed program and approximately 30 miles of the SLF under the proposed project. The first pipeline to be rehabilitated by Metropolitan would be the SLF, followed by the remaining four pipelines (Sepulveda Feeder, Rialto Pipeline, and Calabasas Feeder, AMP) over a period of approximately 15 to 20 years. Rehabilitation would include relining PCCP lines or installing supplemental or relocated lines. Rehabilitation or replacement of isolation valves or appurtenances such as blow-off valves, air-release and vacuum valves, manholes, and meters would also occur within or adjacent to the pipelines.

7-5
Document Details Report
State Clearinghouse Data Base

Lead Agency Contact

Name Diane Doesserich
Agency Metropolitan Water District of Southern California
Phone (213) 217-6899 **Fax**
email
Address P.O. Box 54153

City Los Angeles **State** CA **Zip** 90054-0153

Project Location

County Los Angeles
City
Region
Cross Streets
Lat / Long
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use

Project Issues

Reviewing Agencies Resources Agency; Coachella Valley Mountains Conservancy; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 5; Native American Heritage Commission; California Highway Patrol; Caltrans, District 7; Caltrans, District 12; Air Resources Board; State Water Resources Control Board, Division of Financial Assistance; State Water Resources Control Board, Division of Drinking Water; Regional Water Quality Control Board, Region 4

Date Received 12/18/2014 **Start of Review** 12/18/2014 **End of Review** 01/16/2015

County: Los Angeles

SCH# 2014121055

Regional Water Quality Control Board (RWQCB)

- ☐ **RWQCB 1**
Cathleen Hudson
North Coast Region (1)
- ☐ **RWQCB 2**
Environmental Document
Coordinator
San Francisco Bay Region (2)
- ☐ **RWQCB 3**
Central Coast Region (3)
- ☒ **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)
- ☐ **RWQCB 5S**
Central Valley Region (5)
- ☐ **RWQCB 5F**
Central Valley Region (5)
Fresno Branch Office
- ☐ **RWQCB 5R**
Central Valley Region (5)
Redding Branch Office
- ☐ **RWQCB 6**
Lahontan Region (6)
- ☐ **RWQCB 6V**
Lahontan Region (6)
Victorville Branch Office
- ☐ **RWQCB 7**
Colorado River Basin Region (7)
- ☐ **RWQCB 8**
Santa Ana Region (8)
- ☐ **RWQCB 9**
San Diego Region (9)

☐ Other _____

☐ _____
Conservancy

Last Updated 10/13/2014

Resources Agency

☒ **Resources Agency**
Nadell Gayou

☐ **Dept. of Boating & Waterways**
Nicole Wong

☒ **California Coastal Commission**
Elizabeth A. Fuchs

☐ **Colorado River Board**
Lisa Johansen

☐ **Dept. of Conservation**
Elizabeth Carpenter

☐ **California Energy Commission**
Eric Knight

☐ **Cal Fire**
Dan Foster

☐ **Central Valley Flood Protection Board**
James Herota

☒ **Office of Historic Preservation**
Ron Parsons

☒ **Dept of Parks & Recreation**
Environmental Stewardship
Section

☐ **California Department of Resources, Recycling & Recovery**
Sue O'Leary

☐ **S.F. Bay Conservation & Dev't. Comm.**
Steve McAdam

☒ **Dept. of Water Resources**
Resources Agency
Nadell Gayou

Fish and Game

☐ **Depart. of Fish & Wildlife**
Scott Flint
Environmental Services
Division

☐ **Fish & Wildlife Region 1**
Donald Koch

☐ **Fish & Wildlife Region 1E**
Laurie Harnsberger

☐ **Fish & Wildlife Region 2**
Jeff Drongesen

☐ **Fish & Wildlife Region 3**
Charles Armor

☐ **Fish & Wildlife Region 4**
Julie Vance

☒ **Fish & Wildlife Region 5**
Leslie Newton-Reed
Habitat Conservation
Program

☐ **Fish & Wildlife Region 6**
Tiffany Ellis
Habitat Conservation
Program

☐ **Fish & Wildlife Region 6 I/M**
Heidi Sickler
Inyo/Mono, Habitat
Conservation Program

☐ **Dept. of Fish & Wildlife M**
George Isaac
Marine Region

Other Departments

☐ **Food & Agriculture**
Sandra Schubert
Dept. of Food and
Agriculture

☐ **Depart. of General Services**
Public School Construction

☐ **Dept. of General Services**
Anna Garbeff
Environmental Services
Section

☐ **Delta Stewardship Council**
Kevan Samsam

☐ **Housing & Comm. Dev.**
CEQA Coordinator
Housing Policy Division

Independent Commissions, Boards

☐ **Delta Protection Commission**
Michael Machado

☐ **OES (Office of Emergency Services)**
Dennis Castrillo

☒ **Native American Heritage Comm.**
Debbie Treadway

☐ **Public Utilities Commission**
Leo Wong

☐ **Santa Monica Bay Restoration**
Guangyu Wang

☐ **State Lands Commission**
Jennifer Deleong

☐ **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Cal State Transportation Agency CalSTA

☐ **Caltrans - Division of Aeronautics**
Philip Crimmins

☐ **Caltrans - Planning**
HQ LD-IGR
Terri Pencovic

☒ **California Highway Patrol**
Suzann Ikeuchi
Office of Special Projects

Dept. of Transportation

☐ **Caltrans, District 1**
Rex Jackman

☐ **Caltrans, District 2**
Marcelino Gonzalez

☐ **Caltrans, District 3**
Eric Federicks - South
Susan Zanchi - North

☐ **Caltrans, District 4**
Erik Alm

☐ **Caltrans, District 5**
Larry Newland

☐ **Caltrans, District 6**
Michael Navarro

☒ **Caltrans, District 7**
Dianna Watson

☐ **Caltrans, District 8**
Mark Roberts

☐ **Caltrans, District 9**
Gayle Rosander

☐ **Caltrans, District 10**
Tom Dumas

☐ **Caltrans, District 11**
Jacob Armstrong

☒ **Caltrans, District 12**
Maureen El Harake

Cal EPA

Air Resources Board

☒ **All Other Projects**
Cathi Slaminski

☐ **Transportation Projects**
Nesamani Kalandiyur

☐ **Industrial/Energy Projects**
Mike Tollstrup

☒ **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance

☒ **State Water Resources Control Board**
Jeffery Werth
Division of Drinking Water

☐ **State Water Resources Control Board**
Student Intern, 401 Water Quality
Certification Unit
Division of Water Quality

☐ **State Water Resources Control Board**
Phil Crader
Division of Water Rights

☐ **Dept. of Toxic Substances Control**
CEQA Tracking Center

☐ **Department of Pesticide Regulation**
CEQA Coordinator

**South Coast****Air Quality Management District**

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • www.aqmd.gov

December 23, 2014

Ms. Diane Doesserich
The Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, CA 90012

**Notice of Preparation of a CEQA Document for the
Pre-Stressed Concrete Cylinder Pipe Rehabilitation Program and Second Lower Feeder
Rehabilitation Project**

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The SCAQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the CEQA document upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. More recent guidance developed since this Handbook was published is also available on SCAQMD's website here: [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-\(1993\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993)). SCAQMD staff also recommends that the lead agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Additionally, construction impacts from hauling should be analyzed. Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD staff requests that the lead agency quantify criteria pollutant emissions and compare the results to the recommended regional significance thresholds found here: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>. In addition to analyzing regional air quality impacts, the SCAQMD staff recommends

calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis>. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

In addition, guidance on siting incompatible land uses (such as placing homes near freeways) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Perspective*, which can be found at the following internet address: <http://www.arb.ca.gov/ch/handbook.pdf>. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate these impacts. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying possible mitigation measures for the project, including:

- Chapter 11 of the SCAQMD *CEQA Air Quality Handbook*
- SCAQMD's CEQA web pages at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies>.
- CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* available here: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.
- SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions
- Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: <http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf?sfvrsn=4>.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's webpage (<http://www.aqmd.gov>).

The SCAQMD staff is available to work with the Lead Agency to ensure that project emissions are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at jbaker@aqmd.gov or call me at (909) 396-3176.

Sincerely,

Jillian Baker

Jillian Baker, Ph.D.
Program Supervisor
Planning, Rule Development & Area Sources

EDMUND G. BROWN JR.
GOVERNORMATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION**State Water Resources Control Board****JAN 14 2015**

Diane Doesserich
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Dear Ms. Doesserich:

NOTICE OF PREPARATION (NOP) FOR METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA (DISTRICT); PRE-STRESSED CONCRETE CLINDER PIPE REHABILITATION PROGRAM AND SECOND LOWER FEEDER REHABILITATION PROJECT (PROJECT); LOS ANGELES COUNTY; STATE CLEARINGHOUSE NO: 2014121055

We understand that the District maybe pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing the following information on the preparation of the California Environmental Quality Act (CEQA) documents for the Project.

The State Water Board, Division of Financial Assistance, is responsible for administering the CWSRF Program. The primary purpose for the CWSRF Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, correct nonpoint source and storm drainage pollution problems, provide for estuary enhancement, and thereby protect and promote health, safety and welfare of the inhabitants of the state. The CWSRF Program provides low-interest funding equal to one-half of the most recent State General Obligation Bond Rates with a 30-year term. Applications are accepted and processed continuously. Please refer to the State Water Board's CWSRF website at:

www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/index.shtml.

The CWSRF Program is partially funded by the United States Environmental Protection Agency and requires additional "CEQA-Plus" environmental documentation and review. Three enclosures are included that further explain the CWSRF Program environmental review process and the additional federal requirements. For the complete environmental application package please visit:

http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/srf_forms.shtml. The State Water Board is required to consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment for the proposed Project. For further information on the CWSRF Program, please contact Mr. Ahmad Kashkoli, at (916) 341-5855.

It is important to note that prior to a CWSRF financing commitment, projects are subject to provisions of the Federal Endangered Species Act (ESA), and must obtain Section 7 clearance from the United States Department of the Interior, Fish and Wildlife Service (USFWS), and/or the United States Department of Commerce National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) for any potential effects to special-status species.

Please be advised that the State Water Board will consult with the USFWS, and/or the NMFS regarding all federal special-status species that the Project has the potential to impact if the Project is to be financed by the CWSRF Program. The District will need to identify whether the Project will involve any direct effects from construction activities, or indirect effects such as growth inducement, that may affect federally listed threatened, endangered, or candidate species that are known, or have a potential to occur in the Project site, in the surrounding areas, or in the service area, and to identify applicable conservation measures to reduce such effects.

In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act (Section 106). The State Water Board has responsibility for ensuring compliance with Section 106 and the State Water Board must consult directly with the California State Historic Preservation Officer (SHPO). SHPO consultation is initiated when sufficient information is provided by the CWSRF applicant. The District must retain a consultant that meets the Secretary of the Interior's Professional Qualifications Standards (http://www.nps.gov/history/local-law/arch_stnds_9.htm) to prepare a Section 106 compliance report.

Note that the District will need to identify the Area of Potential Effects (APE), including construction and staging areas, and the depth of any excavation. The APE is three-dimensional and includes all areas that may be affected by the Project. The APE includes the surface area and extends below ground to the depth of any Project excavations. The records search request should extend to a ½-mile beyond project APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity.

Other federal environmental requirements pertinent to the Project under the CWSRF Program include the following (for a complete list of all environmental requirements please visit: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/forms/application_environmental_package.pdf):

- A. Compliance with the Federal Clean Air Act: (a) Provide air quality studies that may have been done for the Project; and (b) if the Project is in a nonattainment area or attainment area subject to a maintenance plan; (i) provide a summary of the estimated emissions (in tons per year) that are expected from both the construction and operation of the Project for each federal criteria pollutant in a nonattainment or maintenance area, and indicate if the nonattainment designation is moderate, serious, or severe (if applicable); (ii) if emissions are above the federal de minimis levels, but the Project is sized to meet only the needs of current population projections that are used in the approved State Implementation Plan for air quality, quantitatively indicate how the proposed capacity increase was calculated using population projections.
- B. Compliance with the Coastal Zone Management Act: Identify whether the Project is within a coastal zone and the status of any coordination with the California Coastal Commission.

- C. Protection of Wetlands: Identify any portion of the proposed Project area that should be evaluated for wetlands or United States waters delineation by the United States Army Corps of Engineers (USACE), or requires a permit from the USACE, and identify the status of coordination with the USACE.
- D. Compliance with the Farmland Protection Policy Act: Identify whether the Project will result in the conversion of farmland. State the status of farmland (Prime, Unique, or Local and Statewide Importance) in the Project area and determine if this area is under a Williamson Act Contract.
- E. Compliance with the Migratory Bird Treaty Act: List any birds protected under this act that may be impacted by the Project and identify conservation measures to minimize impacts.
- F. Compliance with the Flood Plain Management Act: Identify whether or not the Project is in a Flood Management Zone and include a copy of the Federal Emergency Management Agency flood zone maps for the area.
- G. Compliance with the Wild and Scenic Rivers Act: Identify whether or not any Wild and Scenic Rivers would be potentially impacted by the Project and include conservation measures to minimize such impacts.

Following the preparation of the draft CEQA document for the Project, please provide us a copy of the document to review if the District's is considering CWSRF financing. In addition, we would appreciate notices of any hearings or meetings held regarding environmental review for the Project.

Thank you for the providing us a copy of your NOP, and the consideration of the CWSRF for the financing of the District's Project. If you have any questions or concerns, please feel free to contact me at (916) 341-5855, or by email at Ahmad.Kashkoli@waterboards.ca.gov or contact Amanda Dwyer at (916) 341-5739, or by email at Amanda.Dwyer@waterboards.ca.gov.

Sincerely,



Ahmad Kashkoli
Senior Environmental Scientist

cc: State Clearinghouse
(Re: SCH#2014121055)
P.O. Box 3044
Sacramento, CA 95812-3044

CLEAN WATER STATE REVOLVING FUND

California Environmental Quality Act Requirements

State Water Resources Control Board

Division of Financial Assistance

The State Water Resources Control Board (State Water Board), Division of Financial Assistance, administers the Clean Water State Revolving Fund (CWSRF) Program. The CWSRF Program is partially funded by grants from the United States Environmental Protection Agency. All applicants seeking CWSRF financing must comply with the California Environmental Quality Act (CEQA), and provide sufficient information so that the State Water Board can document compliance with federal environmental laws. The "Environmental Package" provides the forms and instructions needed to complete the environmental review requirements for CWSRF Program financing. It is available at:
http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/srf_forms.shtml



**We've got the green...
to keep California's water clean.**

CLEAN WATER STATE REVOLVING FUND

Contact Information: For more information related to the CWSRF Program environmental review process and requirements, please contact your State Water Board Project Manager or Mr. Ahmad Kashkoli at 916-341-5855 or Ahmad.Kashkoli@waterboards.ca.gov

LEAD AGENCY

The applicant is usually the "Lead Agency" and must prepare and circulate an environmental document before approving a project. Only a public agency, such as a local, regional or state government, may be the "Lead Agency" under CEQA. If a project will be completed by a non-governmental organization, "Lead Agency" responsibility goes to the first public agency providing discretionary approval for the project.

RESPONSIBLE AGENCY

The State Water Board is generally a "Responsible Agency" under CEQA. As a "Responsible Agency," the State Water Board must make findings based on information provided by the "Lead Agency" before financing a project.

ENVIRONMENTAL REVIEW

The State Water Board's environmental review of the project's compliance with both CEQA and federal cross-cutting regulations must be completed before a project can be financed by the CWSRF Program.

DOCUMENT REVIEW

Applicants are encouraged to consult with State Water Board staff early during preparation of CEQA document if considering CWSRF financing. Applicants shall also send their environmental documents to the State Water Board, Environmental Review Unit during the CEQA public review period. This way, any environmental concerns can be addressed early in the process.

REQUIRED DOCUMENTS

The Environmental Review Unit requires the documents listed below to make findings and complete its environmental review. Once the State Water Board receives all the required documents and makes its own findings, the environmental review for the project will be complete.

- ✓ Draft and Final Environmental Documents: Environmental Impact Report, Negative Declaration, and Mitigated Negative Declaration as appropriate to the project
- ✓ Resolution adopting/certifying the environmental document, making CEQA findings, and approving the project
- ✓ All comments received during the public review period and the "Lead Agency's" responses to those comments
- ✓ Adopted Mitigation Monitoring and Reporting Plan, if applicable
- ✓ Date-stamped copy of the Notice of Determination or Notice of Exemption filed with the County Clerk(s) and the Governor's Office of Planning and Research
- ✓ CWSRF Evaluation Form for Environmental Review and Federal Coordination with supporting documents



STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARD

waterboards.ca.gov

CLEAN WATER STATE REVOLVING FUND

Basic Criteria for Cultural Resources Report Preparation

State Water Resources Control Board

Division of Financial Assistance

For Section 106 Consultation with the State Historic Preservation Officer (SHPO)
under the National Historic Preservation Act

CULTURAL RESOURCES REPORT

The Cultural Resources Report must be prepared by a qualified researcher that meets the Secretary of the Interior's Professional Qualifications Standards. Please see the Professional Qualifications Standards at the following website at: http://www.cr.nps.gov/local-law/arch_stnds_9.htm

The Cultural Resources Report should include one of the four "findings" listed in Section 106. These include:

"No historic properties affected"

(no properties are within the area of potential effect (APE; including below the ground).

"No effect to historic properties"

(properties may be near the APE, but the project will not have any adverse effects).

"No adverse effect to historic properties"

(the project may affect "historic properties", but the effects will not be adverse).

"Adverse effect to historic properties"

Note: Consultation with the SHPO will be required if a "no adverse effect to historic properties" or an "adverse effect to historic properties" determination is made, to develop and evaluate alternatives or modifications to the proposed project that could avoid, minimize or mitigate adverse effects on "historic properties."

RECORDS SEARCH

- A records search (less than one year old) extending to a half-mile beyond the project APE from a geographically appropriate Information Center is required. The records search should include maps that show all recorded sites and surveys in relation to the APE for the proposed project, and copies of the confidential site records included as an appendix to the Cultural Resources Report.
- The APE is three-dimensional (depth, length and width) and all areas (e.g., new construction, easements, staging areas, and access roads) directly affected by the proposed project.



We've got the green...
to keep California's water clean
CLEAN WATER STATE REVOLVING FUND

NATIVE AMERICAN and INTERESTED PARTY CONSULTATION

- Native American and interested party consultation should be initiated at the planning phase of the proposed project to gather information to assist with the preparation of an adequate Cultural Resources Report.
- The Native American Heritage Commission (NAHC) must be contacted to obtain documentation of a search of the Sacred Lands Files for or near the project APE.
- All local Native American tribal organizations or individuals identified by the NAHC must be contacted by certified mail, and the letter should include a map and a description of the proposed project.
- Follow-up contact should be made by telephone and a phone log maintained to document the contacts and responses.
- Letters of inquiry seeking historical information on the project area and local vicinity should be sent to local historical societies, preservation organizations, or individual members of the public with a demonstrated interest in the proposed project.

Copies of all documents mentioned above (project description, map, phone log and letters sent to the NAHC and Native American tribal organizations or individuals and interested parties) must be included in the Cultural Resources Report.

Contact Information: For more information related to the CWSRF Program Cultural Resources and Requirements, please contact Mr. Ahmad Kashkoli at 916-341-5855 or Ahmad.Kashkoli@waterboards.ca.gov

PRECAUTIONS

A finding of ***“no known resources”*** without supporting evidence is unacceptable. The Cultural Resources Report must identify resources within the APE or demonstrate with sufficient evidence that none are present.

“The area is sensitive for buried archaeological resources,” followed by a statement that ***“monitoring is recommended.”*** Monitoring is not an acceptable option without good-faith effort to demonstrate that no known resource is present.

If ***“the area is already disturbed by previous construction”*** documentation is still required to demonstrate that the proposed project will not affect “historic properties.” An existing road can be protecting a buried archaeological deposit or may itself be a “historic property.” Additionally, previous construction may have impacted an archaeological site that has not been previously documented.

SHPO CONSULTATION LETTER

Submit a draft consultation letter prepared by the qualified researcher with the Cultural Resources Report to the State Water Resources Control Board. A draft consultation letter template is available for download on the State Water Board webpage at: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/cwsrf_requirements.shtml



Appendix C

Air Quality Calculations

Air Quality Assumptions**General**Phasing and OverlapTypical Excavation Site

Based on discussions with MWD staff, it was assumed that no more than 10 typical excavation sites in which slip-lining would occur would be utilized at any given time. This analysis assumes that the subphase for a typical excavation site with the greatest criteria/precursor pollutant emissions would occur concurrently with 9 other typical excavation sites.

Typical New Valve/
Meter Vault Structure

Two new valve/meter vaults were assumed to be constructed concurrently with the other program elements and maximum dimensions of the vault size were assumed.

Typical Below Grade
AV/VV Relocation

Three relocations of below-grade air release/vacuum valves were assumed to be constructed concurrently with the other program elements. Dimensions are based on those given in the program description chapter of the EIR.

Pipeline Replacement/
Parallel Piping

A single 1,000-ft parallel piping segment was also assumed to be under construction concurrently with the other program elements

Idle Emissions

5 minutes per trip

Miles/Trip

14.7 commute average for South Coast Air Basin

6.9 vendor trip average for South Coast Air Basin

Typical Excavation Site1.1 Mobilize and Site Setup

Import	200	m of K-rail	6.1	m/seg	4	tons/seg	1.35	tons/cy	97.14633	cy
Import Trips	97.1463267	cy	16	cy/truck	6.071645	round trips				
	6.07164542	round trips	5	day phase duratic	2	round trips/day (rounded)				

1.2 Excavation, Shoring, Dewatering

Export	30	ft long	25	ft wide	25	ft deep	694.4444	cy		
Export Trips	694.444444	cy	16	cy/truck	43.40278	round trips				
	43.4027778	round trips	20	day phase duratic	3	round trips/day (rounded)				

1.3 Pipe Removal/Pipe Relining

Deliveries 2 round trips of liner deliveries/day

1.4 Backfill and Asphalt Replacement

Import (Paving Materials)	150	ft length	80	ft wide	0.5	ft deep	222.2222	cy		
Import (Backfill)	30	ft long	25	ft wide	25	ft deep	694.4444	cy		
Import Trips	916.666667	cy	16	cy/truck	57.29167	round trips				
	57.2916667	round trips	15	day phase duratic	4	round trips/day (rounded)				

1.5 Site Restoration and Clean Up

Export	200	m of K-rail	6.1	m/seg	4	tons/seg	1.35	tons/cy	97.14633	cy
Export Trips	97.1463267	cy	20	tons/truck	4.857316	round trips				
	4.85731633	round trips	5	day phase duratic	1	round trips/day (rounded)				

Typical New Valve/Meter Vault Structure2.1 Mobilize and Site Setup

Import	200	m of K-rail	6.1	m/seg	4	tons/seg	1.35	tons/cy	97.14633	cy
Import Trips	97.1463267	cy	16	cy/truck	6.071645	round trips				
	6.07164542	round trips	5	day phase duratic	2	round trips/day (rounded)				

2.2 Excavation, Shoring, Dewatering

Export	66	ft long	22	ft wide	21	feet deep	1129.333	cy		
Export Trips	1129.33333	cy	16	cy/truck	70.58333	round trips				
	70.5833333	round trips	20	day phase duratic	4	round trips/day (rounded)				

2.3 Construct New Valve Structure

Import (Concrete)	3-feet walls assumed	331.3333	cy							
Import Trips	331.333333	cy	16	cy/truck	20.70833	round trips				
	20.7083333	round trips	30	day phase duratic	1	round trips/day (rounded)				

2.4 Install New Equipment

Deliveries 2 round trips of equipment deliveries/day

2.5 Backfill and Asphalt Replacement

Import (Paving Materials)	150	ft length	80	ft wide	0.5	ft deep	222.2222			
Import Trips	222.222222	cy	16	cy/truck	13.88889	round trips				
	13.8888889	round trips	15	day phase duratic	1	round trips/day (rounded)				

2.6 Demolition of Old Vault Structure, Backfill and Asphalt Replacement

Import	66	ft long	22	ft wide	21	ft deep	1129.333			
Import Trips	1129.33333	cy	16	cy/truck	70.58333	round trips				
	70.5833333	round trips	20	day phase duratic	4	round trips/day (rounded)				

2.7 Site Restoration and Clean Up

Export	200	m of K-rail	6.1	m/seg	4	tons/seg	1.35	tons/cy	97.14633	cy
Export Trips	97.1463267	cy	20	tons/truck	4.857316	round trips				
	4.85731633	round trips	5	day phase duratic	1	round trips/day (rounded)				

Typical Below Grade AV/VV Relocation 1,000-foot segment assumed**3.1 Mobilize and Site Setup**

Deliveries 1 round trip of equipment deliveries/day

3.2 Remove Existing AV and Appurtenances**3.3 Trench Excavation**

Export	30 ft long	2 ft wide	4 ft deep	8.888889 cy
Export Trips	8.8888889 cy	16 cy/truck	0.555556 round trips	
	0.5555556 round trips	2 day phase duration	1 round trips/day (rounded)	

3.4 Install New AV and Equipment

Deliveries 1 round trip of equipment deliveries/day

3.5 Backfill and Asphalt Replacement

Import (Backfill)	30 ft long	2 ft wide	4 ft deep	8.888889 cy
Import (Paving)	30 ft long	30 ft wide	0.5 ft deep	16.66667 cy
Import Trips	25.555556 cy	16 cy/truck	1.597222 round trips	
	1.5972222 round trips	1 day phase duration	2 round trips/day (rounded)	

3.6 Site Restoration and Clean Up

Deliveries 1 round trip of equipment deliveries/day

Pipeline Replacement/Parallel Piping**4.1 Mobilize and Site Setup**

Import	600 m of K-rail	6.1 m/seg	4 tons/seg	1.35 tons/cy	291.439 cy
Import Trips	291.43898 cy	16 cy/truck	18.21494 round trips		
	18.2149362 round trips	5 day phase duration	4 round trips/day (rounded)		

4.2 Trench Excavation, Shoring

Export	1000 ft long	16 ft wide	30 ft deep	17777.78 cy
Export Trips	17777.7778 cy	16 cy/truck	1111.111 round trips	
	1111.11111 round trips	30 day phase duration	38 round trips/day (rounded)	

4.3 Install Pipe

Deliveries 3 round trips of pipeline deliveries/day

4.4 Backfill and Asphalt Replacement

Import (Backfill)	1000 ft long	16 ft wide	20 ft deep	11851.85 cy
Import (Paving)	1200 ft long	60 ft wide	0.5 ft deep	1333.333 cy
Import Trips	13185.1852 cy	16 cy/truck	824.0741 round trips	
	824.074074 round trips	30 day phase duration	28 round trips/day (rounded)	

4.5 Site Restoration and Clean Up

Export	600 m of K-rail	6.1 m/seg	4 tons/seg	1.35 tons/cy	291.439 cy
Export Trips	291.43898 cy	16 cy/truck	18.21494 round trips		
	18.2149362 round trips	5 day phase duration	4 round trips/day (rounded)		

Project Details (Phase/Task Number)		Working Day	Week 1 Progress			Week 2 Progress			On-Site			Off-Site			Weather Conditions			Resource Allocation			Financials (USD)	
Task ID	Task Name	Start	Actual	Planned	Variance	Start	Actual	Planned	Variance	Start	Actual	Planned	Variance	Start	Actual	Planned	Variance	Team Lead	Team Size	Budget	Actual	
1.1	1.1 Mobilization and Site Setup	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.1.1 Site Assessment and Surveying	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.1.2 Permit Acquisition	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.1.3 Material Procurement	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.1.4 Site Preparation and Clearing	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
1.2	1.2 Mobilization and Site Setup	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.2.1 Site Assessment and Surveying	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.2.2 Permit Acquisition	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.2.3 Material Procurement	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.2.4 Site Preparation and Clearing	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
1.3	1.3 Mobilization and Site Setup	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.3.1 Site Assessment and Surveying	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.3.2 Permit Acquisition	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.3.3 Material Procurement	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.3.4 Site Preparation and Clearing	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
1.4	1.4 Mobilization and Site Setup	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.4.1 Site Assessment and Surveying	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.4.2 Permit Acquisition	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.4.3 Material Procurement	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.4.4 Site Preparation and Clearing	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
1.5	1.5 Mobilization and Site Setup	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.5.1 Site Assessment and Surveying	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.5.2 Permit Acquisition	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.5.3 Material Procurement	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	
	1.5.4 Site Preparation and Clearing	2023-01-01	2023-01-01	2023-01-01	0.0	2023-01-08	2023-01-08	2023-01-08	0.0	2023-01-15	2023-01-15	2023-01-15	0.0	2023-01-22	2023-01-22	2023-01-22	0.0	John Doe	5	10000	9800	

Emissions - Unmitigated

2018**SINGLE SITE EMISSIONS****2018 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	7	37	60	0	3	3
2.0 Typical New Valve/Meter Vault Structure						
	8	42	63	0	3	3
3.0 Typical Below Grade AV/VV Relocation						
	7	32	58	0	3	2
4.0 Pipeline Replacement/Parallel Piping						
	8	40	77	0	3	3
Single-Site Max	8	42	77	0	3	3

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2018 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	7	37	58	0	3	3
2.0 Typical New Valve/Meter Vault Structure						
	8	42	61	0	3	3
3.0 Typical Below Grade AV/VV Relocation						
	7	32	57	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	7	36	57	0	3	3
Single-Site Max	8	42	61	0	3	3

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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Single Site

<i>Exceeds LST?</i>	No	No	Yes	No	No	Yes
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2018 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	74	372	604	1	31	30
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	16	85	127	0	7	6
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	21	96	175	0	8	7
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	8	40	77	0	3	3
Total	118	593	983	1	48	47

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	Yes	Yes	Yes	No	No	No
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2019**SINGLE SITE EMISSIONS****2019 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	7	37	55	0	3	3
2.0 Typical New Valve/Meter Vault Structure						
	7	42	57	0	3	3
3.0 Typical Below Grade AV/VV Relocation						
	6	32	52	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	7	39	70	0	3	3
Single-Site Max	7	42	70	0	3	3

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2019 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	7	36	53	0	3	3
2.0 Typical New Valve/Meter Vault Structure						
	7	41	55	0	3	3
3.0 Typical Below Grade AV/VV Relocation						
	6	31	51	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	7	36	52	0	2	2
Single-Site Max	7	41	55	0	3	3

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	Yes	No	No	No
--	-----------	-----------	------------	-----------	-----------	-----------

* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2019 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	68	366	548	1	27	26
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	14	84	115	0	6	6
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	19	95	157	0	7	7
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	7	39	70	0	3	3
Total	109	584	889	1	43	41

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	Yes	Yes	Yes	No	No	No
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2020**SINGLE SITE EMISSIONS****2020 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	6	36	50	0	2	2
2.0 Typical New Valve/Meter Vault Structure						
	7	42	52	0	3	3
3.0 Typical Below Grade AV/VV Relocation						
	6	31	47	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	7	39	61	0	3	2
Single-Site Max	7	42	61	0	3	3

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2020 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	6	36	48	0	2	2
2.0 Typical New Valve/Meter Vault Structure						
	6	41	50	0	3	2
3.0 Typical Below Grade AV/VV Relocation						
	6	31	46	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	6	35	47	0	2	2
Single-Site Max	6	41	50	0	3	2

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

No	No	Yes	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2020 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	63	361	497	1	24	24
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	13	83	104	0	5	5
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	18	94	140	0	6	6
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	7	39	61	0	3	2
Total	101	578	802	1	38	37

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	Yes	Yes	Yes	No	No	No
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2021**SINGLE SITE EMISSIONS****2021 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	6	36	44	0	2	2
2.0 Typical New Valve/Meter Vault Structure						
	6	41	46	0	2	2
3.0 Typical Below Grade AV/VV Relocation						
	6	31	41	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	6	39	52	0	2	2
Single-Site Max	6	41	52	0	2	2

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2021 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	6	35	43	0	2	2
2.0 Typical New Valve/Meter Vault Structure						
	6	41	45	0	2	2
3.0 Typical Below Grade AV/VV Relocation						
	6	31	40	0	2	2
4.0 Pipeline Replacement/Parallel Piping						
	6	35	42	0	2	2
Single-Site Max	6	41	45	0	2	2

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	No	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2021 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	58	357	444	1	22	21
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	12	83	93	0	5	4
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	17	93	122	0	5	5
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	6	39	52	0	2	2
Total	93	572	711	1	34	32

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	Yes	Yes	Yes	No	No	No
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2022**SINGLE SITE EMISSIONS****2022 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	5	35	40	0	2	2
2.0 Typical New Valve/Meter Vault Structure						
	6	41	42	0	2	2
3.0 Typical Below Grade AV/VV Relocation						
	5	31	36	0	2	1
4.0 Pipeline Replacement/Parallel Piping						
	6	39	46	0	2	2
Single-Site Max	6	41	46	0	2	2

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2022 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	5	35	39	0	2	2
2.0 Typical New Valve/Meter Vault Structure						
	6	41	41	0	2	2
3.0 Typical Below Grade AV/VV Relocation						
	5	31	36	0	1	1
4.0 Pipeline Replacement/Parallel Piping						
	5	35	38	0	2	2
Single-Site Max	6	41	41	0	2	2

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	No	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2022 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	54	354	401	1	19	18
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	11	83	84	0	4	4
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	16	93	109	0	5	4
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	6	39	46	0	2	2
Total	88	568	639	1	30	28

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	Yes	Yes	Yes	No	No	No
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Emissions - Mitigated with Tier 4 Engines for Off-Road Equipment

2018													
SINGLE SITE EMISSIONS							FULL CONSTRUCTION SCENARIO						
2018 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)							2018 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)						
	ROG	CO	NOX	SO2	PM10	PM2_5		ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site							1.0 Typical Excavation Site (10 sites concurrently)						
	4	37	13	0	1	1		43	372	129	1	5	5
2.0 Typical New Valve/Meter Vault Structure							2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	4	42	13	0	1	1		9	85	27	0	1	1
3.0 Typical Below Grade AV/VV Relocation							3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	3	32	7	0	0	0		10	96	22	0	1	1
4.0 Pipeline Replacement/Parallel Piping							4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	5	40	30	0	1	1		5	40	30	0	1	1
Single-Site Max	5	42	30	0	1	1	Total	68	593	208	1	9	8
<i>Regional Mass Emissions</i>							<i>Regional Mass Emissions</i>						
<i>Threshold</i>	75	550	100	150	150	55	<i>Threshold</i>	75	550	100	150	150	55
<i>Single Site Exceeds Threshold?</i>	No	No	No	No	No	No	<i>Exceeds Threshold?</i>	No	Yes	Yes	No	No	No
2018 ON-SITE EMISSIONS (LBS/DAY)													
	ROG	CO	NOX	SO2	PM10	PM2_5							
1.0 Typical Excavation Site													
	4	37	10	0	0	0							
2.0 Typical New Valve/Meter Vault Structure													
	4	42	11	0	1	1							
3.0 Typical Below Grade AV/VV Relocation													
	3	32	6	0	0	0							
4.0 Pipeline Replacement/Parallel Piping													
	4	36	10	0	1	0							
Single-Site Max	4	42	11	0	1	1							
<i>Localized Significance</i>													
<i>Thresholds*</i>	N/A	231	46	N/A	4	3							
<i>Single Site Exceeds LST?</i>	No	No	No	No	No	No							
* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX													

2019**SINGLE SITE EMISSIONS****2019 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	4	37	12	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	4	42	13	0	1	1
3.0 Typical Below Grade AV/VV Relocation						
	3	32	7	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	5	39	28	0	1	1
Single-Site Max	5	42	28	0	1	1

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2019 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	4	36	10	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	4	41	10	0	0	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	6	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	4	36	10	0	1	0
Single-Site Max	4	41	10	0	1	0

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	No	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2019 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	40	366	120	1	5	5
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	8	84	25	0	1	1
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	10	95	20	0	1	1
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	5	39	28	0	1	1
Total	62	584	193	1	8	7

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	No	Yes	Yes	No	No	No
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2020**SINGLE SITE EMISSIONS****2020 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	4	36	11	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	4	42	12	0	1	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	6	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	4	39	23	0	1	1
Single-Site Max	4	42	23	0	1	1

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2020 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	4	36	9	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	4	41	10	0	0	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	6	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	4	35	9	0	1	0
Single-Site Max	4	41	10	0	1	0

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	No	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2020 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	37	361	112	1	5	4
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	7	83	24	0	1	1
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	9	94	19	0	1	1
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	4	39	23	0	1	1
Total	57	578	179	1	7	6

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	No	Yes	Yes	No	No	No
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2021**SINGLE SITE EMISSIONS****2021 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	3	36	10	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	3	41	11	0	0	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	6	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	4	39	19	0	1	1
Single-Site Max	4	41	19	0	1	1

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2021 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	3	35	9	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	3	41	10	0	0	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	5	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	3	35	9	0	1	0
Single-Site Max	3	41	10	0	1	0

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	No	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2021 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	34	357	105	1	4	4
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	7	83	22	0	1	1
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	9	93	18	0	1	1
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	4	39	19	0	1	1
Total	53	572	164	1	7	6

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	No	Yes	Yes	No	No	No
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2022**SINGLE SITE EMISSIONS****2022 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	3	35	10	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	3	41	10	0	0	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	6	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	4	39	16	0	1	1
Single-Site Max	4	41	16	0	1	1

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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*Single Site**Exceeds*

<i>Threshold?</i>	No	No	No	No	No	No
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2022 ON-SITE EMISSIONS (LBS/DAY)

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site						
	3	35	9	0	0	0
2.0 Typical New Valve/Meter Vault Structure						
	3	41	9	0	0	0
3.0 Typical Below Grade AV/VV Relocation						
	3	31	5	0	0	0
4.0 Pipeline Replacement/Parallel Piping						
	3	35	8	0	1	0
Single-Site Max	3	41	9	0	1	0

*Localized**Significance*

<i>Thresholds*</i>	N/A	231	46	N/A	4	3
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*Single Site**Exceeds LST?*

	No	No	No	No	No	No
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* 1-acre site and 25-meter receptor distances in SRA No.12 South Central LA County, which has the most stringent LSTs; no LSTs have been established for ROG and SOX

FULL CONSTRUCTION SCENARIO**2022 TOTAL REGIONAL MASS EMISSIONS (LBS/DAY)**

	ROG	CO	NOX	SO2	PM10	PM2_5
1.0 Typical Excavation Site (10 sites concurrently)						
	31	354	98	1	4	3
2.0 Typical New Valve/Meter Vault Structure (2 sites concurrently)						
	6	83	21	0	1	1
3.0 Typical Below Grade AV/VV Relocation (3 sites concurrently)						
	8	93	18	0	1	1
4.0 Pipeline Replacement/Parallel Piping (1,000-ft segment)						
	4	39	16	0	1	1
Total	50	568	153	1	6	5

*Regional Mass**Emissions*

<i>Threshold</i>	75	550	100	150	150	55
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Exceeds

<i>Threshold?</i>	No	Yes	Yes	No	No	No
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Appendix D

California Natural Diversity Database Species for Los Angeles County

California Natural Diversity Database Species for Los Angeles County

Available <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>

Accessed June 1, 2016

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
Amphibians					
<i>Anaxyrus californicus</i>	arroyo toad	Endangered	None	SSC	-
<i>Anaxyrus canorus</i>	Yosemite toad	Threatened	None	SSC	-
<i>Batrachoseps gabrieli</i>	San Gabriel slender salamander	None	None	-	-
<i>Ensatina eschscholtzii croceator</i>	yellow-blotched salamander	None	None	SSC	-
<i>Ensatina klauberi</i>	large-blotched salamander	None	None	SSC	-
<i>Rana boylei</i>	foothill yellow-legged frog	None	None	SSC	-
<i>Rana draytonii</i>	California red-legged frog	Threatened	None	SSC	-
<i>Rana muscosa</i>	southern mountain yellow-legged frog	Endangered	Endangered	SSC	-
<i>Taricha torosa</i>	Coast Range newt	None	None	SSC	-
<i>Spea hammondi</i>	western spadefoot	None	None	SSC	-
Birds					
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-
<i>Accipiter gentilis</i>	northern goshawk	None	None	SSC	-
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL	-
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-
<i>Buteo regalis</i>	ferruginous hawk	None	None	WL	-
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	-	-
<i>Circus cyaneus</i>	northern harrier	None	None	SSC	-
<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	FP	-
<i>Pandion haliaetus</i>	osprey	None	None	WL	-

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Eremophila alpestris actia</i>	California horned lark	None	None	WL	-
<i>Cerorhinca monocerata</i>	rhinoceros auklet	None	None	WL	-
<i>Fratercula cirrhata</i>	tufted puffin	None	None	SSC	-
<i>Synthliboramphus scrippsi</i>	Scripps's murrelet	Candidate	Threatened	-	-
<i>Aythya americana</i>	redhead	None	None	SSC	-
<i>Branta bernicla</i>	brant	None	None	SSC	-
<i>Dendrocygna bicolor</i>	fulvous whistling-duck	None	None	SSC	-
<i>Chaetura vauxi</i>	Vaux's swift	None	None	SSC	-
<i>Cypseloides niger</i>	black swift	None	None	SSC	-
<i>Ardea alba</i>	great egret	None	None	-	-
<i>Ardea herodias</i>	great blue heron	None	None	-	-
<i>Botaurus lentiginosus</i>	American bittern	None	None	-	-
<i>Egretta thula</i>	snowy egret	None	None	-	-
<i>Ixobrychus exilis</i>	least bittern	None	None	SSC	-
<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-
<i>Cardinalis cardinalis</i>	northern cardinal	None	None	WL	-
<i>Gymnogyps californianus</i>	California condor	Endangered	Endangered	FP	-
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	Threatened	None	SSC	-
<i>Charadrius montanus</i>	mountain plover	None	None	SSC	-
<i>Mycteria americana</i>	wood stork	None	None	SSC	-
<i>Pica nuttalli</i>	yellow-billed magpie	None	None	-	-
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Threatened	Endangered	-	-
<i>Phoebastria albatrus</i>	short-tailed albatross	Endangered	None	SSC	-
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	None	None	WL	-
<i>Aimophila ruficeps obscura</i>	Santa Cruz Island rufous-crowned sparrow	None	None	SSC	-
<i>Ammodramus savannarum</i>	grasshopper sparrow	None	None	SSC	-
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	None	None	WL	-
<i>Artemisiospiza belli clementeae</i>	San Clemente sage sparrow	Threatened	None	SSC	-

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<i>Chondestes grammacus</i>	lark sparrow	None	None	-	-
<i>Junco hyemalis caniceps</i>	gray-headed junco	None	None	WL	-
<i>Melospiza melodia graminea</i>	Channel Island song sparrow	None	None	SSC	-
<i>Passerculus sandwichensis alaudinus</i>	Bryant's savannah sparrow	None	None	SSC	-
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	None	Endangered	-	-
<i>Passerculus sandwichensis rostratus</i>	large-billed savannah sparrow	None	None	SSC	-
<i>Pipilo maculatus clementae</i>	San Clemente spotted towhee	None	None	SSC	-
<i>Poocetes gramineus affinis</i>	Oregon vesper sparrow	None	None	SSC	-
<i>Spizella atrogularis</i>	black-chinned sparrow	None	None	-	-
<i>Spizella breweri</i>	Brewer's sparrow	None	None	-	-
<i>Spizella passerina</i>	chipping sparrow	None	None	-	-
<i>Falco columbarius</i>	merlin	None	None	WL	-
<i>Falco mexicanus</i>	prairie falcon	None	None	WL	-
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-
<i>Spinus lawrencei</i>	Lawrence's goldfinch	None	None	-	-
<i>Gavia immer</i>	common loon	None	None	SSC	-
<i>Grus canadensis canadensis</i>	lesser sandhill crane	None	None	SSC	-
<i>Grus canadensis tabida</i>	greater sandhill crane	None	Threatened	FP	-
<i>Haematopus bachmani</i>	black oystercatcher	None	None	-	-
<i>Progne subis</i>	purple martin	None	None	SSC	-
<i>Riparia riparia</i>	bank swallow	None	Threatened	-	-
<i>Oceanodroma furcata</i>	fork-tailed storm-petrel	None	None	SSC	-
<i>Oceanodroma homochroa</i>	ashy storm-petrel	None	None	SSC	-
<i>Oceanodroma melania</i>	black storm-petrel	None	None	SSC	-
<i>Agelaius tricolor</i>	tricolored blackbird	None	None	SSC	-
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None	SSC	-
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None	SSC	-

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<i>Lanius ludovicianus anthonyi</i>	Island loggerhead shrike	None	None	SSC	-
<i>Lanius ludovicianus mearnsi</i>	San Clemente loggerhead shrike	Endangered	None	SSC	-
<i>Chlidonias niger</i>	black tern	None	None	SSC	-
<i>Hydroprogne caspia</i>	Caspian tern	None	None	-	-
<i>Larus californicus</i>	California gull	None	None	WL	-
<i>Sterna forsteri</i>	Forster's tern	None	None	-	-
<i>Sternula antillarum browni</i>	California least tern	Endangered	Endangered	FP	-
<i>Thalasseus elegans</i>	elegant tern	None	None	WL	-
<i>Toxostoma bendirei</i>	Bendire's thrasher	None	None	SSC	-
<i>Toxostoma lecontei</i>	Le Conte's thrasher	None	None	SSC	-
<i>Callipepla californica catalinensis</i>	Catalina California quail	None	None	SSC	-
<i>Baeolophus inornatus</i>	oak titmouse	None	None	-	-
<i>Icteria virens</i>	yellow-breasted chat	None	None	SSC	-
<i>Setophaga occidentalis</i>	hermit warbler	None	None	-	-
<i>Setophaga petechia</i>	yellow warbler	None	None	SSC	-
<i>Pelecanus erythrorhynchos</i>	American white pelican	None	None	SSC	-
<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	FP	-
<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-
<i>Picoides albolarvatus</i>	White-headed woodpecker	None	None	-	-
<i>Picoides nuttallii</i>	Nuttall's woodpecker	None	None	-	-
<i>Sphyrapicus ruber</i>	red-breasted sapsucker	None	None	-	-
<i>Coturnicops noveboracensis</i>	yellow rail	None	None	SSC	-
<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	FP	-
<i>Rallus longirostris levipes</i>	light-footed clapper rail	Endangered	Endangered	FP	-
<i>Rallus longirostris obsoletus</i>	California clapper rail	Endangered	Endangered	FP	-
<i>Numenius americanus</i>	long-billed curlew	None	None	WL	-
<i>Asio flammeus</i>	short-eared owl	None	None	SSC	-
<i>Asio otus</i>	long-eared owl	None	None	SSC	-

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<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-
<i>Psiloscops flammeolus</i>	flamulated owl	None	None	-	-
<i>Strix occidentalis occidentalis</i>	California spotted owl	None	None	SSC	-
<i>Polioptila californica californica</i>	coastal California gnatcatcher	Threatened	None	SSC	-
<i>Polioptila melanura</i>	black-tailed gnatcatcher	None	None	WL	-
<i>Piranga rubra</i>	summer tanager	None	None	SSC	-
<i>Plegadis chihi</i>	white-faced ibis	None	None	WL	-
<i>Calypte costae</i>	Costa's hummingbird	None	None	-	-
<i>Selasphorus rufus</i>	rufous hummingbird	None	None	-	-
<i>Selasphorus sasin</i>	Allen's hummingbird	None	None	-	-
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	None	None	SSC	-
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	None	None	SSC	-
<i>Thryomanes bewickii leucophrys</i>	San Clemente Bewick's wren	None	None	SSC	-
<i>Contopus cooperi</i>	olive-sided flycatcher	None	None	SSC	-
<i>Empidonax traillii</i>	willow flycatcher	None	Endangered	-	-
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	Endangered	Endangered	-	-
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	None	None	SSC	-
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered	-	-
<i>Vireo huttoni unitti</i>	Catalina Hutton's vireo	None	None	SSC	-
<i>Vireo vicinior</i>	gray vireo	None	None	SSC	-
Fish					
<i>Catostomus santaanae</i>	Santa Ana sucker	Threatened	None	-	-
<i>Gila orcuttii</i>	arroyo chub	None	None	SSC	-
<i>Rhinichthys osculus ssp. 3</i>	Santa Ana speckled dace	None	None	SSC	-
<i>Siphateles bicolor mohavensis</i>	Mohave tui chub	Endangered	Endangered	FP	-
<i>Gasterosteus aculeatus microcephalus</i>	resident threespine stickleback	None	None	-	-

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<i>Gasterosteus aculeatus williamsoni</i>	unarmored threespine stickleback	Endangered	Endangered	FP	-
<i>Eucyclogobius newberryi</i>	tidewater goby	Endangered	None	SSC	-
<i>Stereolepis gigas</i>	giant sea bass	None	None	-	-
<i>Oncorhynchus mykiss irideus</i>	steelhead - southern California DPS	Endangered	None	-	-
Invertebrates					
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Threatened	None	-	-
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	Endangered	None	-	-
<i>Socalchemmis gertschi</i>	Gertsch's socalchemmis spider	None	None	-	-
<i>Haliotis corrugata</i>	pink abalone	None	None	-	-
<i>Haplotrema catalinense</i>	Santa Catalina lancetooth	None	None	-	-
<i>Micrarionta gabbi</i>	San Clemente islandsnail	None	None	-	-
<i>Xerarionta intercisa</i>	horseshoe snail	None	None	-	-
<i>Xerarionta redimita</i>	wreathed cactusnail	None	None	-	-
<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	None	None	-	-
<i>Radiocentrum avalonense</i>	Catalina mountainsnail	None	None	-	-
<i>Sterkia clementina</i>	San Clemente Island blunt-top snail	None	None	-	-
<i>Gonidea angulata</i>	western ridged mussel	None	None	-	-
<i>Pristiloma shepardae</i>	Shepard's snail	None	None	-	-
<i>Trimerotropis occidentiloides</i>	Santa Monica grasshopper	None	None	-	-
<i>Bombus crotchii</i>	Crotch bumble bee	None	None	-	-
<i>Bombus morrisoni</i>	Morrison bumble bee	None	None	-	-
<i>Cicindela gabbii</i>	western tidal-flat tiger beetle	None	None	-	-
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	None	None	-	-
<i>Cicindela latesignata latesignata</i>	western beach tiger beetle	None	None	-	-
<i>Cicindela senilis frosti</i>	senile tiger beetle	None	None	-	-
<i>Ceratochrysis longimala</i>	Desert cuckoo wasp	None	None	-	-
<i>Carolella busckana</i>	Busck's gallmoth	None	None	-	-

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<i>Onychobaris langei</i>	Lange's El Segundo Dune weevil	None	None	-	-
<i>Trigonoscute dorothea dorothea</i>	Dorothy's El Segundo Dune weevil	None	None	-	-
<i>Panoquina errans</i>	wandering (=saltmarsh) skipper	None	None	-	-
<i>Diplectrona californica</i>	California diplectronan caddisfly	None	None	-	-
<i>Callophrys mossii hidakupa</i>	San Gabriel Mountains elfin butterfly	None	None	-	-
<i>Euphilotes battoides allyni</i>	El Segundo blue butterfly	Endangered	None	-	-
<i>Glaucopsyche lygdamus palosverdesensis</i>	Palos Verdes blue butterfly	Endangered	None	-	-
<i>Plebejus saepiolus aureolus</i>	San Gabriel Mountains blue butterfly	None	None	-	-
<i>Plebulina emigdonis</i>	San Emigdio blue butterfly	None	None	-	-
<i>Rhaphiomidas terminatus terminatus</i>	El Segundo flower-loving fly	None	None	-	-
<i>Danaus plexippus pop. 1</i>	monarch - California overwintering population	None	None	-	-
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	Endangered	None	-	-
<i>Coenonycha clementina</i>	San Clemente Island coenonycha beetle	None	None	-	-
<i>Brennania belkini</i>	Belkin's dune tabanid fly	None	None	-	-
<i>Coelus globosus</i>	globose dune beetle	None	None	-	-
<i>Aglaothorax longipennis</i>	Santa Monica shieldback katydid	None	None	-	-
<i>Eucosma hennei</i>	Henne's eucosman moth	None	None	-	-
Mammals					
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	None	None	FP	-
<i>Urocyon littoralis catalinae</i>	Santa Catalina Island fox	Endangered	Threatened	-	-
<i>Urocyon littoralis clementae</i>	San Clemente Island fox	None	Threatened	-	-
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None	None	SSC	-
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	None	None	SSC	-
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None	None	SSC	-
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	Endangered	None	SSC	-
<i>Perognathus alticolus inexpectatus</i>	Tehachapi pocket mouse	None	None	SSC	-

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<i>Perognathus inornatus</i>	San Joaquin Pocket Mouse	None	None	-	-
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	None	None	SSC	-
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	Endangered	None	SSC	-
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None	None	SSC	-
<i>Eumops perotis californicus</i>	western mastiff bat	None	None	SSC	-
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	None	None	SSC	-
<i>Nyctinomops macrotis</i>	big free-tailed bat	None	None	SSC	-
<i>Microtus californicus stephensi</i>	south coast marsh vole	None	None	SSC	-
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None	None	SSC	-
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	None	None	SSC	-
<i>Taxidea taxus</i>	American badger	None	None	SSC	-
<i>Macrotus californicus</i>	California leaf-nosed bat	None	None	SSC	-
<i>Ammospermophilus nelsoni</i>	Nelson's antelope squirrel	None	Threatened	-	-
<i>Neotamias speciosus speciosus</i>	lodgepole chipmunk	None	None	-	-
<i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	None	Threatened	-	-
<i>Sorex ornatus salicornicus</i>	southern California saltmarsh shrew	None	None	SSC	-
<i>Sorex ornatus willetti</i>	Santa Catalina shrew	None	None	SSC	-
<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	Candidate Threatened	SSC	-
<i>Euderma maculatum</i>	spotted bat	None	None	SSC	-
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	-	-
<i>Lasiurus blossevillii</i>	western red bat	None	None	SSC	-
<i>Lasiurus cinereus</i>	hoary bat	None	None	-	-
<i>Lasiurus xanthinus</i>	western yellow bat	None	None	SSC	-
<i>Myotis ciliolabrum</i>	western small-footed myotis	None	None	-	-
<i>Myotis evotis</i>	long-eared myotis	None	None	-	-

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<i>Myotis lucifugus</i>	little brown bat	None	None	-	-
<i>Myotis thysanodes</i>	fringed myotis	None	None	-	-
<i>Myotis velifer</i>	cave myotis	None	None	SSC	-
<i>Myotis volans</i>	long-legged myotis	None	None	-	-
<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Reptiles					
<i>Anniella pulchra pulchra</i>	silvery legless lizard	None	None	SSC	-
<i>Charina trivirgata</i>	rosy boa	None	None	-	-
<i>Charina umbratica</i>	southern rubber boa	None	Threatened	-	-
<i>Chelonia mydas</i>	green turtle	Threatened	None	-	-
<i>Arizona elegans occidentalis</i>	California glossy snake	None	None	-	-
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	None	None	-	-
<i>Lampropeltis zonata (parvirubra)</i>	California mountain kingsnake (San Bernardino population)	None	None	SSC	-
<i>Lampropeltis zonata (pulchra)</i>	California mountain kingsnake (San Diego population)	None	None	SSC	-
<i>Salvadora hexalepis virgultea</i>	coast patch-nosed snake	None	None	SSC	-
<i>Gambelia sila</i>	blunt-nosed leopard lizard	Endangered	Endangered	FP	-
<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
<i>Thamnophis hammondi</i>	two-striped garter snake	None	None	SSC	-
<i>Thamnophis sirtalis ssp.</i>	south coast garter snake	None	None	SSC	-
<i>Phrynosoma blainvillii</i>	coast horned lizard	None	None	SSC	-
<i>Aspidoscelis hyperythra</i>	orangethroat whiptail	None	None	SSC	-
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	None	None	-	-
<i>Gopherus agassizii</i>	desert tortoise	Threatened	Threatened	-	-
<i>Crotalus ruber</i>	red-diamond rattlesnake	None	None	SSC	-
<i>Xantusia riversiana</i>	island night lizard	Delisted	None	-	-
Plants					

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<i>Anomobryum julaceum</i>	slender silver moss	None	None	-	4.2
<i>Tortula californica</i>	California screw moss	None	None	-	1B.2
<i>Texosporium sancti-jacobi</i>	woven-spored lichen	None	None	-	3
<i>Graphis saxorum</i>	Baja rock lichen	None	None	-	3
<i>Amaranthus watsonii</i>	Watson's amaranth	None	None	-	4.3
<i>Cymopterus deserticola</i>	desert cymopterus	None	None	-	1B.2
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	Endangered	Endangered	-	1B.1
<i>Lomatium insulare</i>	San Nicolas Island lomatium	None	None	-	1B.2
<i>Oreonana vestita</i>	woolly mountain-parsley	None	None	-	1B.3
<i>Perideridia pringlei</i>	adobe yampah	None	None	-	4.3
<i>Spermolepis lateriflora</i>	western bristly scaleseed	None	None	-	2A
<i>Asplenium vespertinum</i>	western spleenwort	None	None	-	4.2
<i>Artemisia nesiotica</i>	island sagebrush	None	None	-	4.3
<i>Baccharis malibuensis</i>	Malibu baccharis	None	None	-	1B.1
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant	None	None	-	1B.1
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None	None	-	1B.1
<i>Constancea nevinii</i>	Nevin's woolly sunflower	None	None	-	1B.3
<i>Deinandra clementina</i>	island tarplant	None	None	-	4.3
<i>Deinandra minthornii</i>	Santa Susana tarplant	None	Rare	-	1B.2
<i>Deinandra paniculata</i>	paniculate tarplant	None	None	-	4.2
<i>Erigeron breweri</i> var. <i>jacintus</i>	San Jacinto Mountains daisy	None	None	-	4.3
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	None	None	-	1B.2
<i>Hazardia cana</i>	San Clemente Island hazardia	None	None	-	1B.2
<i>Helianthus inexpectatus</i>	Newhall sunflower	None	None	-	1B.1
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	None	None	-	1A
<i>Hulsea vestita</i> ssp. <i>gabrielensis</i>	San Gabriel Mountains hulsea	None	None	-	4.3
<i>Hulsea vestita</i> ssp. <i>parryi</i>	Parry's hulsea	None	None	-	4.3

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<i>Isocoma menziesii</i> var. <i>decumbens</i>	decumbent goldenbush	None	None	-	1B.2
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	None	-	1B.1
<i>Layia heterotricha</i>	pale-yellow layia	None	None	-	1B.1
<i>Malacothrix foliosa</i> ssp. <i>foliosa</i>	leafy malacothrix	None	None	-	4.2
<i>Microseris douglasii</i> ssp. <i>platycarpa</i>	small-flowered microseris	None	None	-	4.2
<i>Munzothamnus blairii</i>	Blair's munzothamnus	None	None	-	1B.2
<i>Packera ionophylla</i>	Tehachapi ragwort	None	None	-	4.3
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	Endangered	Endangered	-	1B.1
<i>Pseudognaphalium leucocephalum</i>	white rabbit-tobacco	None	None	-	2B.2
<i>Senecio aphanactis</i>	chaparral ragwort	None	None	-	2B.2
<i>Senecio astephanus</i>	San Gabriel ragwort	None	None	-	4.3
<i>Stylocline masonii</i>	Mason's neststraw	None	None	-	1B.1
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	None	None	-	1B.2
<i>Symphyotrichum greatae</i>	Greata's aster	None	None	-	1B.3
<i>Syntrichopappus lemmonii</i>	Lemmon's syntrichopappus	None	None	-	4.3
<i>Berberis nevini</i>	Nevin's barberry	Endangered	Endangered	-	1B.1
<i>Cryptantha clokeyi</i>	Clokey's cryptantha	None	None	-	1B.2
<i>Cryptantha traskiae</i>	Trask's cryptantha	None	None	-	1B.1
<i>Cryptantha wigginsii</i>	Wiggins' cryptantha	None	None	-	1B.2
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	None	None	-	4.2
<i>Nama stenocarpa</i>	mud nama	None	None	-	2B.2
<i>Phacelia floribunda</i>	many-flowered phacelia	None	None	-	1B.2
<i>Phacelia hubbyi</i>	Hubby's phacelia	None	None	-	4.2
<i>Phacelia mohavensis</i>	Mojave phacelia	None	None	-	4.3
<i>Phacelia ramosissima</i> var. <i>austrolitoralis</i>	south coast branching phacelia	None	None	-	3.2
<i>Phacelia stellaris</i>	Brand's star phacelia	None	None	-	1B.1

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Plagiobothrys parishii</i>	Parish's popcornflower	None	None	-	1B.1
<i>Dithyrea maritima</i>	beach spectaclepod	None	Threatened	-	1B.1
<i>Erysimum insulare</i>	island wallflower	None	None	-	1B.3
<i>Erysimum suffrutescens</i>	suffrutescent wallflower	None	None	-	4.2
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	None	None	-	4.3
<i>Nasturtium gambelii</i>	Gambel's water cress	Endangered	Threatened	-	1B.1
<i>Sibara filifolia</i>	Santa Cruz Island winged-rockcress	Endangered	None	-	1B.1
<i>Thysanocarpus rigidus</i>	rigid fringe-pod	None	None	-	1B.2
<i>Bergerocactus emoryi</i>	golden-spined cereus	None	None	-	2B.2
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	None	None	-	1B.2
<i>Nemacladus secundiflorus</i> var. <i>robbinsii</i>	Robbins' nemacladus	None	None	-	1B.2
<i>Lonicera subspicata</i> var. <i>subspicata</i>	Santa Barbara honeysuckle	None	None	-	1B.2
<i>Arenaria paludicola</i>	marsh sandwort	Endangered	Endangered	-	1B.1
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush loeflingia	None	None	-	2B.2
<i>Aphanisma blitoides</i>	aphanisma	None	None	-	1B.2
<i>Atriplex coulteri</i>	Coulter's saltbush	None	None	-	1B.2
<i>Atriplex pacifica</i>	south coast saltscale	None	None	-	1B.2
<i>Atriplex parishii</i>	Parish's brittlescale	None	None	-	1B.1
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None	None	-	1B.2
<i>Chenopodium littoreum</i>	coastal goosefoot	None	None	-	1B.2
<i>Suaeda esteroa</i>	estuary seablite	None	None	-	1B.2
<i>Suaeda taxifolia</i>	woolly seablite	None	None	-	4.2
<i>Crocianthemum greenei</i>	island rush-rose	Threatened	None	-	1B.2
<i>Calystegia felix</i>	lucky morning-glory	None	None	-	3.1
<i>Calystegia macrostegia</i> ssp. <i>amplissima</i>	island morning-glory	None	None	-	4.3
<i>Calystegia peirsonii</i>	Peirson's morning-glory	None	None	-	4.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Convolvulus simulans</i>	small-flowered morning-glory	None	None	-	4.2
<i>Dichondra occidentalis</i>	western dichondra	None	None	-	4.2
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	None	None	-	1B.1
<i>Dudleya cymosa</i> ssp. <i>agourensis</i>	Agoura Hills dudleya	Threatened	None	-	1B.2
<i>Dudleya cymosa</i> ssp. <i>crebrifolia</i>	San Gabriel River dudleya	None	None	-	1B.2
<i>Dudleya cymosa</i> ssp. <i>marcescens</i>	marcescent dudleya	Threatened	Rare	-	1B.2
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica dudleya	Threatened	None	-	1B.1
<i>Dudleya densiflora</i>	San Gabriel Mountains dudleya	None	None	-	1B.1
<i>Dudleya multicaulis</i>	many-stemmed dudleya	None	None	-	1B.2
<i>Dudleya virens</i> ssp. <i>hassei</i>	Catalina Island dudleya	None	None	-	1B.2
<i>Dudleya virens</i> ssp. <i>insularis</i>	island green dudleya	None	None	-	1B.2
<i>Dudleya virens</i> ssp. <i>virens</i>	bright green dudleya	None	None	-	1B.2
<i>Crossosoma californicum</i>	Catalina crossosoma	None	None	-	1B.2
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	None	None	-	2B.2
<i>Carex occidentalis</i>	western sedge	None	None	-	2B.3
<i>Cladium californicum</i>	California saw-grass	None	None	-	2B.2
<i>Fimbristylis thermalis</i>	hot springs fimbristylis	None	None	-	2B.2
<i>Arctostaphylos catalinae</i>	Santa Catalina Island manzanita	None	None	-	1B.2
<i>Arctostaphylos crustacea</i> ssp. <i>subcordata</i>	Santa Cruz Island manzanita	None	None	-	4.2
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i>	San Gabriel manzanita	None	None	-	1B.2
<i>Arctostaphylos parryana</i> ssp. <i>tumescens</i>	interior manzanita	None	None	-	4.3
<i>Euphorbia misera</i>	cliff spurge	None	None	-	2B.2
<i>Acmispon argophyllus</i> var. <i>adsurgens</i>	San Clemente Island bird's-foot trefoil	None	Endangered	-	1B.1
<i>Acmispon dendroideus</i> var.	island broom	None	None	-	4.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>dendroideus</i>					
<i>Acmispon dendroideus</i> var. <i>traskiae</i>	San Clemente Island lotus	Threatened	Endangered	-	1B.3
<i>Astragalus bicristatus</i>	crested milk-vetch	None	None	-	4.3
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	Endangered	None	-	1B.1
<i>Astragalus lentiginosus</i> var. <i>antonius</i>	San Antonio milk-vetch	None	None	-	1B.3
<i>Astragalus leucolobus</i>	Big Bear Valley woollypod	None	None	-	1B.2
<i>Astragalus miguelensis</i>	San Miguel Island milk-vetch	None	None	-	4.3
<i>Astragalus nevinii</i>	San Clemente Island milk-vetch	None	None	-	1B.2
<i>Astragalus preussii</i> var. <i>laxiflorus</i>	Lancaster milk-vetch	None	None	-	1B.1
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Ventura Marsh milk-vetch	Endangered	Endangered	-	1B.1
<i>Astragalus tener</i> var. <i>titi</i>	coastal dunes milk-vetch	Endangered	Endangered	-	1B.1
<i>Lupinus elatus</i>	silky lupine	None	None	-	4.3
<i>Lupinus excubitus</i> var. <i>johnstonii</i>	interior bush lupine	None	None	-	4.3
<i>Lupinus guadalupensis</i>	Guadalupe Island lupine	None	None	-	1B.2
<i>Lupinus peirsonii</i>	Peirson's lupine	None	None	-	1B.3
<i>Oxytropis oreophila</i> var. <i>oreophila</i>	rock-loving oxytrope	None	None	-	2B.3
<i>Rupertia rigida</i>	Parish's rupertia	None	None	-	4.3
<i>Trifolium palmeri</i>	southern island clover	None	None	-	4.2
<i>Quercus dumosa</i>	Nuttall's scrub oak	None	None	-	1B.1
<i>Quercus durata</i> var. <i>gabrielensis</i>	San Gabriel oak	None	None	-	4.2
<i>Quercus engelmannii</i>	Engelmann oak	None	None	-	4.2
<i>Quercus pacifica</i>	island scrub oak	None	None	-	4.2
<i>Quercus tomentella</i>	island oak	None	None	-	4.2
<i>Frasera neglecta</i>	pine green-gentian	None	None	-	4.3
<i>California macrophylla</i>	round-leaved filaree	None	None	-	1B.2
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	None	None	-	1A

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<i>Ribes viburnifolium</i>	Santa Catalina Island currant	None	None	-	1B.2
<i>Juglans californica</i>	southern California black walnut	None	None	-	4.2
<i>Juncus acutus ssp. leopoldii</i>	southwestern spiny rush	None	None	-	4.2
<i>Juncus duranii</i>	Duran's rush	None	None	-	4.3
<i>Clinopodium mimuloides</i>	monkey-flower savory	None	None	-	4.2
<i>Lepechinia fragrans</i>	fragrant pitcher sage	None	None	-	4.2
<i>Lepechinia rossii</i>	Ross' pitcher sage	None	None	-	1B.2
<i>Monardella australis ssp. cinerea</i>	gray monardella	None	None	-	4.3
<i>Monardella hypoleuca ssp. hypoleuca</i>	white-veined monardella	None	None	-	1B.3
<i>Monardella linoides ssp. oblonga</i>	Tehachapi monardella	None	None	-	1B.3
<i>Monardella macrantha ssp. hallii</i>	Hall's monardella	None	None	-	1B.3
<i>Monardella saxicola</i>	rock monardella	None	None	-	4.2
<i>Scutellaria bolanderi ssp. austromontana</i>	southern mountains skullcap	None	None	-	1B.2
<i>Calochortus catalinae</i>	Catalina mariposa-lily	None	None	-	4.2
<i>Calochortus clavatus var. clavatus</i>	club-haired mariposa-lily	None	None	-	4.3
<i>Calochortus clavatus var. gracilis</i>	slender mariposa-lily	None	None	-	1B.2
<i>Calochortus fimbriatus</i>	late-flowered mariposa-lily	None	None	-	1B.2
<i>Calochortus palmeri var. palmeri</i>	Palmer's mariposa-lily	None	None	-	1B.2
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	None	None	-	4.2
<i>Calochortus striatus</i>	alkali mariposa-lily	None	None	-	1B.2
<i>Calochortus weedii var. intermedius</i>	intermediate mariposa-lily	None	None	-	1B.2
<i>Fritillaria pinetorum</i>	pine fritillary	None	None	-	4.3
<i>Lilium humboldtii ssp. ocellatum</i>	ocellated humboldt lily	None	None	-	4.2
<i>Lilium parryi</i>	lemon lily	None	None	-	1B.2
<i>Lavatera assurgentiflora ssp. glabra</i>	southern island mallow	None	None	-	1B.1
<i>Malacothamnus clementinus</i>	San Clemente Island bush-mallow	Endangered	Endangered	-	1B.1

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<i>Malacothamnus davidsonii</i>	Davidson's bush-mallow	None	None	-	1B.2
<i>Malacothamnus fasciculatus</i> var. <i>catalinensis</i>	Santa Catalina Island bush-mallow	None	None	-	4.2
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	None	None	-	2B.2
<i>Calandrinia breweri</i>	Brewer's calandrinia	None	None	-	4.2
<i>Cistanthe maritima</i>	seaside cistanthe	None	None	-	4.2
<i>Claytonia lanceolata</i> var. <i>peirsonii</i>	Peirson's spring beauty	None	None	-	3.1
<i>Lewisia brachycalyx</i>	short-sepaled lewisia	None	None	-	2B.2
<i>Abronia maritima</i>	red sand-verbena	None	None	-	4.2
<i>Camissoniopsis guadalupensis</i> ssp. <i>clementina</i>	San Clemente Island evening-primrose	None	None	-	1B.2
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	None	None	-	3
<i>Clarkia xantiana</i> ssp. <i>parviflora</i>	Kern Canyon clarkia	None	None	-	4.2
<i>Botrychium crenulatum</i>	scalloped moonwort	None	None	-	2B.2
<i>Piperia cooperi</i>	chaparral rein orchid	None	None	-	4.2
<i>Castilleja gleasoni</i>	Mt. Gleason paintbrush	None	Rare	-	1B.2
<i>Castilleja grisea</i>	San Clemente Island paintbrush	Threatened	Endangered	-	1B.3
<i>Castilleja plagiotoma</i>	Mojave paintbrush	None	None	-	4.3
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	Endangered	Endangered	-	1B.2
<i>Orobanche parishii</i> ssp. <i>brachyloba</i>	short-lobed broomrape	None	None	-	4.2
<i>Orobanche valida</i> ssp. <i>valida</i>	Rock Creek broomrape	None	None	-	1B.2
<i>Canbya candida</i>	white pygmy-poppy	None	None	-	4.2
<i>Dendromecon harfordii</i> var. <i>rhamnoides</i>	south island bush-poppy	None	None	-	3.1
<i>Eschscholzia ramosa</i>	island poppy	None	None	-	4.3
<i>Romneya coulteri</i>	Coulter's matilija poppy	None	None	-	4.2
<i>Parnassia cirrata</i> var. <i>cirrata</i>	San Bernardino grass-of-Parnassus	None	None	-	1B.3
<i>Mimulus diffusus</i>	Palomar monkeyflower	None	None	-	4.3

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<i>Mimulus flemingii</i>	island bush monkeyflower	None	None	-	4.3
<i>Mimulus johnstonii</i>	Johnston's monkeyflower	None	None	-	4.3
<i>Mimulus traskiae</i>	Santa Catalina Island monkeyflower	None	None	-	1A
<i>Gambelia speciosa</i>	showy island snapdragon	None	None	-	1B.2
<i>Dissanthelium californicum</i>	California dissanthelium	None	None	-	1B.2
<i>Hordeum intercedens</i>	vernal barley	None	None	-	3.2
<i>Imperata brevifolia</i>	California satintail	None	None	-	2B.1
<i>Muhlenbergia appressa</i>	appressed muhly	None	None	-	2B.2
<i>Muhlenbergia californica</i>	California muhly	None	None	-	4.3
<i>Orcuttia californica</i>	California Orcutt grass	Endangered	Endangered	-	1B.1
<i>Puccinellia simplex</i>	California alkali grass	None	None	-	1B.2
<i>Eriastrum rosamondense</i>	Rosamond eriastrum	None	None	-	1B.1
<i>Gilia interior</i>	inland gilia	None	None	-	4.3
<i>Gilia latiflora</i> ssp. <i>cuyamensis</i>	Cuyama gilia	None	None	-	4.3
<i>Gilia nevinii</i>	Nevin's gilia	None	None	-	4.3
<i>Leptosiphon pygmaeus</i> ssp. <i>pygmaeus</i>	pygmy leptosiphon	None	None	-	1B.2
<i>Linanthus concinnus</i>	San Gabriel linanthus	None	None	-	1B.2
<i>Navarretia fossalis</i>	spreading navarretia	Threatened	None	-	1B.1
<i>Navarretia ojaiensis</i>	Ojai navarretia	None	None	-	1B.1
<i>Navarretia peninsularis</i>	Baja navarretia	None	None	-	1B.2
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	None	None	-	1B.1
<i>Navarretia setiloba</i>	Piute Mountains navarretia	None	None	-	1B.1
<i>Acanthoscyphus parishii</i> var. <i>parishii</i>	Parish's oxytheca	None	None	-	4.2
<i>Chorizanthe leptotheca</i>	Peninsular spineflower	None	None	-	4.2
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	Candidate	Endangered	-	1B.1
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	None	None	-	1B.1

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<i>Chorizanthe spinosa</i>	Mojave spineflower	None	None	-	4.2
<i>Dodecahema leptoceras</i>	slender-horned spineflower	Endangered	Endangered	-	1B.1
<i>Eriogonum giganteum</i> var. <i>formosum</i>	San Clemente Island buckwheat	None	None	-	1B.2
<i>Eriogonum giganteum</i> var. <i>giganteum</i>	Santa Catalina Island buckwheat	None	None	-	4.3
<i>Eriogonum grande</i> var. <i>grande</i>	island buckwheat	None	None	-	4.2
<i>Eriogonum kennedyi</i> var. <i>alpigenum</i>	southern alpine buckwheat	None	None	-	1B.3
<i>Eriogonum microthecum</i> var. <i>johnstonii</i>	Johnston's buckwheat	None	None	-	1B.3
<i>Eriogonum umbellatum</i> var. <i>minus</i>	alpine sulphur-flowered buckwheat	None	None	-	4.3
<i>Goodmania luteola</i>	golden goodmania	None	None	-	4.2
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast woolly-heads	None	None	-	1B.2
<i>Sidothea caryophylloides</i>	chickweed oxytheca	None	None	-	4.3
<i>Androsace elongata</i> ssp. <i>acuta</i>	California androsace	None	None	-	4.2
<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Colorado Desert larkspur	None	None	-	4.3
<i>Delphinium parryi</i> ssp. <i>purpureum</i>	Mt. Pinos larkspur	None	None	-	4.3
<i>Delphinium variegatum</i> ssp. <i>kinkiense</i>	San Clemente Island larkspur	Endangered	Endangered	-	1B.1
<i>Delphinium variegatum</i> ssp. <i>thornei</i>	Thorne's royal larkspur	None	None	-	1B.1
<i>Ceanothus megacarpus</i> var. <i>insularis</i>	island ceanothus	None	None	-	4.3
<i>Rhamnus pirifolia</i>	island redberry	None	None	-	4.2
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	island mountain-mahogany	None	None	-	4.3
<i>Cercocarpus traskiae</i>	Catalina Island mountain-mahogany	Endangered	Endangered	-	1B.1
<i>Drymocallis cuneifolia</i> var. <i>ewanii</i>	Ewan's cinquefoil	None	None	-	1B.3
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	None	None	-	1B.1
<i>Lyonothamnus floribundus</i> ssp.	Santa Cruz Island ironwood	None	None	-	1B.2

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<i>aspleniifolius</i>					
<i>Lyonothamnus floribundus</i> ssp. <i>floribundus</i>	Santa Catalina Island ironwood	None	None	-	1B.2
<i>Potentilla multijuga</i>	Ballona cinquefoil	None	None	-	1A
<i>Galium angustifolium</i> ssp. <i>gabrielense</i>	San Antonio Canyon bedstraw	None	None	-	4.3
<i>Galium catalinense</i> ssp. <i>acrispum</i>	San Clemente Island bedstraw	None	Endangered	-	1B.3
<i>Galium catalinense</i> ssp. <i>catalinense</i>	Santa Catalina Island bedstraw	None	None	-	1B.3
<i>Galium cliftonsmithii</i>	Santa Barbara bedstraw	None	None	-	4.3
<i>Galium grande</i>	San Gabriel bedstraw	None	None	-	1B.2
<i>Galium jepsonii</i>	Jepson's bedstraw	None	None	-	4.3
<i>Galium johnstonii</i>	Johnston's bedstraw	None	None	-	4.3
<i>Galium nuttallii</i> ssp. <i>insulare</i>	Nuttall's island bedstraw	None	None	-	4.3
<i>Nolina cismontana</i>	chaparral nolina	None	None	-	1B.2
<i>Heuchera abramsii</i>	Abrams' alumroot	None	None	-	4.3
<i>Heuchera caespitosa</i>	urn-flowered alumroot	None	None	-	4.3
<i>Jepsonia malvifolia</i>	island jepsonia	None	None	-	4.2
<i>Lithophragma maximum</i>	San Clemente Island woodland star	Endangered	Endangered	-	1B.1
<i>Scrophularia villosa</i>	Santa Catalina figwort	None	None	-	1B.2
<i>Selaginella asprella</i>	bluish spike-moss	None	None	-	4.3
<i>Lycium brevipes</i> var. <i>hassei</i>	Santa Catalina Island desert-thorn	None	None	-	3.1
<i>Lycium californicum</i>	California box-thorn	None	None	-	4.2
<i>Lycium torreyi</i>	Torrey's box-thorn	None	None	-	4.2
<i>Solanum wallacei</i>	Wallace's nightshade	None	None	-	1B.1
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	None	None	-	2B.2
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	Threatened	Endangered	-	1B.1
<i>Brodiaea kinkiensis</i>	San Clemente Island brodiaea	None	None	-	1B.2
<i>Muilla coronata</i>	crowned muilla	None	None	-	4.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Triteleia clementina</i>	San Clemente Island triteleia	None	None	-	1B.2
<i>Viola pinetorum</i> var. <i>grisea</i>	grey-leaved violet	None	None	-	1B.3

Notes: CDFW = California Department of Fish and Wildlife

¹ Status abbreviations: FP = fully protected; SSC = species of special concern; WL = watch list

² Rare plant rank:

- 1A: Presumed extirpated in California and either rare or extinct elsewhere
- 1B: Rare, threatened, or endangered in California and elsewhere
- 2A: Presumed extirpated in California, but common elsewhere
- 2B: Rare, threatened, or endangered in California, but more common elsewhere
- 3: More information is needed (review list)
- 4: Limited distribution (watch list)

Threat rank:

- .1: Seriously threatened in California
- .2: Moderately threatened in California
- .3: Not very threatened in California

California Natural Diversity Database Species for Orange County

Available <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>

Accessed June 1, 2016

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
Amphibians					
<i>Anaxyrus californicus</i>	arroyo toad	Endangered	None	SSC	-
<i>Lithobates pipiens</i>	northern leopard frog	None	None	SSC	-
<i>Rana draytonii</i>	California red-legged frog	Threatened	None	SSC	-
<i>Taricha torosa</i>	Coast Range newt	None	None	SSC	-
<i>Spea hammondi</i>	western spadefoot	None	None	SSC	-
Birds					
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL	-
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-
<i>Buteo regalis</i>	ferruginous hawk	None	None	WL	-
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	-	-
<i>Circus cyaneus</i>	northern harrier	None	None	SSC	-
<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	FP	-
<i>Pandion haliaetus</i>	osprey	None	None	WL	-
<i>Eremophila alpestris actia</i>	California horned lark	None	None	WL	-
<i>Synthliboramphus scrippsi</i>	Scripps's murrelet	Candidate	Threatened	-	-
<i>Bucephala islandica</i>	Barrow's goldeneye	None	None	SSC	-
<i>Chaetura vauxi</i>	Vaux's swift	None	None	SSC	-
<i>Cypseloides niger</i>	black swift	None	None	SSC	-
<i>Ardea alba</i>	great egret	None	None	-	-

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Ardea herodias</i>	great blue heron	None	None	-	-
<i>Botaurus lentiginosus</i>	American bittern	None	None	-	-
<i>Egretta thula</i>	snowy egret	None	None	-	-
<i>Ixobrychus exilis</i>	least bittern	None	None	SSC	-
<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	Threatened	None	SSC	-
<i>Charadrius montanus</i>	mountain plover	None	None	SSC	-
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Threatened	Endangered	-	-
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	None	None	WL	-
<i>Ammodramus savannarum</i>	grasshopper sparrow	None	None	SSC	-
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	None	None	WL	-
<i>Chondestes grammacus</i>	lark sparrow	None	None	-	-
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	None	Endangered	-	-
<i>Passerculus sandwichensis rostratus</i>	large-billed savannah sparrow	None	None	SSC	-
<i>Spizella atrogularis</i>	black-chinned sparrow	None	None	-	-
<i>Falco columbarius</i>	merlin	None	None	WL	-
<i>Falco mexicanus</i>	prairie falcon	None	None	WL	-
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-
<i>Spinus lawrencei</i>	Lawrence's goldfinch	None	None	-	-
<i>Grus canadensis canadensis</i>	lesser sandhill crane	None	None	SSC	-
<i>Progne subis</i>	purple martin	None	None	SSC	-
<i>Riparia riparia</i>	bank swallow	None	Threatened	-	-
<i>Agelaius tricolor</i>	tricolored blackbird	None	None	SSC	-
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None	SSC	-
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None	SSC	-
<i>Hydroprogne caspia</i>	Caspian tern	None	None	-	-
<i>Larus californicus</i>	California gull	None	None	WL	-
<i>Rynchops niger</i>	black skimmer	None	None	SSC	-

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Sterna forsteri</i>	Forster's tern	None	None	-	-
<i>Sternula antillarum browni</i>	California least tern	Endangered	Endangered	FP	-
<i>Thalasseus elegans</i>	elegant tern	None	None	WL	-
<i>Baeolophus inornatus</i>	oak titmouse	None	None	-	-
<i>Icteria virens</i>	yellow-breasted chat	None	None	SSC	-
<i>Setophaga petechia</i>	yellow warbler	None	None	SSC	-
<i>Pelecanus erythrorhynchos</i>	American white pelican	None	None	SSC	-
<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	FP	-
<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-
<i>Picoides nuttallii</i>	Nuttall's woodpecker	None	None	-	-
<i>Coturnicops noveboracensis</i>	yellow rail	None	None	SSC	-
<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	FP	-
<i>Rallus longirostris levipes</i>	light-footed clapper rail	Endangered	Endangered	FP	-
<i>Numenius americanus</i>	long-billed curlew	None	None	WL	-
<i>Asio flammeus</i>	short-eared owl	None	None	SSC	-
<i>Asio otus</i>	long-eared owl	None	None	SSC	-
<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-
<i>Strix occidentalis occidentalis</i>	California spotted owl	None	None	SSC	-
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	Threatened	None	SSC	-
<i>Poliophtila melanura</i>	black-tailed gnatcatcher	None	None	WL	-
<i>Plegadis chihi</i>	white-faced ibis	None	None	WL	-
<i>Calypte costae</i>	Costa's hummingbird	None	None	-	-
<i>Selasphorus sasin</i>	Allen's hummingbird	None	None	-	-
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	None	None	SSC	-
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	None	None	SSC	-
<i>Contopus cooperi</i>	olive-sided flycatcher	None	None	SSC	-
<i>Empidonax traillii</i>	willow flycatcher	None	Endangered	-	-

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	Endangered	Endangered	-	-
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	None	None	SSC	-
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered	-	-
<i>Vireo huttoni unitti</i>	Catalina Hutton's vireo	None	None	SSC	-
Fish					
<i>Catostomus santaanae</i>	Santa Ana sucker	Threatened	None	-	-
<i>Gila orcuttii</i>	arroyo chub	None	None	SSC	-
<i>Rhinichthys osculus ssp.</i>	Santa Ana speckled dace	None	None	SSC	-
<i>Eucyclogobius newberryi</i>	tidewater goby	Endangered	None	SSC	-
<i>Oncorhynchus mykiss irideus</i>	steelhead - southern California DPS	Endangered	None	-	-
Invertebrates					
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	Endangered	None	-	-
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	Endangered	None	-	-
<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	None	None	-	-
<i>Bombus crotchii</i>	Crotch bumble bee	None	None	-	-
<i>Cicindela gabbii</i>	western tidal-flat tiger beetle	None	None	-	-
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	None	None	-	-
<i>Cicindela latesignata latesignata</i>	western beach tiger beetle	None	None	-	-
<i>Cicindela senilis frosti</i>	senile tiger beetle	None	None	-	-
<i>Cicindela tranquebarica viridissima</i>	greenest tiger beetle	None	None	-	-
<i>Trigonoscuta dorothea dorothea</i>	Dorothy's El Segundo Dune weevil	None	None	-	-
<i>Euphyes vestris harbisoni</i>	dun skipper	None	None	-	-
<i>Panoquina errans</i>	wandering (=saltmarsh) skipper	None	None	-	-
<i>Danaus plexippus pop.</i>	monarch - California overwintering population	None	None	-	-
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	Endangered	None	-	-
<i>Coelus globosus</i>	globose dune beetle	None	None	-	-

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
Mammals					
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None	None	SSC	-
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	None	None	SSC	-
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	None	None	SSC	-
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	Endangered	None	SSC	-
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None	None	SSC	-
<i>Eumops perotis californicus</i>	western mastiff bat	None	None	SSC	-
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	None	None	SSC	-
<i>Nyctinomops macrotis</i>	big free-tailed bat	None	None	SSC	-
<i>Microtus californicus stephensi</i>	south coast marsh vole	None	None	SSC	-
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None	None	SSC	-
<i>Taxidea taxus</i>	American badger	None	None	SSC	-
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	None	None	SSC	-
<i>Sorex ornatus salicornicus</i>	southern California saltmarsh shrew	None	None	SSC	-
<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
<i>Lasiurus blossevillei</i>	western red bat	None	None	SSC	-
<i>Lasiurus cinereus</i>	hoary bat	None	None	-	-
<i>Lasiurus xanthinus</i>	western yellow bat	None	None	SSC	-
<i>Myotis ciliolabrum</i>	western small-footed myotis	None	None	-	-
<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Reptiles					
<i>Anniella pulchra pulchra</i>	silvery legless lizard	None	None	SSC	-
<i>Charina trivirgata</i>	rosy boa	None	None	-	-
<i>Chelonia mydas</i>	green turtle	Threatened	None	-	-
<i>Arizona elegans occidentalis</i>	California glossy snake	None	None	-	-
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	None	None	-	-
<i>Diadophis punctatus similis</i>	San Diego ringneck snake	None	None	-	-
<i>Lampropeltis zonata (pulchra)</i>	California mountain kingsnake (San Diego	None	None	SSC	-

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	population)				
<i>Salvadora hexalepis virgultea</i>	coast patch-nosed snake	None	None	SSC	-
<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	None	None	-	-
<i>Thamnophis hammondi</i>	two-striped garter snake	None	None	SSC	-
<i>Phrynosoma blainvillii</i>	coast horned lizard	None	None	SSC	-
<i>Plestiodon skiltonianus interparietalis</i>	Coronado Island skink	None	None	SSC	-
<i>Aspidoscelis hyperythra</i>	orangethroat whiptail	None	None	SSC	-
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	None	None	-	-
<i>Crotalus ruber</i>	red-diamond rattlesnake	None	None	SSC	-
Plants					
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	Endangered	Endangered	-	1B.1
<i>Asplenium vespertinum</i>	western spleenwort	None	None	-	4.2
<i>Baccharis malibuensis</i>	Malibu baccharis	None	None	-	1B.1
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant	None	None	-	1B.1
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None	None	-	1B.1
<i>Deinandra paniculata</i>	paniculate tarplant	None	None	-	4.2
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	None	None	-	1A
<i>Holocarpa virgata</i> ssp. <i>elongata</i>	curving tarplant	None	None	-	4.2
<i>Isocoma menziesii</i> var. <i>decumbens</i>	decumbent goldenbush	None	None	-	1B.2
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	None	-	1B.1
<i>Malacothrix saxatilis</i> var. <i>saxatilis</i>	cliff malacothrix	None	None	-	4.2
<i>Microseris douglasii</i> ssp. <i>platycarpa</i>	small-flowered microseris	None	None	-	4.2
<i>Pentachaeta aurea</i> ssp. <i>allenii</i>	Allen's pentachaeta	None	None	-	1B.1
<i>Pentachaeta aurea</i> ssp. <i>aurea</i>	golden-rayed pentachaeta	None	None	-	4.2
<i>Pseudognaphalium leucocephalum</i>	white rabbit-tobacco	None	None	-	2B.2
<i>Senecio aphanactis</i>	chaparral ragwort	None	None	-	2B.2
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	None	None	-	1B.2

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<i>Verbesina dissita</i>	big-leaved crownbeard	Threatened	Threatened	-	1B.1
<i>Harpagonella palmeri</i>	Palmer's grapplehook	None	None	-	4.2
<i>Nama stenocarpa</i>	mud nama	None	None	-	2B.2
<i>Phacelia hubbyi</i>	Hubby's phacelia	None	None	-	4.2
<i>Phacelia keckii</i>	Santiago Peak phacelia	None	None	-	1B.3
<i>Phacelia ramosissima</i> var. <i>australitoralis</i>	south coast branching phacelia	None	None	-	3.2
<i>Phacelia stellaris</i>	Brand's star phacelia	None	None	-	1B.1
<i>Caulanthus simulans</i>	Payson's jewelflower	None	None	-	4.2
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	None	None	-	4.3
<i>Nasturtium gambelii</i>	Gambel's water cress	Endangered	Threatened	-	1B.1
<i>Aphanisma blitoides</i>	aphanisma	None	None	-	1B.2
<i>Atriplex coulteri</i>	Coulter's saltbush	None	None	-	1B.2
<i>Atriplex pacifica</i>	south coast saltscale	None	None	-	1B.2
<i>Atriplex parishii</i>	Parish's brittlescale	None	None	-	1B.1
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None	None	-	1B.2
<i>Suaeda esteroa</i>	estuary seablite	None	None	-	1B.2
<i>Suaeda taxifolia</i>	woolly seablite	None	None	-	4.2
<i>Convolvulus simulans</i>	small-flowered morning-glory	None	None	-	4.2
<i>Dichondra occidentalis</i>	western dichondra	None	None	-	4.2
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	None	None	-	1B.1
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica dudleya	Threatened	None	-	1B.1
<i>Dudleya multicaulis</i>	many-stemmed dudleya	None	None	-	1B.2
<i>Dudleya stolonifera</i>	Laguna Beach dudleya	Threatened	Threatened	-	1B.1
<i>Dudleya viscida</i>	sticky dudleya	None	None	-	1B.2
<i>Hesperocyparis forbesii</i>	Tecate cypress	None	None	-	1B.1
<i>Hesperocyparis goveniana</i>	Gowen cypress	Threatened	None	-	1B.2
<i>Eleocharis parvula</i>	small spikerush	None	None	-	4.3
<i>Comarostaphylis diversifolia</i> ssp.	summer holly	None	None	-	1B.2

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<i>diversifolia</i>					
<i>Euphorbia misera</i>	cliff spurge	None	None	-	2B.2
<i>Tetracoccus dioicus</i>	Parry's tetraococcus	None	None	-	1B.2
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	Endangered	None	-	1B.1
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Ventura Marsh milk-vetch	Endangered	Endangered	-	1B.1
<i>Quercus dumosa</i>	Nuttall's scrub oak	None	None	-	1B.1
<i>Juglans californica</i>	southern California black walnut	None	None	-	4.2
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	southwestern spiny rush	None	None	-	4.2
<i>Clinopodium chandleri</i>	San Miguel savory	None	None	-	1B.2
<i>Lepechinia cardiophylla</i>	heart-leaved pitcher sage	None	None	-	1B.2
<i>Lepechinia ganderi</i>	Gander's pitcher sage	None	None	-	1B.3
<i>Monardella hypoleuca</i> ssp. <i>intermedia</i>	intermediate monardella	None	None	-	1B.3
<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	None	None	-	1B.3
<i>Calochortus catalinae</i>	Catalina mariposa-lily	None	None	-	4.2
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	None	None	-	4.2
<i>Calochortus weedii</i> var. <i>intermedius</i>	intermediate mariposa-lily	None	None	-	1B.2
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	ocellated humboldt lily	None	None	-	4.2
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	None	None	-	2B.2
<i>Calandrinia breweri</i>	Brewer's calandrinia	None	None	-	4.2
<i>Cistanthe maritima</i>	seaside cistanthe	None	None	-	4.2
<i>Abronia maritima</i>	red sand-verbena	None	None	-	4.2
<i>Abronia villosa</i> var. <i>aurita</i>	chaparral sand-verbena	None	None	-	1B.1
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	None	None	-	3
<i>Piperia cooperi</i>	chaparral rein orchid	None	None	-	4.2
<i>Piperia leptopetala</i>	narrow-petaled rein orchid	None	None	-	4.3
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	Endangered	Endangered	-	1B.2
<i>Romneya coulteri</i>	Coulter's matilija poppy	None	None	-	4.2

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<i>Mimulus clevelandii</i>	Cleveland's bush monkeyflower	None	None	-	4.2
<i>Mimulus diffusus</i>	Palomar monkeyflower	None	None	-	4.3
<i>Penstemon californicus</i>	California beardtongue	None	None	-	1B.2
<i>Hordeum intercedens</i>	vernal barley	None	None	-	3.2
<i>Imperata brevifolia</i>	California satintail	None	None	-	2B.1
<i>Orcuttia californica</i>	California Orcutt grass	Endangered	Endangered	-	1B.1
<i>Collomia diversifolia</i>	serpentine collomia	None	None	-	4.3
<i>Eriastrum densifolium ssp. sanctorum</i>	Santa Ana River woollystar	Endangered	Endangered	-	1B.1
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	None	None	-	1B.1
<i>Polygala cornuta var. fishiae</i>	Fish's milkwort	None	None	-	4.3
<i>Chorizanthe parryi var. fernandina</i>	San Fernando Valley spineflower	Candidate	Endangered	-	1B.1
<i>Chorizanthe polygonoides var. longispina</i>	long-spined spineflower	None	None	-	1B.2
<i>Nemacaulis denudata var. denudata</i>	coast woolly-heads	None	None	-	1B.2
<i>Horkelia cuneata var. puberula</i>	mesa horkelia	None	None	-	1B.1
<i>Nolina cismontana</i>	chaparral nolina	None	None	-	1B.2
<i>Lycium californicum</i>	California box-thorn	None	None	-	4.2
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	Threatened	Endangered	-	1B.1

Notes: CDFW = California Department of Fish and Wildlife

¹ Status abbreviations: FP = fully protected; SSC = species of special concern; WL = watch list

² Rare plant rank:

- 1A: Presumed extirpated in California and either rare or extinct elsewhere
- 1B: Rare, threatened, or endangered in California and elsewhere
- 2A: Presumed extirpated in California, but common elsewhere
- 2B: Rare, threatened, or endangered in California, but more common elsewhere
- 3: More information is needed (review list)
- 4: Limited distribution (watch list)

Threat rank:

- .1: Seriously threatened in California
- .2: Moderately threatened in California
- .3: Not very threatened in California

California Natural Diversity Database Species for San Bernardino County

Available <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>

Accessed June 1, 2016

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Amphibians					
<i>Anaxyrus californicus</i>	arroyo toad	Endangered	None	SSC	-
<i>Incilius alvarius</i>	Sonoran desert toad	None	None	SSC	-
<i>Batrachoseps gabrieli</i>	San Gabriel slender salamander	None	None	-	-
<i>Ensatina klauberi</i>	large-blotched salamander	None	None	SSC	-
<i>Rana draytonii</i>	California red-legged frog	Threatened	None	SSC	-
<i>Rana muscosa</i>	southern mountain yellow-legged frog	Endangered	Endangered	SSC	-
<i>Spea hammondi</i>	western spadefoot	None	None	SSC	-
Birds					
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-
<i>Accipiter gentilis</i>	northern goshawk	None	None	SSC	-
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL	-
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-
<i>Buteo regalis</i>	ferruginous hawk	None	None	WL	-
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	-	-
<i>Circus cyaneus</i>	northern harrier	None	None	SSC	-
<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	FP	-
<i>Pandion haliaetus</i>	osprey	None	None	WL	-
<i>Parabuteo unicinctus</i>	Harris' hawk	None	None	WL	-
<i>Eremophila alpestris actia</i>	California horned lark	None	None	WL	-
<i>Chaetura vauxi</i>	Vaux's swift	None	None	SSC	-

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<i>Cypseloides niger</i>	black swift	None	None	SSC	-
<i>Ardea alba</i>	great egret	None	None	-	-
<i>Ardea herodias</i>	great blue heron	None	None	-	-
<i>Botaurus lentiginosus</i>	American bittern	None	None	-	-
<i>Egretta thula</i>	snowy egret	None	None	-	-
<i>Ixobrychus exilis</i>	least bittern	None	None	SSC	-
<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-
<i>Cardinalis cardinalis</i>	northern cardinal	None	None	WL	-
<i>Gymnogyps californianus</i>	California condor	Endangered	Endangered	FP	-
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	Threatened	None	SSC	-
<i>Charadrius montanus</i>	mountain plover	None	None	SSC	-
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Threatened	Endangered	-	-
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	None	None	WL	-
<i>Ammodramus savannarum</i>	grasshopper sparrow	None	None	SSC	-
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	None	None	WL	-
<i>Chondestes grammacus</i>	lark sparrow	None	None	-	-
<i>Junco hyemalis caniceps</i>	gray-headed junco	None	None	WL	-
<i>Melospiza aberti</i>	Abert's towhee	None	None	-	-
<i>Passerculus sandwichensis alaudinus</i>	Bryant's savannah sparrow	None	None	SSC	-
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	None	Endangered	-	-
<i>Passerculus sandwichensis rostratus</i>	large-billed savannah sparrow	None	None	SSC	-
<i>Spizella atrogularis</i>	black-chinned sparrow	None	None	-	-
<i>Spizella breweri</i>	Brewer's sparrow	None	None	-	-
<i>Spizella passerina</i>	chipping sparrow	None	None	-	-
<i>Falco columbarius</i>	merlin	None	None	WL	-
<i>Falco mexicanus</i>	prairie falcon	None	None	WL	-
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-
<i>Spinus lawrencei</i>	Lawrence's goldfinch	None	None	-	-

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<i>Gavia immer</i>	common loon	None	None	SSC	-
<i>Grus canadensis canadensis</i>	lesser sandhill crane	None	None	SSC	-
<i>Progne subis</i>	purple martin	None	None	SSC	-
<i>Riparia riparia</i>	bank swallow	None	Threatened	-	-
<i>Agelaius tricolor</i>	tricolored blackbird	None	None	SSC	-
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None	SSC	-
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None	SSC	-
<i>Chlidonias niger</i>	black tern	None	None	SSC	-
<i>Larus californicus</i>	California gull	None	None	WL	-
<i>Sterna forsteri</i>	Forster's tern	None	None	-	-
<i>Toxostoma bendirei</i>	Bendire's thrasher	None	None	SSC	-
<i>Toxostoma crissale</i>	Crissal thrasher	None	None	SSC	-
<i>Toxostoma lecontei</i>	Le Conte's thrasher	None	None	SSC	-
<i>Baeolophus inornatus</i>	oak titmouse	None	None	-	-
<i>Icteria virens</i>	yellow-breasted chat	None	None	SSC	-
<i>Oreothlypis luciae</i>	Lucy's warbler	None	None	SSC	-
<i>Oreothlypis virginiae</i>	Virginia's warbler	None	None	WL	-
<i>Setophaga occidentalis</i>	hermit warbler	None	None	-	-
<i>Setophaga petechia</i>	yellow warbler	None	None	SSC	-
<i>Setophaga petechia sonorana</i>	Sonoran yellow warbler	None	None	SSC	-
<i>Pelecanus erythrorhynchos</i>	American white pelican	None	None	SSC	-
<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-
<i>Colaptes chrysoides</i>	gilded flicker	None	Endangered	-	-
<i>Melanerpes lewis</i>	Lewis' woodpecker	None	None	-	-
<i>Melanerpes uropygialis</i>	Gila woodpecker	None	Endangered	-	-
<i>Picoides albolarvatus</i>	White-headed woodpecker	None	None	-	-
<i>Picoides nuttallii</i>	Nuttall's woodpecker	None	None	-	-
<i>Sphyrapicus ruber</i>	red-breasted sapsucker	None	None	-	-

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<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	FP	-
<i>Rallus longirostris yumanensis</i>	Yuma clapper rail	Endangered	Threatened	FP	-
<i>Asio flammeus</i>	short-eared owl	None	None	SSC	-
<i>Asio otus</i>	long-eared owl	None	None	SSC	-
<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-
<i>Micrathene whitneyi</i>	elf owl	None	Endangered	-	-
<i>Psiloscops flammeolus</i>	flamulated owl	None	None	-	-
<i>Strix occidentalis occidentalis</i>	California spotted owl	None	None	SSC	-
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	Threatened	None	SSC	-
<i>Poliophtila melanura</i>	black-tailed gnatcatcher	None	None	WL	-
<i>Piranga flava</i>	hepatic tanager	None	None	WL	-
<i>Piranga rubra</i>	summer tanager	None	None	SSC	-
<i>Plegadis chihi</i>	white-faced ibis	None	None	WL	-
<i>Calypste costae</i>	Costa's hummingbird	None	None	-	-
<i>Selasphorus rufus</i>	rufous hummingbird	None	None	-	-
<i>Selasphorus sasin</i>	Allen's hummingbird	None	None	-	-
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	None	None	SSC	-
<i>Contopus cooperi</i>	olive-sided flycatcher	None	None	SSC	-
<i>Empidonax traillii</i>	willow flycatcher	None	Endangered	-	-
<i>Empidonax traillii brewsteri</i>	little willow flycatcher	None	Endangered	-	-
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	Endangered	Endangered	-	-
<i>Myiarchus tyrannulus</i>	brown-crested flycatcher	None	None	WL	-
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	None	None	SSC	-
<i>Vireo bellii arizonae</i>	Arizona bell's vireo	None	Endangered	-	-
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered	-	-
<i>Vireo vicinior</i>	gray vireo	None	None	SSC	-
Fish					

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<i>Catostomus latipinnis</i>	flannelmouth sucker	None	None	-	-
<i>Catostomus santaanae</i>	Santa Ana sucker	Threatened	None	-	-
<i>Xyrauchen texanus</i>	razorback sucker	Endangered	Endangered	FP	-
<i>Gila elegans</i>	bonytail	Endangered	Endangered	-	-
<i>Gila orcuttii</i>	arroyo chub	None	None	SSC	-
<i>Ptychocheilus lucius</i>	Colorado pikeminnow	Endangered	Endangered	FP	-
<i>Rhinichthys osculus ssp.</i>	Amargosa Canyon speckled dace	None	None	SSC	-
<i>Rhinichthys osculus ssp.</i>	Santa Ana speckled dace	None	None	SSC	-
<i>Siphateles bicolor mohavensis</i>	Mohave tui chub	Endangered	Endangered	FP	-
<i>Cyprinodon nevadensis amargosae</i>	Amargosa pupfish	None	None	SSC	-
<i>Cyprinodon nevadensis nevadensis</i>	Saratoga Springs pupfish	None	None	SSC	-
<i>Gasterosteus aculeatus williamsoni</i>	unarmored threespine stickleback	Endangered	Endangered	FP	-
<i>Oncorhynchus mykiss irideus</i>	steelhead - southern California DPS	Endangered	None	-	-
Invertebrates					
<i>Texella kokoweef</i>	Kokoweef Crystal Cave harvestman	None	None	-	-
<i>Assimineia infima</i>	Badwater snail	None	None	-	-
<i>Eremarionta morongoana</i>	Morongo (=Colorado) desertsnailed	None	None	-	-
<i>Eremarionta rowelli bakerensis</i>	Baker's desertsnailed	None	None	-	-
<i>Helminthoglypta mohaveana</i>	Victorville shoulderband	None	None	-	-
<i>Helminthoglypta taylora</i>	westfork shoulderband	None	None	-	-
<i>Anodonta californiensis</i>	California floater	None	None	-	-
<i>Gonidea angulata</i>	western ridged mussel	None	None	-	-
<i>Paranomada californica</i>	California cuckoo bee	None	None	-	-
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	-
<i>Bombus crotchii</i>	Crotch bumble bee	None	None	-	-
<i>Bombus morrisoni</i>	Morrison bumble bee	None	None	-	-
<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
<i>Rhopalolemma robertsi</i>	Roberts' rhopalolemma bee	None	None	-	-

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<i>Belostoma saratogae</i>	Saratoga Springs belostoman bug	None	None	-	-
<i>Parnopes borregoensis</i>	Borrego parnopes cuckoo wasp	None	None	-	-
<i>Carolella busckana</i>	Busck's gallmoth	None	None	-	-
<i>Miloderes nelsoni</i>	Nelson's miloderes weevil	None	None	-	-
<i>Trigonoscutea brunnotessellata</i>	brown tassel trigonoscutea weevil	None	None	-	-
<i>Hydroporus simplex</i>	simple hydroporus diving beetle	None	None	-	-
<i>Psychomastax deserticola</i>	desert monkey grasshopper	None	None	-	-
<i>Halictus harmonius</i>	harmonius halictid bee	None	None	-	-
<i>Diplectrona californica</i>	California diplectronan caddisfly	None	None	-	-
<i>Oliarces clara</i>	cheeseweed owlfly (cheeseweed moth lacewing)	None	None	-	-
<i>Callophrys mossii hidakupa</i>	San Gabriel Mountains elfin butterfly	None	None	-	-
<i>Plebejus saepiolus aureolus</i>	San Gabriel Mountains blue butterfly	None	None	-	-
<i>Plebulina emigdionis</i>	San Emigdio blue butterfly	None	None	-	-
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi Sands flower-loving fly	Endangered	None	-	-
<i>Pelocoris shoshone</i>	Amargosa naucorid bug	None	None	-	-
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	Endangered	None	-	-
<i>Euchloe hyantis andrewsi</i>	Andrew's marble butterfly	None	None	-	-
<i>Macrobaenetes kelsoensis</i>	Kelso giant sand treader cricket	None	None	-	-
<i>Glaresis arenata</i>	Kelso Dunes scarab glaresis beetle	None	None	-	-
<i>Polyphylla erratica</i>	Death Valley June beetle	None	None	-	-
<i>Ammopelmatus kelsoensis</i>	Kelso jerusalem cricket	None	None	-	-
Mammals					
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	None	None	FP	-
<i>Canis lupus</i>	gray wolf	Endangered	Endangered	-	-
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	Endangered	Threatened	-	-
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None	None	SSC	-
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	None	None	SSC	-

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<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None	None	SSC	-
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	Endangered	None	SSC	-
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	Endangered	Threatened	-	-
<i>Perognathus alticolus alticolus</i>	white-eared pocket mouse	None	None	SSC	-
<i>Perognathus longimembris bangsi</i>	Palm Springs pocket mouse	None	None	SSC	-
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	None	None	SSC	-
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	Endangered	None	SSC	-
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None	None	SSC	-
<i>Eumops perotis californicus</i>	western mastiff bat	None	None	SSC	-
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	None	None	SSC	-
<i>Microtus californicus mohavensis</i>	Mohave river vole	None	None	SSC	-
<i>Microtus californicus scirpensis</i>	Amargosa vole	Endangered	Endangered	-	-
<i>Neotoma albigula venusta</i>	Colorado Valley woodrat	None	None	-	-
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None	None	SSC	-
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	None	None	SSC	-
<i>Sigmodon arizonae plenus</i>	Colorado River cotton rat	None	None	SSC	-
<i>Lontra canadensis sonora</i>	southwestern river otter	None	None	SSC	-
<i>Taxidea taxus</i>	American badger	None	None	SSC	-
<i>Leptonycteris yerbabuenae</i>	lesser long-nosed bat	Endangered	None	-	-
<i>Macrotus californicus</i>	California leaf-nosed bat	None	None	SSC	-
<i>Glaucomys sabrinus californicus</i>	San Bernardino flying squirrel	None	None	SSC	-
<i>Neotamias panamintinus acrus</i>	Kingston Mountain chipmunk	None	None	-	-
<i>Neotamias speciosus speciosus</i>	lodgepole chipmunk	None	None	-	-
<i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	None	Threatened	-	-
<i>Xerospermophilus tereticaudus chlorus</i>	Palm Springs round-tailed ground squirrel	None	None	SSC	-
<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	Candidate Threatened	SSC	-

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<i>Euderma maculatum</i>	spotted bat	None	None	SSC	-
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	-	-
<i>Lasiurus blossevillii</i>	western red bat	None	None	SSC	-
<i>Lasiurus cinereus</i>	hoary bat	None	None	-	-
<i>Lasiurus xanthinus</i>	western yellow bat	None	None	SSC	-
<i>Myotis ciliolabrum</i>	western small-footed myotis	None	None	-	-
<i>Myotis evotis</i>	long-eared myotis	None	None	-	-
<i>Myotis lucifugus</i>	little brown bat	None	None	-	-
<i>Myotis thysanodes</i>	fringed myotis	None	None	-	-
<i>Myotis velifer</i>	cave myotis	None	None	SSC	-
<i>Myotis volans</i>	long-legged myotis	None	None	-	-
<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Reptiles					
<i>Anniella pulchra pulchra</i>	silvery legless lizard	None	None	SSC	-
<i>Charina trivirgata</i>	rosy boa	None	None	-	-
<i>Charina umbratica</i>	southern rubber boa	None	Threatened	-	-
<i>Arizona elegans occidentalis</i>	California glossy snake	None	None	-	-
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	None	None	-	-
<i>Lampropeltis zonata (parvirubra)</i>	California mountain kingsnake (San Bernardino population)	None	None	SSC	-
<i>Salvadora hexalepis virgultea</i>	coast patch-nosed snake	None	None	SSC	-
<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	None	None	-	-
<i>Heloderma suspectum cinctum</i>	banded gila monster	None	None	SSC	-
<i>Thamnophis hammondi</i>	two-striped garter snake	None	None	SSC	-
<i>Thamnophis sirtalis ssp.</i>	south coast garter snake	None	None	SSC	-
<i>Phrynosoma blainvillii</i>	coast horned lizard	None	None	SSC	-
<i>Uma scoparia</i>	Mojave fringe-toed lizard	None	None	SSC	-

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<i>Aspidoscelis hyperythra</i>	orangethroat whiptail	None	None	SSC	-
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	None	None	-	-
<i>Gopherus agassizii</i>	desert tortoise	Threatened	Threatened	-	-
<i>Crotalus ruber</i>	red-diamond rattlesnake	None	None	SSC	-
Plants					
<i>Plagiobryoides vinosula</i>	wine-colored tufa moss	None	None	-	4.2
<i>Grimmia vaginulata</i>	vaginulate grimmia	None	None	-	1B.1
<i>Jaffueliobryum raui</i>	Rau's jaffueliobryum moss	None	None	-	2B.3
<i>Jaffueliobryum wrightii</i>	Wright's jaffueliobryum moss	None	None	-	2B.3
<i>Tortella alpicola</i>	alpine crisp moss	None	None	-	2B.3
<i>Solorina spongiosa</i>	fringed chocolate chip lichen	None	None	-	2B.2
<i>Agave utahensis</i> var. <i>nevadensis</i>	Clark Mountain agave	None	None	-	4.2
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	None	None	-	1B.2
<i>Allium atrorubens</i> var. <i>atorrubens</i>	Great Basin onion	None	None	-	2B.3
<i>Allium atrorubens</i> var. <i>cristatum</i>	Inyo onion	None	None	-	4.3
<i>Allium marvinii</i>	Yucaipa onion	None	None	-	1B.2
<i>Allium nevadense</i>	Nevada onion	None	None	-	2B.3
<i>Allium parishii</i>	Parish's onion	None	None	-	4.3
<i>Amaranthus watsonii</i>	Watson's amaranth	None	None	-	4.3
<i>Cymopterus deserticola</i>	desert cymopterus	None	None	-	1B.2
<i>Cymopterus gilmanii</i>	Gilman's cymopterus	None	None	-	2B.3
<i>Cymopterus multinervatus</i>	purple-nerve cymopterus	None	None	-	2B.2
<i>Oreonana vestita</i>	woolly mountain-parsley	None	None	-	1B.3
<i>Perideridia parishii</i> ssp. <i>parishii</i>	Parish's yampah	None	None	-	2B.2
<i>Podistera nevadensis</i>	Sierra podistera	None	None	-	4.3
<i>Asclepias asperula</i> ssp. <i>asperula</i>	antelope-horns	None	None	-	4.3
<i>Asclepias nyctaginifolia</i>	Mojave milkweed	None	None	-	2B.1
<i>Funastrum utahense</i>	Utah vine milkweed	None	None	-	4.2

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<i>Matelea parvifolia</i>	spear-leaf matelea	None	None	-	2B.3
<i>Asplenium vespertinum</i>	western spleenwort	None	None	-	4.2
<i>Ageratina herbacea</i>	desert ageratina	None	None	-	2B.3
<i>Ambrosia monogyra</i>	singlewhorl burrobrush	None	None	-	2B.2
<i>Antennaria marginata</i>	white-margined everlasting	None	None	-	2B.3
<i>Artemisia palmeri</i>	San Diego sagewort	None	None	-	4.2
<i>Bahia neomexicana</i>	many-flowered bahia	None	None	-	2B.3
<i>Centromadia pungens ssp. laevis</i>	smooth tarplant	None	None	-	1B.1
<i>Cirsium arizonicum var. tenuisectum</i>	desert mountain thistle	None	None	-	1B.2
<i>Deinandra mohavensis</i>	Mojave tarplant	None	Endangered	-	1B.3
<i>Deinandra paniculata</i>	paniculate tarplant	None	None	-	4.2
<i>Enceliopsis nudicaulis var. nudicaulis</i>	naked-stemmed daisy	None	None	-	4.3
<i>Ericameria albida</i>	white-flowered rabbitbrush	None	None	-	4.2
<i>Ericameria nana</i>	dwarf goldenbush	None	None	-	4.3
<i>Erigeron breweri var. jacinteus</i>	San Jacinto Mountains daisy	None	None	-	4.3
<i>Erigeron oxyphyllus</i>	wand-like fleabane daisy	None	None	-	2B.3
<i>Erigeron parishii</i>	Parish's daisy	Threatened	None	-	1B.1
<i>Erigeron uncialis var. uncialis</i>	limestone daisy	None	None	-	1B.2
<i>Erigeron utahensis</i>	Utah daisy	None	None	-	2B.3
<i>Eriophyllum lanatum var. obovatum</i>	southern Sierra woolly sunflower	None	None	-	4.3
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	None	None	-	1B.2
<i>Helianthus nuttallii ssp. parishii</i>	Los Angeles sunflower	None	None	-	1A
<i>Hulsea vestita ssp. gabrielensis</i>	San Gabriel Mountains hulsea	None	None	-	4.3
<i>Hulsea vestita ssp. parryi</i>	Parry's hulsea	None	None	-	4.3
<i>Hulsea vestita ssp. pygmaea</i>	pygmy hulsea	None	None	-	1B.3
<i>Hymenopappus filifolius var. eriopodus</i>	hairy-podded fine-leaf hymenopappus	None	None	-	2B.3
<i>Hymenoxys odorata</i>	bitter hymenoxys	None	None	-	2B.1
<i>Lasthenia glabrata ssp. coulteri</i>	Coulter's goldfields	None	None	-	1B.1

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<i>Packera bernardina</i>	San Bernardino ragwort	None	None	-	1B.2
<i>Packera ionophylla</i>	Tehachapi ragwort	None	None	-	4.3
<i>Petradoria pumila</i> ssp. <i>pumila</i>	rock goldenrod	None	None	-	4.3
<i>Pyrrocoma uniflora</i> var. <i>gossypina</i>	Bear Valley pyrrocoma	None	None	-	1B.2
<i>Sanvitalia abertii</i>	Abert's sanvitalia	None	None	-	2B.2
<i>Senecio aphanactis</i>	chaparral ragwort	None	None	-	2B.2
<i>Senecio astephanus</i>	San Gabriel ragwort	None	None	-	4.3
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	None	None	-	1B.2
<i>Symphyotrichum greatae</i>	Greata's aster	None	None	-	1B.3
<i>Syntrichopappus lemmonii</i>	Lemmon's syntrichopappus	None	None	-	4.3
<i>Taraxacum californicum</i>	California dandelion	Endangered	None	-	1B.1
<i>Tetradymia argyraea</i>	striped horsebrush	None	None	-	4.3
<i>Xanthisma gracile</i>	annual bristleweed	None	None	-	4.3
<i>Azolla microphylla</i>	Mexican mosquito fern	None	None	-	4.2
<i>Berberis fremontii</i>	Fremont barberry	None	None	-	2B.3
<i>Berberis harrisoniana</i>	Kofa barberry	None	None	-	1B.2
<i>Berberis nevinii</i>	Nevin's barberry	Endangered	Endangered	-	1B.1
<i>Cryptantha clokeyi</i>	Clokey's cryptantha	None	None	-	1B.2
<i>Cryptantha costata</i>	ribbed cryptantha	None	None	-	4.3
<i>Cryptantha holoptera</i>	winged cryptantha	None	None	-	4.3
<i>Cryptantha tumulosa</i>	New York Mountains cryptantha	None	None	-	4.3
<i>Eriodictyon angustifolium</i>	narrow-leaved yerba santa	None	None	-	2B.3
<i>Lithospermum incisum</i>	plains stoneseed	None	None	-	2B.3
<i>Nama dichotoma</i> var. <i>dichotoma</i>	forked purple mat	None	None	-	2B.3
<i>Phacelia anelsonii</i>	Aven Nelson's phacelia	None	None	-	2B.3
<i>Phacelia barnebyana</i>	Barneby's phacelia	None	None	-	2B.3
<i>Phacelia coerulea</i>	sky-blue phacelia	None	None	-	2B.3
<i>Phacelia exilis</i>	Transverse Range phacelia	None	None	-	4.3

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<i>Phacelia mohavensis</i>	Mojave phacelia	None	None	-	4.3
<i>Phacelia mustelina</i>	Death Valley round-leaved phacelia	None	None	-	1B.3
<i>Phacelia parishii</i>	Parish's phacelia	None	None	-	1B.1
<i>Phacelia perityloides</i> var. <i>jaegeri</i>	Jaeger's phacelia	None	None	-	1B.3
<i>Phacelia pulchella</i> var. <i>gooddingii</i>	Goodding's phacelia	None	None	-	2B.3
<i>Phacelia stellaris</i>	Brand's star phacelia	None	None	-	1B.1
<i>Pholistoma auritum</i> var. <i>arizonicum</i>	Arizona pholistoma	None	None	-	2B.3
<i>Plagiobothrys parishii</i>	Parish's popcornflower	None	None	-	1B.1
<i>Tiquilia canescens</i> var. <i>pulchella</i>	Chocolate Mountains tiquilia	None	None	-	3.2
<i>Boechera dispar</i>	pinyon rockcress	None	None	-	2B.3
<i>Boechera lincolnensis</i>	Lincoln rockcress	None	None	-	2B.3
<i>Boechera parishii</i>	Parish's rockcress	None	None	-	1B.2
<i>Boechera peirsonii</i>	San Bernardino rockcress	None	None	-	1B.2
<i>Boechera shockleyi</i>	Shockley's rockcress	None	None	-	2B.2
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	None	None	-	4.3
<i>Nasturtium gambelii</i>	Gambel's water cress	Endangered	Threatened	-	1B.1
<i>Physaria chambersii</i>	Chambers' physaria	None	None	-	2B.3
<i>Physaria kingii</i> ssp. <i>bernardina</i>	San Bernardino Mountains bladderpod	Endangered	None	-	1B.1
<i>Sibara deserti</i>	desert winged-rockcress	None	None	-	4.3
<i>Streptanthus bernardinus</i>	Laguna Mountains jewelflower	None	None	-	4.3
<i>Streptanthus campestris</i>	southern jewelflower	None	None	-	1B.3
<i>Thelypodium stenopetalum</i>	slender-petaled thelypodium	Endangered	Endangered	-	1B.1
<i>Thysanocarpus rigidus</i>	rigid fringe-pod	None	None	-	1B.2
<i>Carnegiea gigantea</i>	saguaro	None	None	-	2B.2
<i>Coryphantha alversonii</i>	Alverson's foxtail cactus	None	None	-	4.3
<i>Coryphantha chlorantha</i>	desert pincushion	None	None	-	2B.1
<i>Coryphantha vivipara</i> var. <i>rosea</i>	viviparous foxtail cactus	None	None	-	2B.2
<i>Echinocereus engelmannii</i> var. <i>howei</i>	Howe's hedgehog cactus	None	None	-	1B.1

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<i>Grusonia parishii</i>	Parish's club-cholla	None	None	-	2B.2
<i>Mammillaria grahamii</i> var. <i>grahamii</i>	Graham fishhook cactus	None	None	-	2B.2
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	None	None	-	1B.2
<i>Opuntia wigginsii</i>	Wiggins' cholla	None	None	-	3.3
<i>Opuntia xcurvispina</i>	curved-spine beavertail	None	None	-	2B.2
<i>Sclerocactus johnsonii</i>	Johnson's bee-hive cactus	None	None	-	2B.2
<i>Sclerocactus polyancistrus</i>	Mojave fish-hook cactus	None	None	-	4.2
<i>Nemacladus gracilis</i>	graceful nemacladus	None	None	-	4.3
<i>Wislizenia refracta</i> ssp. <i>refracta</i>	jackass-clover	None	None	-	2B.2
<i>Arenaria lanuginosa</i> var. <i>saxosa</i>	rock sandwort	None	None	-	2B.3
<i>Arenaria paludicola</i>	marsh sandwort	Endangered	Endangered	-	1B.1
<i>Eremogone congesta</i> var. <i>charlestonensis</i>	Charleston sandwort	None	None	-	1B.3
<i>Eremogone ursina</i>	Big Bear Valley sandwort	Threatened	None	-	1B.2
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush loeflingia	None	None	-	2B.2
<i>Minuartia obtusiloba</i>	alpine sandwort	None	None	-	4.3
<i>Mortonia utahensis</i>	Utah mortonia	None	None	-	4.3
<i>Atriplex coulteri</i>	Coulter's saltbush	None	None	-	1B.2
<i>Atriplex parishii</i>	Parish's brittlescale	None	None	-	1B.1
<i>Cleomella brevipes</i>	short-pedicelled cleomella	None	None	-	4.2
<i>Calystegia felix</i>	lucky morning-glory	None	None	-	3.1
<i>Convolvulus simulans</i>	small-flowered morning-glory	None	None	-	4.2
<i>Dudleya abramsii</i> ssp. <i>affinis</i>	San Bernardino Mountains dudleya	None	None	-	1B.2
<i>Dudleya multicaulis</i>	many-stemmed dudleya	None	None	-	1B.2
<i>Sedum niveum</i>	Davidson's stonecrop	None	None	-	4.2
<i>Glossopetalon pungens</i>	pungent glossopetalon	None	None	-	1B.2
<i>Cuscuta californica</i> var. <i>apiculata</i>	pointed dodder	None	None	-	3
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	None	None	-	2B.2

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<i>Carex comosa</i>	bristly sedge	None	None	-	2B.1
<i>Carex occidentalis</i>	western sedge	None	None	-	2B.3
<i>Carex scirpoidea ssp. pseudoscirpoidea</i>	western single-spiked sedge	None	None	-	2B.2
<i>Cladium californicum</i>	California saw-grass	None	None	-	2B.2
<i>Fimbristylis thermalis</i>	hot springs fimbristylis	None	None	-	2B.2
<i>Schoenus nigricans</i>	black bog-rush	None	None	-	2B.2
<i>Dryopteris filix-mas</i>	male fern	None	None	-	2B.3
<i>Polystichum kruckebergii</i>	Kruckeberg's sword fern	None	None	-	4.3
<i>Woodsia plummerae</i>	Plummer's woodsia	None	None	-	2B.3
<i>Arctostaphylos glandulosa ssp. gabrielensis</i>	San Gabriel manzanita	None	None	-	1B.2
<i>Arctostaphylos parryana ssp. tumescens</i>	interior manzanita	None	None	-	4.3
<i>Arctostaphylos refugioensis</i>	Refugio manzanita	None	None	-	1B.2
<i>Ditaxis claryana</i>	glandular ditaxis	None	None	-	2B.2
<i>Euphorbia abramsiana</i>	Abrams' spurge	None	None	-	2B.2
<i>Euphorbia exstipulata var. exstipulata</i>	Clark Mountain spurge	None	None	-	2B.1
<i>Euphorbia jaegeri</i>	Orocopia Mountains spurge	None	None	-	1B.1
<i>Euphorbia parryi</i>	Parry's spurge	None	None	-	2B.3
<i>Euphorbia platysperma</i>	flat-seeded spurge	None	None	-	1B.2
<i>Euphorbia revoluta</i>	revolute spurge	None	None	-	4.3
<i>Euphorbia vallis-mortae</i>	Death Valley sandmat	None	None	-	4.2
<i>Tetracoccus hallii</i>	Hall's tetracoccus	None	None	-	4.3
<i>Tragia ramosa</i>	desert tragia	None	None	-	4.3
<i>Acmispon argyraeus var. multicaulis</i>	scrub lotus	None	None	-	1B.3
<i>Acmispon argyraeus var. notitius</i>	Providence Mountains lotus	None	None	-	1B.3
<i>Astragalus albens</i>	Cushenbury milk-vetch	Endangered	None	-	1B.1
<i>Astragalus allochrous var. playanus</i>	playa milk-vetch	None	None	-	2B.2
<i>Astragalus bernardinus</i>	San Bernardino milk-vetch	None	None	-	1B.2

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<i>Astragalus bicristatus</i>	crested milk-vetch	None	None	-	4.3
<i>Astragalus cimae</i> var. <i>cimae</i>	Cima milk-vetch	None	None	-	1B.2
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	None	None	-	1B.1
<i>Astragalus insularis</i> var. <i>harwoodii</i>	Harwood's milk-vetch	None	None	-	2B.2
<i>Astragalus jaegerianus</i>	Lane Mountain milk-vetch	Endangered	None	-	1B.1
<i>Astragalus lentiginosus</i> var. <i>antonius</i>	San Antonio milk-vetch	None	None	-	1B.3
<i>Astragalus lentiginosus</i> var. <i>borreganus</i>	Borrego milk-vetch	None	None	-	4.3
<i>Astragalus lentiginosus</i> var. <i>sierrae</i>	Big Bear Valley milk-vetch	None	None	-	1B.2
<i>Astragalus leucolobus</i>	Big Bear Valley woollypod	None	None	-	1B.2
<i>Astragalus nutans</i>	Providence Mountains milk-vetch	None	None	-	4.3
<i>Astragalus preussii</i> var. <i>preussii</i>	Preuss' milk-vetch	None	None	-	2B.3
<i>Astragalus tidestromii</i>	Tidestrom's milk-vetch	None	None	-	2B.2
<i>Astragalus tricarínatus</i>	triple-ribbed milk-vetch	Endangered	None	-	1B.2
<i>Lupinus elatus</i>	silky lupine	None	None	-	4.3
<i>Oxytropis oreophila</i> var. <i>oreophila</i>	rock-loving oxytrope	None	None	-	2B.3
<i>Parkinsonia microphylla</i>	little-leaved palo verde	None	None	-	4.3
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	None	None	-	1B.2
<i>Psoralea arborescens</i> var. <i>arborescens</i>	Mojave indigo-bush	None	None	-	4.3
<i>Psoralea fremontii</i> var. <i>attenuatus</i>	narrow-leaved psoralea	None	None	-	2B.3
<i>Robinia neomexicana</i>	New Mexico locust	None	None	-	2B.3
<i>Rupertia rigida</i>	Parish's rupertia	None	None	-	4.3
<i>Senna covesii</i>	Cove's cassia	None	None	-	2B.2
<i>Quercus turbinella</i>	shrub live oak	None	None	-	4.3
<i>Frasera albomarginata</i> var. <i>albomarginata</i>	desert green-gentian	None	None	-	2B.2
<i>Frasera albomarginata</i> var. <i>induta</i>	Clark Mountain green-gentian	None	None	-	1B.2
<i>Frasera neglecta</i>	pine green-gentian	None	None	-	4.3

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<i>Gentiana fremontii</i>	Fremont's gentian	None	None	-	2B.3
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	None	None	-	1A
<i>Fendlerella utahensis</i>	yerba desierto	None	None	-	4.3
<i>Sisyrinchium longipes</i>	timberland blue-eyed grass	None	None	-	2B.2
<i>Juglans californica</i>	southern California black walnut	None	None	-	4.2
<i>Juncus cooperi</i>	Cooper's rush	None	None	-	4.3
<i>Juncus duranii</i>	Duran's rush	None	None	-	4.3
<i>Juncus interior</i>	inland rush	None	None	-	2B.2
<i>Juncus nodosus</i>	knotted rush	None	None	-	2B.3
<i>Hedeoma drummondii</i>	Drummond's false pennyroyal	None	None	-	2B.2
<i>Hedeoma nana</i> ssp. <i>californica</i>	California mock pennyroyal	None	None	-	4.3
<i>Lepechinia fragrans</i>	fragrant pitcher sage	None	None	-	4.2
<i>Monarda pectinata</i>	plains bee balm	None	None	-	2B.3
<i>Monardella australis</i> ssp. <i>cinerea</i>	gray monardella	None	None	-	4.3
<i>Monardella australis</i> ssp. <i>jokerstii</i>	Jokerst's monardella	None	None	-	1B.1
<i>Monardella boydii</i>	Boyd's monardella	None	None	-	1B.2
<i>Monardella eremicola</i>	Clark Mountain monardella	None	None	-	1B.3
<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	None	None	-	1B.3
<i>Monardella pringlei</i>	Pringle's monardella	None	None	-	1A
<i>Monardella robisonii</i>	Robison's monardella	None	None	-	1B.3
<i>Monardella saxicola</i>	rock monardella	None	None	-	4.2
<i>Poliomintha incana</i>	frosted mint	None	None	-	2A
<i>Salvia funerea</i>	Death Valley sage	None	None	-	4.3
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	southern mountains skullcap	None	None	-	1B.2
<i>Teucrium glandulosum</i>	desert germander	None	None	-	2B.3
<i>Trichostema micranthum</i>	small-flowered bluecurls	None	None	-	4.3
<i>Calochortus catalinae</i>	Catalina mariposa-lily	None	None	-	4.2

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<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	None	None	-	1B.2
<i>Calochortus plummerae</i>	Plummer's mariposa-lily	None	None	-	4.2
<i>Calochortus striatus</i>	alkali mariposa-lily	None	None	-	1B.2
<i>Calochortus weedii</i> var. <i>intermedius</i>	intermediate mariposa-lily	None	None	-	1B.2
<i>Fritillaria pinetorum</i>	pine fritillary	None	None	-	4.3
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	ocellated humboldt lily	None	None	-	4.2
<i>Lilium parryi</i>	lemon lily	None	None	-	1B.2
<i>Linum puberulum</i>	plains flax	None	None	-	2B.3
<i>Mentzelia eremophila</i>	solitary blazing star	None	None	-	4.2
<i>Mentzelia polita</i>	polished blazing star	None	None	-	1B.2
<i>Mentzelia pterosperma</i>	wing-seed blazing star	None	None	-	2B.2
<i>Mentzelia puberula</i>	Darlington's blazing star	None	None	-	2B.2
<i>Mentzelia tricuspidis</i>	spiny-hair blazing star	None	None	-	2B.1
<i>Mentzelia tridentata</i>	creamy blazing star	None	None	-	1B.3
<i>Petalonyx thurberi</i> ssp. <i>gilmanii</i>	Death Valley sandpaper-plant	None	None	-	1B.3
<i>Abutilon parvulum</i>	dwarf abutilon	None	None	-	2B.3
<i>Ayenia compacta</i>	California ayenia	None	None	-	2B.3
<i>Malacothamnus parishii</i>	Parish's bush-mallow	None	None	-	1A
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checkerbloom	None	Rare	-	1B.2
<i>Sidalcea malviflora</i> ssp. <i>dolosa</i>	Bear Valley checkerbloom	None	None	-	1B.2
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	None	None	-	2B.2
<i>Sidalcea pedata</i>	bird-foot checkerbloom	Endangered	Endangered	-	1B.1
<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	Rusby's desert-mallow	None	None	-	1B.2
<i>Calyptridium pygmaeum</i>	pygmy pussypaws	None	None	-	1B.2
<i>Claytonia lanceolata</i> var. <i>peirsonii</i>	Peirson's spring beauty	None	None	-	3.1
<i>Lewisia brachycalyx</i>	short-sepaled lewisia	None	None	-	2B.2
<i>Abronia nana</i> var. <i>covillei</i>	Coville's dwarf abronia	None	None	-	4.2
<i>Abronia villosa</i> var. <i>aurita</i>	chaparral sand-verbena	None	None	-	1B.1

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<i>Acleisanthes nevadensis</i>	desert wing-fruit	None	None	-	2B.3
<i>Mirabilis coccinea</i>	red four o'clock	None	None	-	2B.3
<i>Mirabilis tenuiloba</i>	slender-lobed four o'clock	None	None	-	4.3
<i>Tripterocalyx micranthus</i>	small-flowered sand-verbena	None	None	-	2B.3
<i>Menodora scabra</i> var. <i>scabra</i>	rough menodora	None	None	-	2B.3
<i>Menodora spinescens</i> var. <i>mohavensis</i>	Mojave menodora	None	None	-	1B.2
<i>Chylismia arenaria</i>	sand evening-primrose	None	None	-	2B.2
<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose	None	None	-	2B.3
<i>Eremothera boothii</i> ssp. <i>intermedia</i>	Booth's hairy evening-primrose	None	None	-	2B.3
<i>Oenothera cavernae</i>	cave evening-primrose	None	None	-	2B.1
<i>Oenothera cespitosa</i> ssp. <i>crinita</i>	caespitose evening-primrose	None	None	-	4.2
<i>Oenothera longissima</i>	long-stem evening-primrose	None	None	-	2B.2
<i>Botrychium crenulatum</i>	scalloped moonwort	None	None	-	2B.2
<i>Botrychium minganense</i>	Mingan moonwort	None	None	-	2B.2
<i>Malaxis monophyllos</i> var. <i>brachypoda</i>	white bog adder's-mouth	None	None	-	2B.1
<i>Piperia leptopetala</i>	narrow-petaled rein orchid	None	None	-	4.3
<i>Castilleja cinerea</i>	ash-gray paintbrush	Threatened	None	-	1B.2
<i>Castilleja lasiorhyncha</i>	San Bernardino Mountains owl's-clover	None	None	-	1B.2
<i>Castilleja montigena</i>	Heckard's paintbrush	None	None	-	4.3
<i>Castilleja plagiotoma</i>	Mojave paintbrush	None	None	-	4.3
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	Endangered	Endangered	-	1B.2
<i>Chloropyron tecopense</i>	Tecopa bird's-beak	None	None	-	1B.2
<i>Cordylanthus eremicus</i> ssp. <i>eremicus</i>	desert bird's-beak	None	None	-	4.3
<i>Cordylanthus parviflorus</i>	small-flowered bird's-beak	None	None	-	2B.3
<i>Orobanche valida</i> ssp. <i>valida</i>	Rock Creek broomrape	None	None	-	1B.2
<i>Arctomecon merriamii</i>	white bear poppy	None	None	-	2B.2
<i>Canbya candida</i>	white pygmy-poppy	None	None	-	4.2
<i>Eschscholzia androuxii</i>	Joshua Tree poppy	None	None	-	4.3

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i>	Red Rock poppy	None	None	-	1B.2
<i>Parnassia cirrata</i> var. <i>cirrata</i>	San Bernardino grass-of-Parnassus	None	None	-	1B.3
<i>Proboscidea althaeifolia</i>	desert unicorn-plant	None	None	-	4.3
<i>Mimulus exiguus</i>	San Bernardino Mountains monkeyflower	None	None	-	1B.2
<i>Mimulus johnstonii</i>	Johnston's monkeyflower	None	None	-	4.3
<i>Mimulus mohavensis</i>	Mojave monkeyflower	None	None	-	1B.2
<i>Mimulus purpureus</i>	little purple monkeyflower	None	None	-	1B.2
<i>Pinus edulis</i>	two-needle pinyon pine	None	None	-	3.3
<i>Penstemon albomarginatus</i>	white-margined beardtongue	None	None	-	1B.1
<i>Penstemon bicolor</i> ssp. <i>roseus</i>	rosy two-toned beardtongue	None	None	-	1B.1
<i>Penstemon calcareus</i>	limestone beardtongue	None	None	-	1B.3
<i>Penstemon fruticiformis</i> var. <i>amargosae</i>	Amargosa beardtongue	None	None	-	1B.3
<i>Penstemon stephensii</i>	Stephens' beardtongue	None	None	-	1B.3
<i>Penstemon thompsoniae</i>	Thompson's beardtongue	None	None	-	2B.3
<i>Penstemon thurberi</i>	Thurber's beardtongue	None	None	-	4.2
<i>Penstemon utahensis</i>	Utah beardtongue	None	None	-	2B.3
<i>Blepharidachne kingii</i>	King's eyelash grass	None	None	-	2B.3
<i>Bouteloua eriopoda</i>	black grama	None	None	-	4.2
<i>Bouteloua trifida</i>	three-awned grama	None	None	-	2B.3
<i>Digitaria californica</i> var. <i>californica</i>	Arizona cottontop	None	None	-	2B.3
<i>Elymus salina</i>	Salina Pass wild-rye	None	None	-	2B.3
<i>Enneapogon desvauxii</i>	nine-awned pappus grass	None	None	-	2B.2
<i>Erioneuron pilosum</i>	hairy erioneuron	None	None	-	2B.3
<i>Imperata brevifolia</i>	California satintail	None	None	-	2B.1
<i>Muhlenbergia alopecuroides</i>	wolftail	None	None	-	2B.2
<i>Muhlenbergia appressa</i>	appressed muhly	None	None	-	2B.2
<i>Muhlenbergia arsenei</i>	tough muhly	None	None	-	2B.3

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Muhlenbergia californica</i>	California muhly	None	None	-	4.3
<i>Muhlenbergia fragilis</i>	delicate muhly	None	None	-	2B.3
<i>Muhlenbergia pauciflora</i>	few-flowered muhly	None	None	-	2B.3
<i>Munroa squarrosa</i>	false buffalo-grass	None	None	-	2B.2
<i>Panicum hirticaule ssp. hirticaule</i>	roughstalk witch grass	None	None	-	2B.1
<i>Poa atropurpurea</i>	San Bernardino blue grass	Endangered	None	-	1B.2
<i>Puccinellia parishii</i>	Parish's alkali grass	None	None	-	1B.1
<i>Puccinellia simplex</i>	California alkali grass	None	None	-	1B.2
<i>Scleropogon brevifolius</i>	burro grass	None	None	-	2B.3
<i>Sphenopholis obtusata</i>	prairie wedge grass	None	None	-	2B.2
<i>Stipa arida</i>	Mormon needle grass	None	None	-	2B.3
<i>Stipa divaricata</i>	small-flowered rice grass	None	None	-	2B.3
<i>Aliciella ripleyi</i>	Ripley's aliciella	None	None	-	2B.3
<i>Aliciella triodon</i>	coyote gilia	None	None	-	2B.2
<i>Eriastrum densifolium ssp. sanctorum</i>	Santa Ana River woollystar	Endangered	Endangered	-	1B.1
<i>Eriastrum harwoodii</i>	Harwood's eriastrum	None	None	-	1B.2
<i>Eriastrum sparsiflorum</i>	few-flowered eriastrum	None	None	-	4.3
<i>Gilia interior</i>	inland gilia	None	None	-	4.3
<i>Gilia leptantha ssp. leptantha</i>	San Bernardino gilia	None	None	-	1B.3
<i>Gilia leptantha ssp. pinetorum</i>	pine gilia	None	None	-	4.3
<i>Linanthus bernardinus</i>	Pioneertown linanthus	None	None	-	1B.2
<i>Linanthus concinnus</i>	San Gabriel linanthus	None	None	-	1B.2
<i>Linanthus killipii</i>	Baldwin Lake linanthus	None	None	-	1B.2
<i>Linanthus maculatus ssp. maculatus</i>	Little San Bernardino Mtns. linanthus	None	None	-	1B.2
<i>Linanthus orcuttii</i>	Orcutt's linanthus	None	None	-	1B.3
<i>Navarretia peninsularis</i>	Baja navarretia	None	None	-	1B.2
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	None	None	-	1B.1
<i>Phlox dolichantha</i>	Big Bear Valley phlox	None	None	-	1B.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	None	-	1B.2
<i>Polygala acanthoclada</i>	thorny milkwort	None	None	-	2B.3
<i>Polygala intermontana</i>	intermountain milkwort	None	None	-	2B.1
<i>Acanthoscyphus parishii</i> var. <i>cienegensis</i>	Cienega Seca oxytheca	None	None	-	1B.3
<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>	Cushenbury oxytheca	Endangered	None	-	1B.1
<i>Acanthoscyphus parishii</i> var. <i>parishii</i>	Parish's oxytheca	None	None	-	4.2
<i>Chorizanthe leptotheca</i>	Peninsular spineflower	None	None	-	4.2
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	None	None	-	1B.1
<i>Chorizanthe spinosa</i>	Mojave spineflower	None	None	-	4.2
<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	white-bracted spineflower	None	None	-	1B.2
<i>Dodecahema leptoceras</i>	slender-horned spineflower	Endangered	Endangered	-	1B.1
<i>Eriogonum bifurcatum</i>	forked buckwheat	None	None	-	1B.2
<i>Eriogonum contiguum</i>	Reveal's buckwheat	None	None	-	2B.3
<i>Eriogonum evanidum</i>	vanishing wild buckwheat	None	None	-	1B.1
<i>Eriogonum heermannii</i> var. <i>floccosum</i>	Clark Mountain buckwheat	None	None	-	4.3
<i>Eriogonum kennedyi</i> var. <i>alpigenum</i>	southern alpine buckwheat	None	None	-	1B.3
<i>Eriogonum kennedyi</i> var. <i>austromontanum</i>	southern mountain buckwheat	Threatened	None	-	1B.2
<i>Eriogonum microthecum</i> var. <i>alpinum</i>	northern limestone buckwheat	None	None	-	4.3
<i>Eriogonum microthecum</i> var. <i>johnstonii</i>	Johnston's buckwheat	None	None	-	1B.3
<i>Eriogonum microthecum</i> var. <i>lacus-ursi</i>	Bear Lake buckwheat	None	None	-	1B.1
<i>Eriogonum microthecum</i> var. <i>lapidicola</i>	Inyo Mountains buckwheat	None	None	-	4.3
<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	Cushenbury buckwheat	Endangered	None	-	1B.1
<i>Eriogonum thornei</i>	Thorne's buckwheat	None	Endangered	-	1B.2
<i>Eriogonum umbellatum</i> var. <i>juniporinum</i>	juniper sulphur-flowered buckwheat	None	None	-	2B.3
<i>Eriogonum umbellatum</i> var. <i>minus</i>	alpine sulphur-flowered buckwheat	None	None	-	4.3
<i>Nemacaulis denudata</i> var. <i>gracilis</i>	slender cottonheads	None	None	-	2B.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Sidotheca caryophylloides</i>	chickweed oxytheca	None	None	-	4.3
<i>Portulaca halimoides</i>	desert portulaca	None	None	-	4.2
<i>Androsace elongata</i> ssp. <i>acuta</i>	California androsace	None	None	-	4.2
<i>Argyroschisma limitanea</i> ssp. <i>limitanea</i>	southwestern false cloak-fern	None	None	-	2B.1
<i>Astrolepis cochisensis</i> ssp. <i>cochisensis</i>	scaly cloak fern	None	None	-	2B.3
<i>Myriopteris wootonii</i>	Wooton's lace fern	None	None	-	2B.3
<i>Pellaea truncata</i>	spiny cliff-brake	None	None	-	2B.3
<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Colorado Desert larkspur	None	None	-	4.3
<i>Delphinium parryi</i> ssp. <i>purpureum</i>	Mt. Pinos larkspur	None	None	-	4.3
<i>Delphinium scaposum</i>	bare-stem larkspur	None	None	-	2B.3
<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	None	None	-	3.1
<i>Drymocallis cuneifolia</i> var. <i>cuneifolia</i>	wedgeleaf woodbeauty	None	None	-	1B.1
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	None	None	-	1B.1
<i>Horkelia wilderae</i>	Barton Flats horkelia	None	None	-	1B.1
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	silver-haired ivesia	None	None	-	1B.2
<i>Ivesia jaegeri</i>	Jaeger's ivesia	None	None	-	1B.3
<i>Ivesia patellifera</i>	Kingston Mountains ivesia	None	None	-	1B.3
<i>Prunus eremophila</i>	Mojave Desert plum	None	None	-	1B.2
<i>Galium angustifolium</i> ssp. <i>gabrielense</i>	San Antonio Canyon bedstraw	None	None	-	4.3
<i>Galium angustifolium</i> ssp. <i>gracillimum</i>	slender bedstraw	None	None	-	4.2
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	None	None	-	1B.2
<i>Galium hilendiae</i> ssp. <i>kingstonense</i>	Kingston Mountains bedstraw	None	None	-	1B.3
<i>Galium jepsonii</i>	Jepson's bedstraw	None	None	-	4.3
<i>Galium johnstonii</i>	Johnston's bedstraw	None	None	-	4.3
<i>Galium munzii</i>	Munz's bedstraw	None	None	-	4.3
<i>Galium proliferum</i>	desert bedstraw	None	None	-	2B.2
<i>Galium wrightii</i>	Wright's bedstraw	None	None	-	2B.3
<i>Heuchera abramsii</i>	Abrams' alumroot	None	None	-	4.3

Scientific Name	Common Name	Federal Status	State Status	CDFW Status ¹	CA Rare Plant Rank ²
<i>Heuchera caespitosa</i>	urn-flowered alumroot	None	None	-	4.3
<i>Heuchera parishii</i>	Parish's alumroot	None	None	-	1B.3
<i>Maurandella antirrhiniflora</i>	violet twining snapdragon	None	None	-	2B.3
<i>Penstemon pseudospectabilis</i> ssp. <i>pseudospectabilis</i>	desert beardtongue	None	None	-	2B.2
<i>Selaginella asprella</i>	bluish spike-moss	None	None	-	4.3
<i>Selaginella leucobryoides</i>	Mojave spike-moss	None	None	-	4.3
<i>Castela emoryi</i>	Emory's crucifixion-thorn	None	None	-	2B.2
<i>Lycium parishii</i>	Parish's desert-thorn	None	None	-	2B.3
<i>Lycium torreyi</i>	Torrey's box-thorn	None	None	-	4.2
<i>Physalis lobata</i>	lobed ground-cherry	None	None	-	2B.3
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	None	None	-	2B.2
<i>Androstephium breviflorum</i>	small-flowered androstephium	None	None	-	2B.2
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	Threatened	Endangered	-	1B.1
<i>Muilla coronata</i>	crowned muilla	None	None	-	4.2
<i>Aloysia wrightii</i>	Wright's beebrush	None	None	-	4.3
<i>Viola pinetorum</i> var. <i>grisea</i>	grey-leaved violet	None	None	-	1B.3
<i>Kallstroemia parviflora</i>	warty caltrop	None	None	-	4.2

Notes: CDFW = California Department of Fish and Wildlife

¹ Status abbreviations: FP = fully protected; SSC = species of special concern; WL = watch list

² Rare plant rank:

- 1A: Presumed extirpated in California and either rare or extinct elsewhere
- 1B: Rare, threatened, or endangered in California and elsewhere
- 2A: Presumed extirpated in California, but common elsewhere
- 2B: Rare, threatened, or endangered in California, but more common elsewhere
- 3: More information is needed (review list)
- 4: Limited distribution (watch list)

Threat rank:

- .1: Seriously threatened in California
- .2: Moderately threatened in California
- .3: Not very threatened in California

Appendix E

California Register Eligibility of PCCP Segments of Program Pipelines

California Register Eligibility of PCCP Segments of Program Pipelines

None of the PCCP portions of the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, or Sepulveda Feeder appear to be eligible for listing on the California Register of Historical Resources (CRHR). Consequently, none of these water conveyance resources appear to qualify as historical resources for the purposes of CEQA.

Water conveyance systems and features that clearly demonstrable historic significance are apt to be found eligible for CRHR listing under Criterion 1, for association with important events that have made a significant contribution to the broad patterns of our history, and/or Criterion 3, as resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master. When water conveyance systems or features represent the work of a master, it typically means that a historically significant engineer or builder designed them and managed their construction. It is extremely rare for a historic-period water conveyance system or feature to be found eligible for listing under Criterion 2, for association with the lives of persons important to our past other than individuals who designed and/or built those systems or features. Individual features of a water conveyance system determined not to possess sufficient historical significance to qualify for individual CRHR listing can be found eligible for CRHR listing if they contribute to a larger historically significant system that qualifies for CRHR listing as a historic district.

It is sometimes argued that water conveyance systems have historical significance as a result of contributing to the growth of a city. However, the construction of new water facilities to increase or otherwise improve a city's water supply is too commonplace an event to meet the significance threshold under Criterion 1. All historic-period water conveyance systems constructed to supply water for a town or city were developed in anticipation of, or as a response to, growth. The construction of water conveyance systems and other infrastructure does not generally or necessarily cause growth. However, there are instances in which water infrastructure can reasonably qualify for CRHR listing under Criterion 1. Water facilities that historically made the settlement of a town or locality possible have the potential to meet the significance threshold under Criterion 1. For example, the Mill Creek Zanja, an irrigation ditch completed in 1819 and constructed through today's Redlands and Mentone by Native American laborers, was listed on the National Register of Historic Places (NRHP) in 1977 with no significance criteria specified. As a resource listed on the NRHP, it was automatically listed on the CRHR as well. Known locally as "the Zanja," the resource was later determined to meet NRHP Criterion A/CRHR Criterion 1 and NRHP Criterion C/CRHR Criterion 3. The Zanja was constructed to provide irrigation water for agriculture at and around the Mission San Gabriel Assistencia. Under Criteria A/1, the resource is significant as the first irrigation ditch constructed in the San Bernardino Valley, where the Zanja and subsequent irrigation development provided the basis for both settlement and agricultural enterprise, the latter of which dominated the region's economy into the twentieth century (Van Boven 1976; California SHPO 2015).

Extensive inter-basin conveyance systems developed as major public works, according to long-term municipal, regional, or state plans, are also reasonable candidates for CRHR listing under Criterion 1. When determined eligible for listing under Criterion 1, such systems, or components of such systems, are also often determined eligible under Criterion 3, for association with historically

significant hydraulic engineers and/or for engineering or technological significance. Although portions of the original Los Angeles Aqueduct constructed between 1907 and 1913 have been found eligible for the NRHP and the CRHR, the entire resource has not been formally evaluated for listing on the NRHP or the CRHR. However, it has been designated a National Historic Civil Engineering Landmark, and has been recommended for designation as a National Historic Landmark. If designated as a National Historic Landmark, the Los Angeles Aqueduct would automatically be listed on the NRHP and the CRHR. The Los Angeles Aqueduct would likely meet NRHP Criterion A/CRHR Criterion 1 for the significance of its construction as a formative event in Southern California history, and NRHP Criterion C/CRHR Criterion 3, as the work of master engineer William Mulholland, and as the world's largest aqueduct for urban water supply at the time of its completion.

The five subject feeders and pipelines are not components of the seminal inter-basin systems constructed over great distances to transport Sierra Nevada or Colorado River water to the emerging San Francisco Bay Area and greater Los Angeles-era metropolises during the first half of the twentieth century. Those systems include the Los Angeles Department of Water and Power's Los Angeles Aqueduct (1913), East Bay Municipal Utility District's Mokelumne River Aqueducts (1929), San Francisco Public Utilities Commission's Hetch Hetchy Project (1934), and Metropolitan's Colorado River Aqueduct (1941). Although the five subject feeders and pipelines were developed to distribute increased water supplies to Metropolitan's Southern California distribution system from the State Water Project (SWP) (1973), they were not constructed as part of the SWP's California Aqueduct. Instead, they were built as additions to Metropolitan's pre-existing urban distribution network in Southern California. That system began distributing water from the Colorado River Aqueduct in the early 1940s. The first four of the five subject feeders and pipelines (Second Lower Feeder, Sepulveda Feeder, Rialto Pipeline, and Calabasas Feeder) were constructed incrementally over the period from 1966–1975, and the Allen-McColloch Pipeline was completed 5 years later. The event or events of their construction represent the kind of commonplace expansion of urban water-distribution networks that occurred with new supply and population growth in numerous American cities during the second half of the twentieth century, particularly cities in the arid West. In none of the five cases does the singular event of constructing one of the five subject feeders and pipelines appear to meet the threshold of significance necessary for CRHR listing under Criterion 1. The incremental expansion of the Metropolitan distribution system to accommodate new SWP water supply does not appear to represent a historically significant pattern of events qualifying any of these resources for CRHR listing under Criterion 1 individually or as part of a historic district.

The first of the five subject resources to be built, the Second Lower Feeder, and the four subsequently completed feeders and pipelines included in the proposed PCCP Rehabilitation Program do not appear to have technological or engineering significance. The five subject resources were constructed too late to have associations with the master engineers—Mulholland and others—who designed the first systems to convey water in open-air aqueducts, tunnels, siphons, and pipelines across great distances during the first half the twentieth century. Research has yielded no evidence that the five pipelines are associated with historically significant hydraulic engineers. None of the five subject resources appear to be the product of major technological innovation in the arena of hydraulic engineering. When construction work began on the Second Lower Feeder in 1966, the technology of PCCP was over 20 years old. As stated above, in 1961 AWWA estimated that 3,030 miles of PCCP had been installed in the United States for water conveyance purposes. PCCP was subject to modest design variation as its use evolved over time, including the 1964, 1972, and 1979 revisions to the AWWA standards (PCCPC301) discussed above. However, PCCP had become a commonplace water-conveyance technology before those revisions, which provided for limited

modification (mostly upper and lower size limits) of well-established design elements constituting PCCP and differentiation from other types of water-conveyance pipe. Additionally, as a distribution system feeder constructed from 1966 to 1970, the pipelines are not considered eligible under CRHR criteria because they do not meet the special consideration for historical resources achieving significance within the past 50 years (14 CCR Section 4852(d)(2)). For these reasons, none of the five subject resources included in the proposed PCCP Rehabilitation Program appear to meet the significance threshold for CRHR listing under Criterion 3.

References

- California Office of Historic Preservation (SHPO). 2015. California Historical Resources Inventory (MS Access Database). On file at ICF International.
- Van Boven, Alice. 1976. Mill Creek Zanja National Register Nomination Form (No. 77000329). Available: <http://pdfhost.focus.nps.gov/docs/nrhp/text/77000329.PDF>. Accessed April 20, 2015.

Appendix F

Greenhouse Gas Calculations

Program Buildout Assumptions for Greenhouse Gases Analysis

Anticipated Service Life of
Relined PCCP and Program
Components

30 years

SCAQMD Guidance, 2008: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2)

Typical Excavation SiteLength of PCCP Segments

AMP	9 miles
Calabasas Feeder	9 miles
Rialto Pipeline	16 miles
Second Lower Feeder	30 miles
Sepulveda Feeder	37 miles

3

Average number of
excavation sites per mile of
PCCP

27
27
48
90
111
303

Total Excavation Sites

Typical New Valve/Meter Vault Structure

Assumption: 1 new valve/meter vault structure per 5 miles of PCCP

Total PCCP Length 101 miles

Total Excavation Sites

20

Typical Below Grade AV/VV Relocation

1,000-foot segment assumed

The Second Lower Feeder has 34 below-grade AR/VV over its 30-mile length of PCCP.

Assumption: 1 AV/VV relocation per mile

101 miles

Total Sites

101

Pipeline Replacement/Parallel Piping

Assumption: 1,000 feet of pipeline replacement per 10 miles of PCCP

101 miles

Total Sites

10

GHG EMISSIONS

GHG EMISSIONS	Daily Emissions (lbs)							Program Component Total (MT)	Assumed Program Buildout (MT)
	Days	CO2	CH4	N2O	On-Road				
					Off-Road				
	Days	CO2	CH4	N2O	Idle CO2E	Run CO2E	Sub-Phase Total (lbs)		
1.0 Typical Excavation Site									
1.1 Mobilize and Site Setup	5	1,538	12	12	14	249	9,127		
1.2 Excavation, Shoring, Dewatering	20	4,715	24	36	29	636	108,796		
1.3 Pipe Removal/Pipe Relining	80	9,305	25	71	21	298	777,521		
1.4 Backfill and Asphalt Replacement	15	1,377	10	11	36	780	33,217		
1.5 Site Restoration and Clean Up	5	208	2	2	11	152	1,871	422	127,891
2.0 Typical New Valve/Meter Vault Structure									
2.1 Mobilize and Site Setup	5	1,107	9	8	14	249	6,940		
2.2 Excavation, Shoring, Dewatering	20	4,284	20	33	36	777	103,009		
2.3 Construct New Valve Structure	30	9,863	24	75	14	249	306,786		
2.4 Install New Equipment	25	8,774	23	67	21	298	229,571		
2.5 Backfill and Asphalt Replacement	15	1,645	12	13	15	261	29,190		
2.6 Demolition of Old Vault Structure, Backfill and Asphalt Replacement	20	10,132	30	77	36	768	220,872		
2.7 Site Restoration and Clean Up	5	208	2	2	11	152	1,871	407	8,149
3.0 Typical Below Grade AV/VV Relocation									
3.1 Mobilize and Site Setup	1	-	-	-	10	149	159		
3.2 Remove Existing AV and Appurtenances	1	1,055	8	8	7	107	1,186		
3.3 Trench Excavation	2	11,172	19	85	11	253	23,083		
3.4 Install New AV and Equipment	1	1,075	7	8	7	107	1,205		
3.5 Backfill and Asphalt Replacement	1	2,321	10	18	19	398	2,765		
3.6 Site Restoration and Clean Up	1	-	-	-	8	128	135	13	1,307
4.0 Pipeline Replacement/Parallel Piping									
4.1 Mobilize and Site Setup	5	1,107	9	8	33	395	7,766		
4.2 Trench Excavation, Shoring	30	2,071	16	16	270	5,579	238,541		
4.3 Install Pipe	30	9,433	21	72	27	347	296,966		
4.4 Backfill and Asphalt Replacement	30	1,377	10	11	201	4,169	173,060		
4.5 Site Restoration and Clean Up	5	208	2	2	30	298	2,697	326	3,261
TOTAL PROGRAM BUILDOUT									140,609
Service Life									30
Amortized Emissions									4,687

Factors

Global Warming Potential

CO2 1

CH4 25

N2O 298

Source: Greenhouse Gas Protocols

(http://www.ghgprotocol.org/files/g

hgp/tools/Global-Warming-Potential-

Values.pdf)

lbs/MT 2204.62

Unmitigated GHG % Reduction

141,759 0.8%

Appendix G

Energy Use Calculations

MWD PCCP Program
Energy Calculations

A	B	C	D	E	F
			Unit/Factor	Formula	Source
3	TOTAL PROGRAM BUILDOUT	140,608.5	MT CO2		Source: Calculations by ICF 2016
4					
5		2,204.6	pounds/MT		Source: Conversion factor
6		22.4	pounds CO2/gallon diesel		Source: Oak Ridge National Laboratory. 2015. Transportation Energy Data Book. Edition 34. Table 11.12.
7		13,838,767	gallons diesel	C3*C5/C6	

Appendix H

Notices of Availability/Notices of Completion



**THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
700 NORTH ALAMEDA STREET
LOS ANGELES, CALIFORNIA 90012**

NOTICE OF AVAILABILITY

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE Prestressed Concrete Cylinder Pipe Rehabilitation Program

Pursuant to the California Environmental Quality Act (CEQA), The Metropolitan Water District of Southern California (Metropolitan), as Lead Agency, prepared a Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed Program). This Notice of Availability is to inform you that the Draft PEIR is being released for a 45-day public review period. The Draft PEIR is also being sent to responsible, trustee, and interested agencies as part of the review process required under CEQA (Section 21092 of the Public Resources Code) and the State CEQA Guidelines (Section 15087 of the California Code of Regulations).

PROGRAM DESCRIPTION: Metropolitan Water District proposes to rehabilitate portions of five existing subsurface water delivery pipelines within its service area. Approximately 100 miles of prestressed concrete cylinder pipe (PCCP) with diameters varying from 54 to 201 inches would be rehabilitated either by relining the existing pipe with steel or replacing existing pipe with new welded steel pipe. These five existing pipelines (also known as feeders) are: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder.

LOCATION: The five pipelines that would be rehabilitated extend primarily in existing public roads and on Metropolitan-owned rights-of-way in the following cities and counties:

Allen-McColloch Pipeline

- | | | |
|-----------------|----------|---------------|
| • Anaheim | • Irvine | • Lake Forest |
| • Mission Viejo | • Orange | • Tustin |
| • Yorba Linda | | |

Calabasas Feeder

- | | | |
|-------------|----------------|---------------|
| • Calabasas | • Hidden Hills | • Los Angeles |
|-------------|----------------|---------------|

Rialto Pipeline

- | | | |
|--------------------|-----------|--|
| • Claremont | • Fontana | • La Verne |
| • Rancho Cucamonga | • Rialto | • San Bernardino |
| • San Dimas | • Upland | • Unincorporated San Bernardino County |

Second Lower Feeder

- | | | |
|---------------|-------------------------------------|--------------------------------|
| • Anaheim | • Buena Park | • Carson |
| • Cypress | • Lakewood | • Lomita |
| • Long Beach | • Los Alamitos | • Los Angeles |
| • Placentia | • Rolling Hills Estates | • Torrance |
| • Yorba Linda | • Unincorporated Los Angeles County | • Unincorporated Orange County |

Sepulveda Feeder

- | | | |
|---------------|---------------|-------------|
| • Culver City | • Gardena | • Hawthorne |
| • Inglewood | • Los Angeles | • Torrance |

DRAFT PEIR: The Draft PEIR describes the proposed Program, existing environmental conditions, significant impacts (e.g., air quality, greenhouse gas emissions), potential significant impacts (e.g., biological resources, noise, traffic), and proposed mitigation measures.

PUBLIC REVIEW PERIOD: Due to the time limits mandated by State law (Section 15087 of the CEQA Guidelines), written comments must be received by Metropolitan not later than 45 days after the start of the review period which **begins September 1, 2016 and ends on October 17, 2016**. Comments received by close of the public review period will be considered in the Final PEIR. All comments should be submitted in writing and include point of contact information.

Please send comments and responses to:

Hans Vandenberg
Program Management Unit
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, California 90054-0153
Phone: (213) 217-5683

Comments can also be submitted via e-mail to EPT@mwdh2o.com. Comments sent via e-mail should state "PCCP Rehabilitation Program Draft PEIR" in the subject line.

Copies of the Draft PEIR are available for public review at the following location:

The Metropolitan Water District of Southern California
Engineering Resource Center
700 North Alameda Street
Los Angeles, California 90012

Please contact Hans Vandenberg to make arrangements for viewing. Additionally, copies of the Draft PEIR are available for public review at the following locations:

Lomita Library
24200 Narbonne Avenue
Lomita, CA 90717

Carter Branch Library
2630 Linden Avenue
Rialto, CA 92377

El Toro Library
24672 Raymond Way
Lake Forest, CA 92630

San Fernando Library
217 N. Malay Avenue
San Fernando, CA 91340

Brea Library
1 Civic Center Circle
Brea, CA 92821

La Verne Library
3640 D Street
La Verne, CA 91750

Los Angeles Public Library –
Central Library Branch
630 W 5th St.
Los Angeles, CA 90071

Or online at Metropolitan's website:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>





THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Mr. Scott Morgan, Director
Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Dear Mr. Morgan:

Notice of Availability of a Draft Program Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program

Enclosed please find one original Notice of Completion (NOC) for the Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe Rehabilitation Program. Also enclosed are 15 Executive Summaries and electronic copies on compact disc (CD) of the Draft PEIR for this project. The Metropolitan Water District of Southern California is acting as the Lead Agency pursuant to the California Environmental Quality Act (CEQA).

In accordance with Section 21161 and 21092 of the California Public Resources Code (PRC) and Sections 15085 and 15087 of the State CEQA Guidelines, this NOC is submitted to your office for a public review period of 45 days, ending on October 17, 2016. The Draft PEIR is available on Metropolitan's website at:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>

We appreciate your assistance on this matter. If you have any questions, please contact Mr. Hans Vandenberg at (213) 217-5683 or hvandenberg@mwdh2o.com or Tiffany White at (213) 217-6261.

Very truly yours,

A handwritten signature in blue ink, reading "Arleen A. Arita".

Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosures: Original Notice of Completion
Hardcopies of Executive Summary (15)
CDs containing the Draft PEIR (15)



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

October 18, 2016

Hans Vandenberg
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Subject: Prestressed Concrete Cylinder Pipe Rehabilitation Program
SCH#: 2014121055

Dear Hans Vandenberg:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on October 17, 2016, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

A handwritten signature in dark ink, appearing to read "Scott Morgan".

Scott Morgan
Director, State Clearinghouse

SCH# 2014121055
Project Title Prestressed Concrete Cylinder Pipe Rehabilitation Program
Lead Agency Metropolitan Water District of Southern California

Type EIR Draft EIR
Description Metropolitan Water District proposes to rehabilitate portions of five existing subsurface water delivery pipelines within its service area. Approximately 100 miles of prestressed concrete cylinder pipe with diameters varying from 54 to 201 inches would be rehabilitated either by relining the existing pipe with steel or replacing existing pipe with new welded steel pipe. These five existing pipelines (also known as feeders) are: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder.

Lead Agency Contact

Name Hans Vandenberg
Agency Metropolitan Water District of Southern California
Phone (213) 217-5683 **Fax**
email
Address P.O. Box 54153
City Los Angeles **State** CA **Zip** 90054-0153

Project Location

County Los Angeles
City
Region
Lat / Long
Cross Streets multiple
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways 101, 405, 110, 710, et al.
Airports Van Nuys & Long Beach
Railways
Waterways LA River, San Gabriel River, et al.
Schools Multiple
Land Use Mostly within public ROW

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Department of Fish and Wildlife, Region 6; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, Division of Transportation Planning; State Water Resources Control Board, Division of Financial Assistance; Regional Water Quality Control Board, Region 8; Regional Water Quality Control Board, Region 4; Regional Water Quality Control Bd., Region 6 (Victorville); Native American Heritage Commission

Date Received 09/01/2016 **Start of Review** 09/01/2016 **End of Review** 10/17/2016

SCH#2014121055

SEP 01 2016

STATE CLEARINGHOUSE

1051



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

Mr. Hugh Nguyen
Orange County Clerk
12 Civic Center Plaza Room 101
Santa Ana, California 92701

Dear Mr. Nguyen:

Notice of Availability of a Draft Program Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program

Enclosed please find two originals of the Notice of Availability (Notice) for the Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe Rehabilitation Program. The Metropolitan Water District of Southern California is acting as the Lead Agency pursuant to the California Environmental Quality Act (CEQA).

In accordance with Section 21092 of the California Public Resources Code and Section 15087 of the State CEQA Guidelines, this Notice is provided for posting in your office for a public review period of 45 days, ending on October 17, 2016. We respectfully request that you post this Notice as soon as possible. Please stamp the originals of the Notice and return one of the copies to Metropolitan in the enclosed self-addressed postage paid envelope for our files. The Draft PEIR is also available on Metropolitan's website at:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>

We appreciate your assistance on this matter. If you have any questions, please contact Mr. Hans Vandenberg at (213) 217-5683 or hvandenberg@mwdh2o.com or Tiffany White at (213) 217-6261.

Very truly yours,

A handwritten signature in blue ink, reading "Arleen A. Arita".

Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosure: Notice of Availability (2)
Self-addressed stamped envelope



Hugh Nguyen
Orange County Clerk - Recorder
P.O. Box 238 Santa Ana, CA 92702
12 Civic Center Plaza, Room 106 Santa Ana, CA 92701
Phone: (714) 834-2500
www.ocrecorder.com

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
700 NORTH ALAMEDA STREET
LOS ANGELES, CA 90012

Office of the Orange County Clerk-Recorder
Memorandum

SUBJECT: PUBLIC NOTICE

The attached notice was received, filed and a copy was posted on 09/02/2016

It remained posted for 30 (thirty) days.

Hugh Nguyen
Clerk - Recorder
In and for the County of Orange

By: Trejo, Ernesto Deputy

Public Resource Code 21092.3

The notice required pursuant to Sections 21080.4 and 21092 for an environmental impact report shall be posted in the office of the County Clerk of each county *** in which the project will be located and shall remain posted for a period of 30 days. The notice required pursuant to Section 21092 for a negative declaration shall be so posted for a period of 20 days, unless otherwise required by law to be posted for 30 days. The County Clerk shall post notices within 24 hours of receipt.

Public Resource Code 21152

All notices filed pursuant to this section shall be available for public inspection, and shall be posted ***** within 24 hours of receipt** in the office of the County Clerk. Each notice shall remain posted for a period of 30 days.

*** Thereafter, the clerk shall return the notice to the local lead agency *** within a notation of the period it was posted. The local lead agency shall retain the notice for not less than nine months.

Additions or changes by underline; deletions by ***



**THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
700 NORTH ALAMEDA STREET
LOS ANGELES, CALIFORNIA 90012**

NOTICE OF AVAILABILITY

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE Prestressed Concrete Cylinder Pipe Rehabilitation Program

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PROGRAM DESCRIPTION: Metropolitan Water District proposes to rehabilitate portions of five existing subsurface water delivery pipelines within its service area. Approximately 100 miles of prestressed concrete cylinder pipe (PCCP) with diameters varying from 54 to 201 inches would be rehabilitated either by relining the existing pipe with steel or replacing existing pipe with new welded steel pipe. These five existing pipelines (also known as feeders) are: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder.

LOCATION: The five pipelines that would be rehabilitated extend primarily in existing public roads and on Metropolitan-owned rights-of-way in the following cities and counties:

Allen-McColloch Pipeline

- Anaheim
- Mission Viejo
- Yorba Linda
- Irvine
- Orange

Calabasas Feeder

- Calabasas
- Hidden Hills

Rialto Pipeline

- Claremont
- Rancho Cucamonga
- San Dimas
- Fontana
- Rialto
- Upland

Second Lower Feeder

- Anaheim
- Cypress
- Long Beach
- Placentia
- Yorba Linda
- Buena Park
- Lakewood
- Los Alamitos
- Rolling Hills Estates
- Unincorporated Los Angeles County

Sepulveda Feeder

- Culver City
- Inglewood
- Gardena
- Los Angeles

- Lake Forest
- Tustin

POSTED

SEP 02 2016

ORANGE COUNTY CLERK-RECORDER DEPARTMENT

BY:  DEPUTY

- Los Angeles
- La Verne
- San Bernardino
- Unincorporated San Bernardino County

- Carson
- Lomita
- Los Angeles
- Torrance
- Unincorporated Orange County

DRAFT PEIR: The Draft PEIR describes the proposed Program, existing environmental conditions, significant impacts (e.g., air quality, greenhouse gas emissions), potential significant impacts (e.g., biological resources, noise, traffic), and proposed mitigation measures.

PUBLIC REVIEW PERIOD: Due to the time limits mandated by State law (Section 15087 of the CEQA Guidelines), written comments must be received by Metropolitan not later than 45 days after the start of the review period which begins September 1, 2016 and ends on October 17, 2016. Comments received by close of the public review period will be considered in the Final PEIR. All comments should be submitted in writing and include point of contact information.

Please send comments and responses to:

Hans Vandenberg
Program Management Unit
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, California 90054-0153
Phone: (213) 217-5683

Comments can also be submitted via e-mail to EPT@mwdh2o.com. Comments sent via e-mail should state "PCCP Rehabilitation Program Draft PEIR" in the subject line.

Copies of the Draft PEIR are available for public review at the following location:

The Metropolitan Water District of Southern California
Engineering Resource Center
700 North Alameda Street
Los Angeles, California 90012

POSTED

SEP 02 2016

ORANGE COUNTY CLERK-RECORDER DEPARTMENT

BY: DEPUTY

Please contact Hans Vandenberg to make arrangements for viewing. Additionally, copies of the Draft PEIR are available for public review at the following locations:

Lomita Library
24200 Narbonne Avenue
Lomita, CA 90717

Carter Branch Library
2630 Linden Avenue
Rialto, CA 92377

El Toro Library
24672 Raymond Way
Lake Forest, CA 92630

San Fernando Library
217 N. Malay Avenue
San Fernando, CA 91340

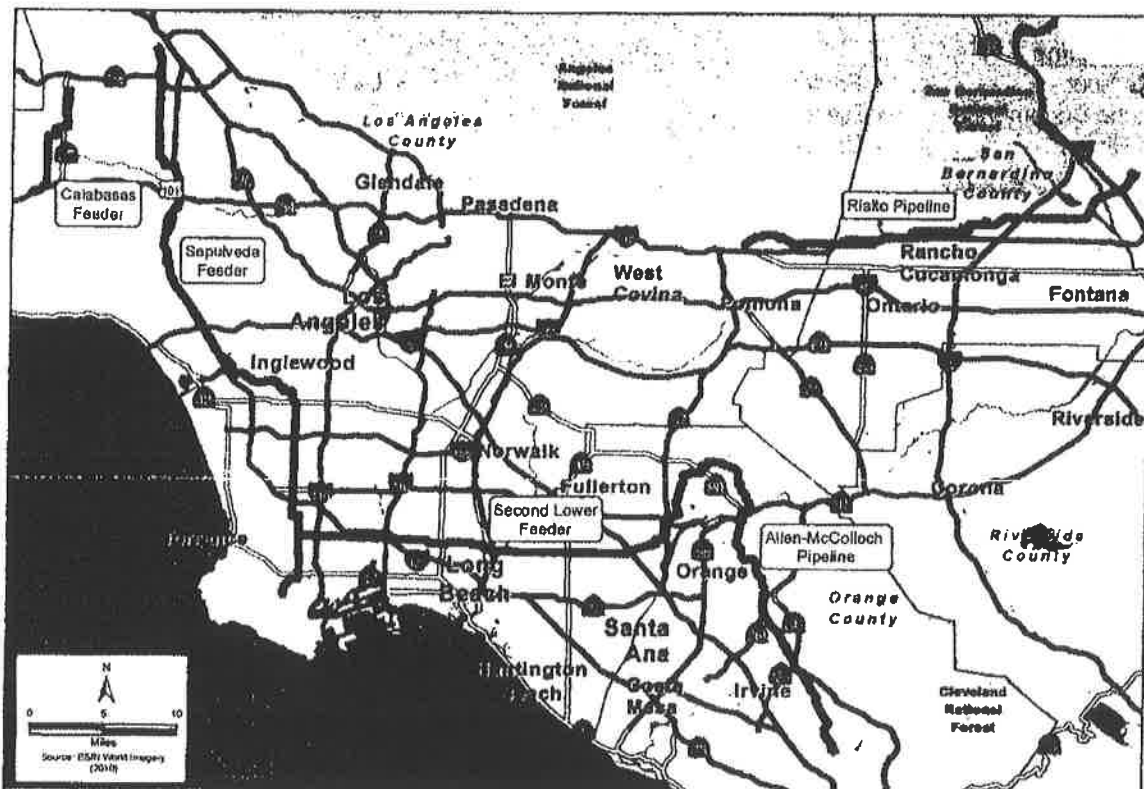
Brea Library
1 Civic Center Circle
Brea, CA 92821

La Verne Library
3640 D Street
La Verne, CA 91750

Los Angeles Public Library --
Central Library Branch
630 W 5th St.
Los Angeles, CA 90071

Or online at Metropolitan's website:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>





THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 7, 2016

Via Federal Express

Ms. Laura Welch
Clerk of the Board
San Bernardino County
385 N. Arrowhead Avenue, 2nd Floor
San Bernardino, California 92415-0130

Dear Ms. Welch:

Notice of Availability of a Draft Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program

Enclosed please find two originals of the Notice of Availability (Notice) for the Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe Rehabilitation Program. The Metropolitan Water District of Southern California is acting as the Lead Agency pursuant to the California Environmental Quality Act (CEQA).

In accordance with Section 21092 of the California Public Resources Code and Section 15087 of the State CEQA Guidelines, this Notice is provided for posting in your office for a public review period of 45 days, ending on October 17, 2016. Please stamp the originals of the Notice and return one of the copies to Metropolitan in the enclosed self-addressed postage paid envelope for our files. The Draft PEIR is also available on Metropolitan's website at:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>

We appreciate your assistance on this matter. If you have any questions, please contact Mr. Hans Vandenberg at (213) 217-5683 or hvandenberg@mwdh2o.com or Tiffany White at (213) 217-6261.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Arleen A. Arita".

Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosure: Notice of Availability (2)
Self-addressed stamped envelope



NOTICE OF AVAILABILITY

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- | | | |
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| • Mission Viejo | • Orange | • Tustin |
| • Yorba Linda | | |

Calabasas Feeder

- | | | |
|-------------|----------------|---------------|
| • Calabasas | • Hidden Hills | • Los Angeles |
|-------------|----------------|---------------|

Rialto Pipeline

- | | | |
|--------------------|-----------|--|
| • Claremont | • Fontana | • La Verne |
| • Rancho Cucamonga | • Rialto | • San Bernardino |
| • San Dimas | • Upland | • Unincorporated San Bernardino County |

Second Lower Feeder

- | | | |
|---------------|-------------------------------------|--------------------------------|
| • Anaheim | • Buena Park | • Carson |
| • Cypress | • Lakewood | • Lomita |
| • Long Beach | • Los Alamitos | • Los Angeles |
| • Placentia | • Rolling Hills Estates | • Torrance |
| • Yorba Linda | • Unincorporated Los Angeles County | • Unincorporated Orange County |

Sepulveda Feeder

- | | | |
|---------------|---------------|-------------|
| • Culver City | • Gardena | • Hawthorne |
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Hans Vandenberg
Program Management Unit
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, California 90054-0153
Phone: (213) 217-5683

Comments can also be submitted via e-mail to EPT@mwdh2o.com. Comments sent via e-mail should state "PCCP Rehabilitation Program Draft PEIR" in the subject line.

Copies of the Draft PEIR are available for public review at the following location:

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Engineering Resource Center
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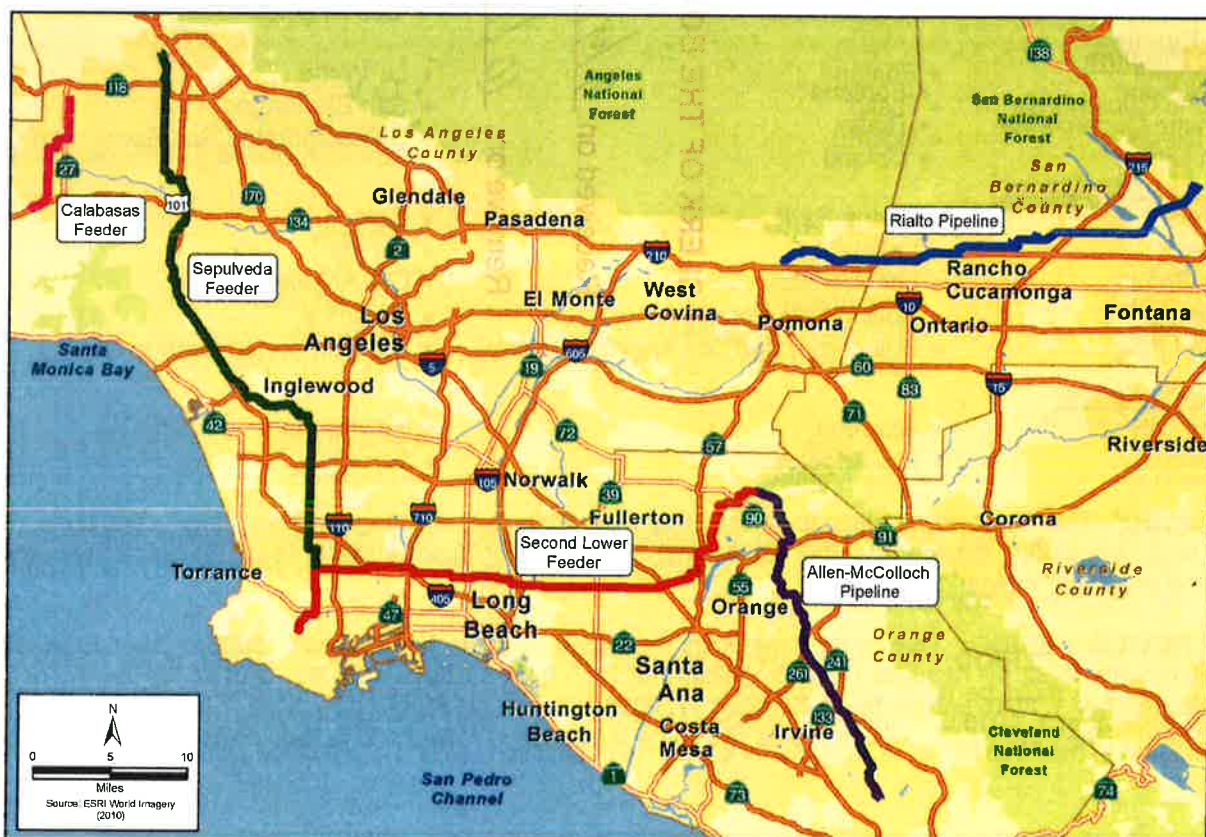
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Or online at Metropolitan's website:

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THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

Los Angeles County Clerk/Recorder
12400 E. Imperial Highway, Room 2001
Norwalk, California 90650

Attn: County Clerk/Recorder

Notice of Availability of a Draft Program Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program

Enclosed please find two originals of the Notice of Availability (Notice) for the Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe Rehabilitation Program. The Metropolitan Water District of Southern California is acting as the Lead Agency pursuant to the California Environmental Quality Act (CEQA).

In accordance with Section 21092 of the California Public Resources Code and Section 15087 of the State CEQA Guidelines, this Notice is provided for posting in your office for a public review period of 45 days, ending on October 17, 2016. We respectfully request that you post this Notice as soon as possible. Please stamp the originals of the Notice and return one of the copies to Metropolitan in the enclosed self-addressed postage paid envelope for our files. A check in the amount of \$75.00 is also enclosed to cover administrative fees. The Draft PEIR is also available on Metropolitan's website at:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>

We appreciate your assistance on this matter. If you have any questions, please contact Mr. Hans Vandenberg at (213) 217-5683 or hvandenberg@mwdh2o.com or Tiffany White at (213) 217-6261.

Very truly yours,

A handwritten signature in blue ink that reads "Arleen A. Arita".

Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosure: Notice of Availability (2)
Self-addressed stamped envelope
Filing Fee

700 NORTH ALAMEDA STREET
LOS ANGELES, CALIFORNIA 90012**NOTICE OF AVAILABILITY****DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE
Prestressed Concrete Cylinder Pipe Rehabilitation Program**

Pursuant to the California Environmental Quality Act (CEQA), The Metropolitan Water District of Southern California (Metropolitan), as Lead Agency, prepared a Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed Program). This Notice of Availability is to inform you that the Draft PEIR is being released for a 45-day public review period. The Draft PEIR is also being sent to responsible, trustee, and interested agencies as part of the review process required under CEQA (Section 21092 of the Public Resources Code) and the State CEQA Guidelines (Section 15087 of the California Code of Regulations).

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- | | | |
|-----------------|----------|---------------|
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| • Mission Viejo | • Orange | • Tustin |
| • Yorba Linda | | |

ORIGINAL FILED**SEP 02 2016****LOS ANGELES, COUNTY CLERK****Calabasas Feeder**

- | | | |
|-------------|----------------|---------------|
| • Calabasas | • Hidden Hills | • Los Angeles |
|-------------|----------------|---------------|

Rialto Pipeline

- | | | |
|--------------------|-----------|--|
| • Claremont | • Fontana | • La Verne |
| • Rancho Cucamonga | • Rialto | • San Bernardino |
| • San Dimas | • Upland | • Unincorporated San Bernardino County |

Second Lower Feeder

- | | | |
|---------------|-------------------------------------|--------------------------------|
| • Anaheim | • Buena Park | • Carson |
| • Cypress | • Lakewood | • Lomita |
| • Long Beach | • Los Alamitos | • Los Angeles |
| • Placentia | • Rolling Hills Estates | • Torrance |
| • Yorba Linda | • Unincorporated Los Angeles County | • Unincorporated Orange County |

Sepulveda Feeder

- | | | |
|---------------|---------------|-------------|
| • Culver City | • Gardena | • Hawthorne |
| • Inglewood | • Los Angeles | • Torrance |

DRAFT PEIR: The Draft PEIR describes the proposed Program, existing environmental conditions, significant impacts (e.g., air quality, greenhouse gas emissions), potential significant impacts (e.g., biological resources, noise, traffic), and proposed mitigation measures.

PUBLIC REVIEW PERIOD: Due to the time limits mandated by State law (Section 15087 of the CEQA Guidelines), written comments must be received by Metropolitan not later than 45 days after the start of the review period which **begins September 1, 2016 and ends on October 17, 2016**. Comments received by close of the public review period will be considered in the Final PEIR. All comments should be submitted in writing and include point of contact information.

Please send comments and responses to:

Hans Vandenberg
Program Management Unit
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, California 90054-0153
Phone: (213) 217-5683

Comments can also be submitted via e-mail to EPT@mwdh2o.com. Comments sent via e-mail should state "PCCP Rehabilitation Program Draft PEIR" in the subject line.

Copies of the Draft PEIR are available for public review at the following location:

The Metropolitan Water District of Southern California
Engineering Resource Center
700 North Alameda Street
Los Angeles, California 90012

Please contact Hans Vandenberg to make arrangements for viewing. Additionally, copies of the Draft PEIR are available for public review at the following locations:

Lomita Library
24200 Narbonne Avenue
Lomita, CA 90717

Carter Branch Library
2630 Linden Avenue
Rialto, CA 92377

Ei Toro Library
24672 Raymond Way
Lake Forest, CA 92630

San Fernando Library
217 N. Malay Avenue
San Fernando, CA 91340

Brea Library
1 Civic Center Circle
Brea, CA 92821

La Verne Library
3640 D Street
La Verne, CA 91750

Los Angeles Public Library –
Central Library Branch
630 W 5th St.
Los Angeles, CA 90071

Or online at Metropolitan's website:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>





THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

Date: September 1, 2016

To: Distribution List

From: Arleen A. Arita, PCCP Rehabilitation Program Manager *Arita*

Subject: Notice of Availability of a Draft Program Environmental Impact Report for the Prestressed Concrete Cylinder Pipe Rehabilitation Program

The Metropolitan Water District of Southern California, acting as Lead Agency under the California Environmental Quality Act (CEQA), has prepared a Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe Rehabilitation Program (SCH #2014121055). Enclosed is a Notice of Availability of the Draft PEIR, which provides a brief description of the project and information on the public review period for this Program, and where the Draft PEIR can be found. Please note the 45-day review and comment period will end on October 17, 2016.

If you have any questions, please contact Mr. Hans Vandenberg by email or mail at:

The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153
EPT@mwdh2o.com

Please reference the Prestressed Concrete Cylinder Pipe Rehabilitation Program in the subject line and include your name, address, email address and/or a contact phone number.

CA Division Of Occupational Safety And Health, Tunnel Safety Order Compliance

California Air Resources Board

Caltrans, District 12

City of Anaheim, Department of Public Works

City of Buena Park, Department of Public Works

City of Calabasas, Department of Public Works

City of Carson, Department of Public Works

City of Claremont, Department of Public Works

City of Culver City, Department of Public Works

City of Cypress, Department of Public Works

City of Fontana, Department of Public Works

City of Gardena, Department of Public Works

City of Hawthorne, Department of Public Works

City of Hidden Hills, Department of Public Works

City of Inglewood, Department of Public Works

City of Irvine, Department of Public Works

City of La Verne, Department of Public Works

City of Lake Forest, Department of Public Works

City of Lakewood, Department of Public Works

City of Lomita, Department of Public Works

City of Long Beach, Department of Public Works

City of Los Alamitos, Department of Public Works

City of Los Angeles, Department of Public Works

City of Mission Viejo, Department of Public Works

City of Orange, Department of Public Works

City of Placentia, Department of Public Works

City of Rancho Cucamonga, Department of Public Works

City of Rialto, Department of Public Works

City of Rolling Hills Estates, Department of Public Works

City of San Bernardino, Department of Public Works

City of San Dimas, Department of Public Works

City of Torrance, Department of Public Works

City of Tustin, Department of Public Works

City of Upland, Department of Public Works

City of Yorba Linda, Department of Public Works

County of Los Angeles, Department of Public Works

County of Orange, Department of Public Works

Long Beach Airport, Airport Advisory Commission

Regional Water Quality Control Board, Los Angeles Region

Santa Ana Regional Water Quality Control Board

South Coast AQMD

Torrance Airport, Airport Advisory Commission



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

Brea Library
1 Civic Center Circle
Brea, CA 92821

To Whom It May Concern:

Draft Program Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program (SCH # 2014121055)

Enclosed is a hardcopy with a CD containing the Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe Rehabilitation Program. Also enclosed is a copy of the Notice of Availability (Notice) for this Project. The Metropolitan Water District of Southern California is providing the Draft PEIR for public review pursuant to the Public Resources Code §21092 and the California Environmental Quality Act (CEQA) Guidelines §15087.

Please make the enclosed Draft PEIR available to your patrons for review within the library premises until October 17, 2016. We also kindly request that these materials only be reviewed by the public in the library and not be available for check-out. After October 17, 2016, the Draft PEIR may be discarded. Your assistance in this matter is appreciated.

If you have any questions, please contact Mr. Hans Vandenberg at (213) 217-5683 or hvandenberg@mwdh2o.com or Tiffany White at (213) 217-6261.

Very truly yours

A handwritten signature in blue ink, appearing to read "Arleen A. Arita".

Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosures: (1) Hardcopy and CD of the Draft PEIR
(1) Copy of the Notice



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

Carter Branch Library
2630 Linden Avenue
Rialto, CA 92377

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PCCP Rehabilitation Program Manager

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THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

El Toro Library
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Lake Forest, CA 92630

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THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

La Verne Library
3640 D Street
La Verne, CA 91750

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PCCP Rehabilitation Program Manager

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THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

Lomita Library
24200 Narbonne Avenue
Lomita, CA 90717

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PCCP Rehabilitation Program Manager

HV/trw

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THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

Los Angeles Public Library – Central Library Branch
630 W 5th St.
Los Angeles, CA 90071

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Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosures: (1) Hardcopy and CD of the Draft PEIR
(1) Copy of the Notice



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 1, 2016

Via Federal Express

San Fernando Library
217 N. Malay Avenue
San Fernando, CA 91340

To Whom It May Concern:

Draft Program Environmental Impact Report for the
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Very truly yours

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Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosures: (1) Hardcopy and CD of the Draft PEIR
(1) Copy of the Notice



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

August 29, 2016

Transmitted Via E-mail

Beatriz Cueva
California Newspaper Service Bureau, Inc.
915 East First Street
Los Angeles, California 90012

Dear Ms. Cueva:

Notice of Availability of a Draft Program Environmental Impact Report for the
Prestressed Concrete Cylinder Pipe Rehabilitation Program

Please provide advertising for the enclosed Notice of Availability (NOA) of a Draft Program Environmental Impact Report by The Metropolitan Water District of Southern California. We request that the Notice appear in the "Public Notices" section of The Los Angeles Daily Journal, The Yorba Linda Star, and the Orange County Register on September 1, 2016.

We request affidavits of publication at the earliest possible date. Please submit the invoice and affidavits to Mr. Hans Vandenberg, P.O. Box 54153, Los Angeles, CA 90054. Any questions should be directed to Mr. Hans Vandenberg at (213) 217-5683 or hvandenberg@mwdh2o.com, or Tiffany White at (213) 217-6261.

Very truly yours,

A handwritten signature in blue ink that reads "Arleen A. Arita".

Arleen A. Arita
PCCP Rehabilitation Program Manager

HV/trw

Enclosure: Notice of Availability

(When required)

RECORDING REQUESTED BY AND MAIL TO:

LOS ANGELES DAILY JOURNAL

~ SINCE 1888 ~

915 E FIRST ST, LOS ANGELES, CA 90012
 Mailing Address: P.O. Box 54026, Los Angeles, California 90054-0026
 Telephone (213) 229-5300 / Fax (213) 229-5481

TIFFANY WHITE
 METRO WATER DIST/ENVIRONMENTAL PLANNING
 PO BOX 54153
 LOS ANGELES, CA - 90054

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
 County of Los Angeles) ss

Notice Type: GPN - GOVT PUBLIC NOTICE

Ad Description:

NOTICE OF AVAILABILITY (SCH#2014121055)

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the LOS ANGELES DAILY JOURNAL, a newspaper published in the English language in the city of LOS ANGELES, county of LOS ANGELES, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of LOS ANGELES, State of California, under date 04/26/1954, Case No. 599,382. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

09/01/2016

Executed on: 09/01/2016
 At Los Angeles, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.



Signature



* A 0 0 0 0 0 4 2 0 8 3 6 2 *

This space for filing stamp only

DJ #: 2920873

**Notice of Availability of a Draft
 Program Environmental Impact Report
 for the Prestressed Concrete Cylinder
 Pipe Rehabilitation Program (SCH #
 2014121055)**

Pursuant to the California Environmental Quality Act (CEQA), The Metropolitan Water District of Southern California (Metropolitan), as Lead Agency, has prepared a Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed Program). The proposed Program would involve rehabilitating five existing pipelines.

PROGRAM LOCATION: The five pipelines that would be rehabilitated extend primarily within existing public roads and on Metropolitan-owned rights-of-way in the listed cities and counties: 1) Allen-McColloch Pipeline (Anaheim, Irvine, Lake Forest, Mission Viejo, Orange, Tustin, Yorba Linda); 2) Calabasas Feeder (Calabasas, Hidden Hills, Los Angeles); 3) Rialto Pipeline (Claremont, Fontana, La Verne, Rancho Cucamonga, Rialto, San Bernardino, unincorporated San Bernardino County, San Dimas, Upland); 4) Second Lower Feeder (Anaheim, Buena Park, Carson, Cypress, Lakewood, Lomita, Long Beach, Los Alamitos, Los Angeles, Placentia, Rolling Hills Estates, Torrance, Yorba Linda, unincorporated Los Angeles County, unincorporated Orange County); 5) Sepulveda Feeder (Culver City, Gardena, Hawthorne, Inglewood, Los Angeles, Torrance).

PROGRAM DESCRIPTION: Metropolitan proposes to rehabilitate portions of five existing subsurface water delivery pipelines within its service area. Approximately 100 miles of prestressed concrete cylinder pipe (PCCP) with diameters ranging from 54 to 201 inches would be rehabilitated either by relining the existing pipe with steel liner or replacing existing pipe with new welded steel pipe. Relining the pipeline requires cutting an access portal into the existing pipeline, inserting the new liner into place, and welding together the new steel liner segments. New pipe replacement requires excavating an open trench, placing sand bedding, installing new welded steel pipe, and backfilling the trench.

This Notice of Availability is to inform you that the Draft PEIR is being released for a 45-day public review period. The Draft PEIR is also being sent to responsible, trustee, and interested agencies as part of the review process required under CEQA (Section 21092 of the Public Resources Code) and the State CEQA Guidelines (Section 15087).

This document is being made available for public review and comment during the period beginning September 2, 2016 and ending on October 17, 2016 (45-day public review period). All comments should be submitted in writing and include point-of-contact information. Comments received by close of the public review period will be considered in the Final

PEIR. Please send comments and responses to:

Mr. Hans Vandenberg
 The Metropolitan Water District of Southern California
 P.O. Box 54153
 Los Angeles, CA 90054-0153

The Draft PEIR describes the proposed Program, existing environmental conditions, significant impacts (e.g., air quality, greenhouse gas emissions), potential significant impacts (e.g., biological, noise, traffic), and proposed mitigation measures. Due to the time limits mandated by state law, written comments must be sent to Metropolitan during the public review period, which begins September 1, 2016 and ends October 17, 2016. Comments can also be submitted electronically to EPT@mwdh2o.com. Comments sent via e-mail should state Prestressed Concrete Cylinder Pipe Rehabilitation Program EIR in the subject line. Should you have any questions, please contact Mr. Salvador Vazquez at 213-217-6752 or by email svazquez@mwdh2o.com.

Copies of the Draft PEIR are available for public review at the following locations:

The Metropolitan Water District of Southern California
 Engineering Resource Center
 700 North Alameda Street
 Los Angeles, CA 90012
 Los Angeles Public Library – Central Library Branch
 630 W 5th St.
 Los Angeles, CA 90071
 Carter Branch Library
 2630 Linden Avenue
 Rialto, CA 92377
 Lomita Library
 24200 Narbonne Avenue
 Lomita, CA 90717
 Brea Library
 1 Civic Center Circle
 Brea, CA 92821
 El Toro Library
 24672 Raymond Way
 Lake Forest, CA 92630
 La Verne Library
 3640 D Street
 La Verne, CA 91750
 San Fernando Library
 217 N. Malay Avenue
 San Fernando, CA 91340
 Or online at Metropolitan's website:

<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>
 9/1/16

DJ-2920873#

**PROOF OF PUBLICATION
(2015.5 C.C.P.)**

**STATE OF ILLINOIS
County of Cook**

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the action for which the attached notice was published.

I am a principal clerk of the Los Angeles Times, which was adjudged a newspaper of general circulation on May 21, 1952, Cases 598599 for the City of Los Angeles, County of Los Angeles, and State of California. Attached to this Affidavit is a true and complete copy as was printed and published on the following date(s):

Sep 01, 2016

**I certify (or declare) under penalty of perjury
under the laws of the State of California that the foregoing is true and correct.**

Dated at Chicago, Illinois
on this 01 day of 09, 2016.



[signature]

435 N. Michigan Ave.
Chicago, IL 60611

Sold To:

**Metropolitan Water District of Southern California - CU00559113
PO Box 54153
Los Angeles, CA 90054-0153**

Bill To:

**Metropolitan Water District of Southern California - CU00559113
PO Box 54153
Los Angeles, CA 90054-0153**

Notice of Availability of a Draft Program Environmental Impact Report for the Prestressed Concrete Cylinder Pipe Rehabilitation Program (SCH # 2014121055)

Pursuant to the California Environmental Quality Act (CEQA), The Metropolitan Water District of Southern California (Metropolitan), as Lead Agency, has prepared a Draft Program Environmental Impact Report (Draft PEIR) for the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program (proposed Program). The proposed Program would involve rehabilitating five existing pipelines.

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Environmental Planning Team
P.O. Box 54153
Los Angeles, CA 90054-0153

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Brea Library
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Brea, CA 92821

La Verne Library
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La Verne, CA 91750

Los Angeles Public Library – Central Library Branch
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Los Angeles, CA 90071

Lomita Library
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Lomita, CA 90717

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Lake Forest, CA 92630

San Fernando Library
217 N. Malay Avenue
San Fernando, CA 91340

Or online at Metropolitan's website:
<http://mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Environmental%20Quality%20Act.aspx>



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

October 18, 2016

Hans Vandenberg
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Subject: Prestressed Concrete Cylinder Pipe Rehabilitation Program
SCH#: 2014121055

Dear Hans Vandenberg:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on October 17, 2016, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

A handwritten signature in dark ink, appearing to read "Scott Morgan".

Scott Morgan
Director, State Clearinghouse

SCH# 2014121055
Project Title Prestressed Concrete Cylinder Pipe Rehabilitation Program
Lead Agency Metropolitan Water District of Southern California

Type EIR Draft EIR
Description Metropolitan Water District proposes to rehabilitate portions of five existing subsurface water delivery pipelines within its service area. Approximately 100 miles of prestressed concrete cylinder pipe with diameters varying from 54 to 201 inches would be rehabilitated either by relining the existing pipe with steel or replacing existing pipe with new welded steel pipe. These five existing pipelines (also known as feeders) are: Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, Second Lower Feeder, and Sepulveda Feeder.

Lead Agency Contact

Name Hans Vandenberg
Agency Metropolitan Water District of Southern California
Phone (213) 217-5683 **Fax**
email
Address P.O. Box 54153
City Los Angeles **State** CA **Zip** 90054-0153

Project Location

County Los Angeles
City
Region
Lat / Long
Cross Streets multiple
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways 101, 405, 110, 710, et al.
Airports Van Nuys & Long Beach
Railways
Waterways LA River, San Gabriel River, et al.
Schools Multiple
Land Use Mostly within public ROW

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Department of Fish and Wildlife, Region 6; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, Division of Transportation Planning; State Water Resources Control Board, Division of Financial Assistance; Regional Water Quality Control Board, Region 8; Regional Water Quality Control Board, Region 4; Regional Water Quality Control Bd., Region 6 (Victorville); Native American Heritage Commission

Date Received 09/01/2016 **Start of Review** 09/01/2016 **End of Review** 10/17/2016

FINAL



Programmatic Environmental Impact Report for the

Prestressed Concrete Cylinder Pipe Rehabilitation Program

SCH No. 2014121055

Volume 2: Findings of Fact, Mitigation Monitoring and Reporting Program, and Statement of Overriding Considerations



DECEMBER 2016



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

Metropolitan Report No. 1527

PRESTRESSED CONCRETE CYLINDER PIPE REHABILITATION PROGRAM FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

VOLUME 2: FINDINGS OF FACT, MITIGATION MONITORING AND REPORTING PROGRAM, AND STATEMENT OF OVERRIDING CONSIDERATIONS

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December 2016

ICF International. 2016. Prestressed Concrete Cylinder Pipe Rehabilitation Program Final Programmatic Environmental Impact Report. December. (ICF 52.14.) Irvine, CA. Prepared for Metropolitan Water District of Southern California, Los Angeles, California.

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Chapter 1

Findings of Fact in Support of the Proposed Program

1.1 Findings on Significant Impacts of the Proposed Program

The California Environmental Quality Act (CEQA) requires the lead agency, the Metropolitan Water District of Southern California (Metropolitan), to make written findings when deciding to approve a project for which an environmental impact report (EIR) was certified (California Public Resources Code, Section 21081). Specifically, Section 15091 of the State CEQA Guidelines states that:

- (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
 - (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
 - (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
 - (3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.
- (b) The findings required by subsection (a) shall be supported by substantial evidence in the record (14 CCR 15091).

Section 15092 of the State CEQA Guidelines further stipulates that:

- (b) A public agency shall not decide to approve or carry out a project for which an EIR was prepared unless either:
 - (1) The project as approved will not have a significant effect on the environment, or
 - (2) The agency has:
 - (A) Eliminated or substantially lessened all significant effects on the environment where feasible as shown in findings under Section 15091, and
 - (B) Determined that any remaining significant effects on the environment found to be unavoidable under Section 15091 are acceptable due to overriding concerns as described in Section 15093 (14 CCR 15092).

A Programmatic Environmental Impact Report (PEIR) was prepared for the Prestressed Concrete Cylinder Pipe Rehabilitation Program (proposed program). The PEIR identifies certain significant impacts that may occur as a result of the implementation of the proposed program, either alone or on a cumulative basis in conjunction with other past, present, and reasonably foreseeable projects.

Metropolitan is the lead agency with respect to the proposed program pursuant to State CEQA Guidelines Section 15367. As the lead agency, Metropolitan is required by CEQA to make findings with respect to each significant effect of the proposed program. The following sections make detailed findings with respect to the potential effects of the proposed program and refer, where appropriate, to the mitigation measures set forth in the Final PEIR.

The Final PEIR and the administrative record concerning the proposed program provide additional facts in support of the findings herein. Changes to the Draft PEIR are shown in ~~strikeout~~/underline of this Final PEIR. Furthermore, the mitigation measures set forth in the Final PEIR and the Mitigation Monitoring and Reporting Program (MMRP) are incorporated by reference in these findings. The MMRP was developed in compliance with California Public Resources Code Section 21081.6.

1.1.1 Impacts Related to Aesthetics

1.1.1.1 Potentially Significant Impacts Related to Aesthetics

As discussed in Section 4.1 (Aesthetics), during the construction period, nighttime lighting may be required in construction work areas and staging areas for safety and security purposes. During construction and at staging areas, lighting may spill over into adjacent light-sensitive areas, especially residential land uses. Though temporary, this spillover light may result in significant impacts. With the implementation of Mitigation Measure MM AES-1, impacts related to nighttime lighting would be less than significant.

Impacts related to scenic vistas, scenic resources (including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway), and visual character/quality would be less than significant.

1.1.1.2 Mitigation

MM AES-1

In order to prevent impacts related to spillover lighting into light-sensitive land uses, all safety and security lighting at construction work areas and staging areas will be directed downward and shielded to avoid light spilling over into residential areas.

1.1.1.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measure is listed above as MM AES-1. Metropolitan finds that the above mitigation measure is feasible, is adopted, and will reduce the potential aesthetic impacts of the proposed program to less-than-significant levels. Accordingly, Metropolitan finds that, pursuant to California Public Resources Code Section 21081(a)(1) and State CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in or incorporated into the proposed program that will mitigate or avoid any potentially significant impacts related to aesthetics.

1.1.1.4 Facts in Support of Findings Related to Aesthetics

Implementation of Mitigation Measure MM AES-1 would reduce potentially significant program impacts related to aesthetics to a less-than-significant level. There would be no significant, unavoidable impacts related to aesthetics after implementation of this mitigation measure.

1.1.2 Impacts Related to Agriculture and Forestry Resources

As discussed in Section 4.2 (Agriculture and Forestry Resources), the proposed program would not permanently convert any farmland to non-agricultural use. The proposed program would rehabilitate existing pipelines, usually located in existing roadway rights-of-way. Even where the pipelines cross agricultural lands, they are existing underground facilities. During construction, agricultural lands may be temporarily used for access to the pipeline or for staging construction equipment. However, all land would be restored to its pre-construction condition once rehabilitation is completed. Therefore, the proposed program would not permanently convert Important Farmland to non-agricultural use and impacts would be less than significant.

Impacts related to the potential for the proposed program to conflict with existing zoning for agricultural use, areas under a Williamson Act contract, forest land, or timberland, or the potential for the proposed program to result in the loss or conversion of forest land were determined to result in less-than-significant impacts in the Initial Study and are not discussed in the PEIR.

1.1.3 Impacts Related to Air Quality

1.1.3.1 Potentially Significant Impacts Related to Air Quality

As discussed in Section 4.3 (Air Quality), air pollutants would be emitted as a result of rehabilitation activities stemming from the use of construction equipment (primarily diesel-powered), haul and materials vehicle trips, and fugitive dust. Pollutants would exceed the daily regional mass emissions thresholds as well as the localized significance thresholds identified by the South Coast Air Quality Management District (SCAQMD) and would be significant. Following the implementation of Mitigation Measure MM AIR-1, the regional mass emissions would still exceed the SCAQMD regional mass emissions thresholds, but would no longer exceed the localized significance thresholds. Thus, the program would violate an air quality standard or contribute substantially to an existing or projected air quality violation, result in a cumulatively considerable net increase in any criteria pollutant for which the region is in non-attainment, and expose sensitive receptors to substantial pollutant concentrations, and impacts would be significant and unavoidable.

The proposed program would not conflict with, or obstruct, implementation of the applicable air quality plan, or create objectionable odors that would affect a substantial number of people; impacts related to these factors would be less than significant.

1.1.3.2 Mitigation

MM AIR-1

All off-road diesel-powered construction equipment greater than 50 horsepower will meet Tier 4 emission standards. All construction equipment will be outfitted with ARB best available control technology devices. Any emissions-control device used by the contractor will achieve

emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. A copy of each unit's certified tier specification, best available control technology documentation, and ARB or SCAQMD operating permit will be provided to Metropolitan's Construction Inspector at the time of mobilization of each applicable unit of equipment.

1.1.3.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measure is listed above as MM AIR-1. Metropolitan finds that the above mitigation measure is feasible, is adopted, and will substantially reduce the potential air quality impacts. Nonetheless, the impacts would not be reduced to a less-than-significant level. Specific economic, legal, social, technological, or other considerations make mitigation measures or alternatives that would reduce air quality impacts to a less-than-significant level infeasible.

1.1.3.4 Facts in Support of Findings Related to Air Quality

Implementation of Mitigation Measure MM AIR-1 would reduce potentially significant program impacts related to air quality, but not to a less-than-significant level. There would be significant and unavoidable impacts related to air quality after implementation of this mitigation measure.

1.1.4 Impacts Related to Biological Resources

1.1.4.1 Potentially Significant Impacts Related to Biological Resources

As discussed in Section 4.4 (Biological Resources), rehabilitation activities have the potential to result in impacts on protected species. Migratory birds, including most birds that nest in the study area, are protected by the federal Migratory Bird Treaty Act, which forbids most forms of harm to birds, including to their active nests. In addition, California Fish and Game Code Section 3503 makes it unlawful to destroy nests or eggs of any bird. Where vegetation, and especially trees, is removed as part of construction, there is the potential for violations under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code, which would be a significant impact, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-2 may reduce this impact, but potentially not to a less-than-significant level.

Various rehabilitation activities could affect riparian habitats and other sensitive natural communities. Vegetation clearing, excavation, materials storage, traffic, and other activities could remove habitat, result in impacts on runoff and/or water quality, potentially affecting habitat; air quality impacts (dust, exhaust) could affect adjacent habitat; and construction-related traffic could introduce hazardous materials into habitats. These effects could result in significant impacts on riparian habitats or sensitive natural communities, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measures MM BIO-3 and MM BIO-4 may reduce these impacts, but potentially not to less-than-significant levels.

Various rehabilitation activities could affect wetlands if present near work areas. Any of these effects could result in significant impacts on wetlands, but the level of impact would need to be

determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-5 may reduce these impacts, but potentially not to less-than-significant levels.

Various rehabilitation activities could also affect wildlife movement and dispersal in the vicinity of construction. Any of these effects could result in significant impacts on wildlife movement, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-6 may reduce these impacts, but potentially not to less-than-significant levels.

Certain construction and maintenance activities are allowed under the Shell E&P and Metropolitan Habitat Conservation Plan (HCP) and Central and Coastal Natural Communities Conservation Plan (NCCP)/HCP, and would be allowed under the proposed North Fontana Multiple Species Habitat Conservation Plan (covered activities). However, the types of construction for the proposed program that would occur within the covered lands are not known at this time. Therefore, construction could potentially be inconsistent with the requirements of these plans, which would be a significant impact. Without knowing the location or type of rehabilitation activities in the covered lands, the level of impact and mitigation measures to address these impacts cannot be determined at this time. Also, it cannot be determined if impacts could be reduced to less-than-significant levels with mitigation. Therefore, impacts related to conflicts with the adopted Shell E&P and Metropolitan HCP and Central and Coastal NCCP/HCP and the proposed North Fontana Multiple Species Habitat Conservation Plan may be potentially significant and unavoidable. Additional project-specific analysis will be required for rehabilitation activities within the covered lands for these plans.

Many of the cities and counties along the pipelines in the proposed program have tree preservation policies or ordinances requiring permits for removal of trees or replacement of trees, or other protection for vegetation within their jurisdictions. Rehabilitation activities would require removal of some trees and other vegetation throughout the pipelines, including street trees and other landscaping. Although the program would require contractors to restore construction areas to pre-construction conditions after rehabilitation activities are completed, in some cases this restoration may not be consistent with local tree preservation policies or ordinances, which would be a significant impact. Implementation of Mitigation Measure MM BIO-7 would reduce these impacts to less-than-significant levels.

1.1.4.2 Mitigation

MM BIO-1 Take of Special-Status Species.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas) and that contain special-status species, a qualified biologist will visit the site. If the biologist determines that special-status species may occur, preconstruction surveys for special-status plants and/or wildlife will be completed prior to any construction and consultation with the appropriate resource agency will occur (U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife), if necessary, to determine measures to address impacts such as avoidance, minimization, restoration, or compensation.

MM BIO-2 Impacts on Nesting Birds.

For any projects within the program that require vegetation removal during the nesting season for sensitive species protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3513, including street trees and other landscaping, a qualified biologist will inspect the vegetation to be removed no more than 10 days prior to tree/vegetation removal to determine whether nesting birds are present. If a nest is found, the biologist will determine the site-specific measures necessary to avoid disturbing the nest until nesting activity has ceased. Nothing in this mitigation measure precludes the use of deterrent measures to prevent bird nesting.

MM BIO-3 Adverse Impacts on Riparian Habitat.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) which contain riparian vegetation, a qualified biologist will visit the site to conduct pre-construction surveys. If the biologist determines that riparian vegetation is present, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken, including applying for appropriate regulatory permits, as required.

MM BIO-4 Adverse Impacts on Sensitive Natural Communities.

Removal of or adverse impacts on sensitive natural communities will be minimized for rehabilitation projects in the program, except in accordance with adopted HCPs/NCCPs to which Metropolitan is a party for covered areas and covered activities. For such covered activities, Metropolitan will coordinate with the appropriate resource agencies, and Metropolitan's contractors will adhere to all requirements in the applicable plan. For any activities not covered by an adopted HCP/NCCP, the following shall apply:

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) and that contain sensitive natural communities, a qualified biologist will conduct pre-construction surveys for sensitive natural communities prior to any construction. These surveys will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. If sensitive natural communities are located during the surveys, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken including applying for appropriate regulatory permits, as required.

MM BIO-5 Adverse Impacts on Wetlands.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (including large landscaped areas, parks, and golf courses), which contain wetlands, a qualified biologist will visit the site to conduct pre-construction surveys. If the biologist determines that wetlands may be present, preconstruction wetlands jurisdictional delineations will be required prior to any construction. These delineations will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. Any jurisdictional wetlands located during the

delineations will be mapped and flagged for avoidance or other measures may be taken, including applying for appropriate regulatory permits, as required.

MM BIO-6 Impacts on Wildlife Movement.

For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas), a qualified biologist will visit the site to determine if any identifiable wildlife movement corridors are present at the site. If the biologist determines that such corridors are present, then wildlife movement corridors will be mapped, flagged, and avoided, or other measures will be taken to protect wildlife movement, as appropriate.

MM BIO-7 Conflicts with Local Policies Related to Biological Resources.

For any projects within the program that require vegetation removal, Metropolitan will determine if there are any applicable local policies related to biological resources and, if so, coordinate with the affected jurisdiction as necessary to determine appropriate requirements for vegetation removal and replacement. The contractor will be required to comply with any applicable requirements. Nothing in this mitigation will require the contractor to make improvements beyond the existing condition prior to construction.

1.1.4.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measures are listed above as MM BIO-1 through MM BIO-7. Metropolitan finds that the above mitigation measures are feasible, are adopted, and will substantially reduce the potential biological resource impacts. Nonetheless, the impacts would not be reduced to a less-than-significant level. Specific economic, legal, social, technological, or other considerations make mitigation measures or alternatives that would reduce biological resource impacts to a less-than-significant level infeasible.

1.1.4.4 Facts in Support of Findings Related to Biological Resources

Implementation of Mitigation Measures MM BIO-1 through MM BIO-7 would reduce potentially significant program impacts related to biological resources, but not to a less-than-significant level. There would be significant and unavoidable impacts related to biological resources after implementation of these mitigation measure.

1.1.5 Impacts Related to Cultural Resources

1.1.5.1 Potentially Significant Impacts Related to Cultural Resources

As discussed in Section 4.5 (Cultural Resources), during rehabilitation, there is the potential for construction to result in adverse impacts on built environment resources. Specifically, ground-borne vibration from excavation and concrete cutting could potentially adversely affect nearby resources, which would be a significant impact. Implementation of Mitigation Measure MM CUL-1 would reduce this impact to a less-than-significant level.

If construction were to occur in proximity to any of the previously recorded archaeological resources, there is a potential to damage the sites and undiscovered buried components of the sites. The sediments in proximity to the pipelines have been previously disturbed by installation of the pipelines, and therefore the potential for intact archaeological resources is low, but not precluded; consequently, potential significant impacts on archaeological resources could occur. Mitigation Measure MM CUL-2 would mitigate impacts on these known resources to less-than-significant levels.

Pipelines routes that do not cross known archaeological sites and have been disturbed by previous construction have a low potential to encounter unknown buried archaeological resources, although resources could still be found intact in trench walls and other excavation areas; therefore, potential significant impacts on archaeological resources could occur. Due to this low potential, archaeological monitoring is not required. Mitigation Measures MM CUL-3 and MM CUL-4 would mitigate impacts on unknown resources to less-than-significant levels.

Areas selected for staging areas or for other activities beyond the alignments of the existing pipeline routes have not been identified and may contain archaeological resources. Staging or other rehabilitation activities could result in significant impacts on these resources. Implementation of Mitigation Measure MM CUL-5 would mitigate impacts on archaeological resources to less-than-significant levels.

The proposed program has the potential to affect paleontological resources within the pipeline alignments or in staging areas during rehabilitation activities. Paleontological resources could be inadvertently unearthed during ground-disturbing activities. Implementation of Mitigation Measure MM CUL-6 would reduce impacts on paleontological resources to less-than-significant levels.

The proposed program has the potential to disturb human remains within the pipeline alignments or in staging areas during excavations or grading. Human remains could be inadvertently unearthed during ground-disturbing activities. This could result in damage to or destruction of these human remains, including those interred outside of formal cemeteries, which would be a significant impact under CEQA. However, California State Law in Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code requires specific procedures for identification and treatment of human remains, both Native American and non-Native American. Therefore, impacts on human remains from the proposed program would be less than significant.

1.1.5.2 Mitigation

MM CUL-1 Historic Resources Protection Program.

To avoid impacts on built environment (historic) resources, prior to any rehabilitation involving excavation or concrete cutting, a qualified cultural resource specialist will determine whether there are any identified or eligible historical resources present and whether proposed construction activities could adversely affect these resources. If any resources could be adversely affected by construction, measures will be taken to prevent adverse impacts on the resource, as determined by the qualified cultural resource specialist.

MM CUL-2 Avoidance or Monitoring of Archaeological Sites.

To avoid impacts on archaeological sites, prior to construction of any program element, such as pipeline alignments, construction staging areas, laydown areas, or relocation of pipelines in new

alignments, a new record search will be conducted to determine if additional sites or resources have been recorded on or adjacent to the proposed construction section. Reports will be examined to determine the condition of each site when recorded, if the site has been evaluated, and if destruction of the site is documented. Following this review, recorded archaeological sites that are within the pipeline route will be surveyed and their present conditions assessed (see MM CUL-4). Archaeological monitoring will be required during construction-related ground-disturbing activities if within the recorded area of a significant or potentially significant site and for a 50-foot buffer beyond the site boundary. A Native American monitor may be present if the site is prehistoric. If archaeological materials are discovered during monitoring, procedures outlined in MM CUL-4 will be implemented.

If it can be demonstrated that the site has been destroyed by previous construction or other actions and there is no potential for other buried parts of the site within the construction area, or if the site has been evaluated and determined not eligible for the California Register of Historical Resources (CRHR), then monitoring will not be required.

MM CUL-3 Preconstruction Meeting for Identifying Cultural Resources.

To avoid impacts on previously unidentified cultural resources, all construction personnel will attend a preconstruction meeting that includes a discussion of cultural resources. The meeting will inform construction personnel on how to identify potential cultural resources during ground-disturbing activities and what to do if such potential resources are encountered.

MM CUL-4 Previously Unidentified Resources Encountered during Ground-disturbing Activities.

In the event that any potentially significant cultural resources are unexpectedly encountered during construction, work will be immediately halted and the discovery shall be protected in place. The contractor will halt construction within 50 feet of the exposed resource until a qualified cultural resources specialist evaluates the discovery.

If the qualified cultural resources specialist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. This additional work may include avoidance, testing, and evaluation or data recovery excavation. Work shall be prohibited in the restricted area until Metropolitan provides written authorization.

MM CUL-5 Archaeological Survey of Non-Pipeline Areas.

Prior to rehabilitation activities of any program element, each area will be subject to pedestrian survey for archaeological resources by a professional archaeologist retained by Metropolitan if ground-disturbing activities are slated to occur. If archaeological sites are recorded or found in these affected areas, the sites will be avoided to the greatest extent feasible. If a site cannot be avoided, site testing and evaluation by a professional archaeologist will be required. This may require test excavations, artifact analysis, evaluation for the CRHR and review by the State Historic Preservation Officer, and possibly data recovery excavation and reporting.

MM CUL-6 Develop a Program to Mitigate Impacts on Paleontological Resources for Each Contract Package

In order to avoid impacts on paleontological resources, the following mitigation program will be implemented for each contract package. This mitigation program will be conducted by a qualified professional paleontologist and will be consistent with the provisions of CEQA. This program will include the following:

1. Assessment of site-specific excavation areas to determine those that may be designated as highly sensitive for unique paleontological resources to be monitored during ground disturbance.
2. In these designated areas, if any, paleontological resources monitors qualified to Society of Vertebrate Paleontology standards will be equipped to salvage fossils as they are unearthed and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitoring may be reduced or eliminated if some of the potentially fossiliferous units are determined upon exposure and examination by qualified paleontological resources personnel to have low potential to contain fossil resources. Also in these designated areas, all unique paleontological resources, if any, will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates.
3. Unique paleontological resources, if any, will be identified and curated into an established, accredited museum repository will be required.
4. Preparation of a report of findings including a summary of field work and laboratory methods, an overview of the program work area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, a copy of the report will also be submitted to the designated museum repository.

1.1.5.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measures are listed above as MM CUL-1 through MM CUL-6. Metropolitan finds that the above mitigation measures are feasible, are adopted, and will reduce the potential cultural resources impacts of the proposed program to less-than-significant levels. Accordingly, Metropolitan finds that, pursuant to California Public Resources Code Section 21081(a)(1) and State CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in or incorporated into the proposed program that will mitigate or avoid any potentially significant impacts related to cultural resources.

1.1.5.4 Facts in Support of Findings Related to Cultural Resources

Implementation of Mitigation Measures MM CUL-1 through MM CUL-6 would reduce potentially significant program impacts related to cultural resources to a less-than-significant level. There would be no significant, unavoidable impacts related to cultural resources after implementation of these mitigation measures.

1.1.6 Impacts Related to Geology and Soils

As discussed in Section 4.6 (Geology and Soils), all of the feeders with the exception of the Calabasas Feeder would cross at least one Alquist-Priolo Earthquake Fault Zone. Fault rupture and seismic ground shaking, if it is to occur, could affect the integrity of a pipeline and damage could occur. Although there are designated Alquist-Priolo Earthquake Fault Zones within the study area for the proposed program, the proposed program would not include construction of structures intended for human occupancy. In addition, the hazard of fault rupture at a feeder/fault crossing would exist during program operation. However, similar to construction activities, this hazard is considered to pose an acceptable level of risk for operation of a water conveyance system and would not draw a significant amount of people to the area. Risks related to seismic ground failure, including liquefaction, landslides, soil erosion or topsoil loss, lateral spreading, subsidence, liquefaction, collapse, or expansive soil, would also be considered to pose an acceptable level of risk for operation of a water conveyance system. Therefore, implementation of the proposed program would not create a substantial risk to life or property involving rupture of a known earthquake fault, and impacts would be less than significant.

1.1.7 Impacts Related to Greenhouse Gas Emissions

1.1.7.1 Potentially Significant Impacts Related to Greenhouse Gas Emissions

As discussed in Section 4.7 (Greenhouse Gas Emissions), program-related rehabilitation activities would result in greenhouse gas (GHG) emissions from fuel combustion associated with on- and off-road construction equipment and vehicles. Emissions associated with construction would result in amortized annual emissions of just over 4,700 metric tons, which exceeds the SCAQMD threshold of 3,000 metric tons. As such, impacts would be significant. With the implementation of Mitigation Measure MM AIR-1, impacts would be reduced, but would remain significant.

Although the proposed program would generate GHG emissions, net increases in GHG emissions would occur only during the construction period and would not conflict with statewide GHG reduction goals. Impacts related to the potential for the proposed program to conflict with GHG reduction plans, policies, and regulations would be less than significant.

1.1.7.2 Mitigation

See MM AIR-1 above.

1.1.7.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measure is listed above as MM AIR-1. Metropolitan finds that the above mitigation measure is feasible, is adopted, and will reduce the potential GHG impacts. Nonetheless, the impacts would not be reduced to a less-than-significant level. Specific economic, legal, social, technological, or other considerations make mitigation measures or alternatives that would reduce GHG impacts to a less-than-significant level infeasible.

1.1.7.4 Facts in Support of Findings Related to Greenhouse Gas Emissions

Implementation of Mitigation Measure MM AIR-1 would reduce potentially significant program impacts related to GHG emissions, but not to a less-than-significant level. There would be significant and unavoidable impacts related to GHG emissions after implementation of this mitigation measure.

1.1.8 Impacts Related to Hazards and Hazardous Materials

1.1.8.1 Potentially Significant Impacts Related to Hazards and Hazardous Materials

As discussed in Section 4.8 (Hazards and Hazardous Materials), rehabilitation work would involve hazardous materials typical of a construction project, and it is expected that the proposed program would be operated in compliance with applicable federal, state, and local regulations. Any release of commonly used materials would be localized and immediately contained and cleaned up. It is possible that construction activities related to the proposed program may encounter contaminated media from nearby hazardous materials sites during excavations, potentially exposing the surrounding environment, including nearby schools, to hazardous conditions. These potential impacts would be significant. Implementation of Mitigation Measures MM HAZ-1 through MM HAZ-4 would reduce potential impacts on the surrounding environment, including school sites within 0.25 mile, to less-than-significant levels.

Rehabilitation activities would encounter numerous sites found in various environmental databases. In some cases, the existing pipelines traverse areas within or near National Priorities List sites. It is expected that most industrial and commercial facilities within 1 mile of the pipes that deal with storage, use, and disposal of hazardous materials comply with all appropriate federal, state, and local regulations to ensure safety of the surrounding public and environment. However, it is possible that construction activities may encounter contaminated media during excavations either at known or unknown sites, resulting in a significant hazard to the construction workers, the public, or the environment. This would be a significant impact. Implementation of Mitigation Measures MM HAZ-1 through MM HAZ-4 would reduce potential impacts to less-than-significant levels.

If any aboveground rehabilitation activities were to occur in airport runway protection zones, construction equipment and/or personnel could interfere with airport operations. Also, where pipelines cross under runway or taxiway areas, there is the potential for below-ground construction activities to affect or be affected by airport operations and safety. Impacts would be significant. Implementation of Mitigation Measure MM HAZ-5 would reduce potential impacts to less-than-significant levels.

No private airstrips are in the vicinity of any of the pipelines; therefore, the program would not result in safety hazards to workers involved in the rehabilitation activities associated with the proposed program.

In some cases the proposed program pipelines are within street rights-of-way that serve as emergency response routes and/or evacuation routes. If excavation were to take place in roadways that serve as emergency/excavation routes and capacity of the affected streets was reduced during construction (such as reducing four lanes to two lanes), the ability of these streets to serve as emergency/evacuation routes may be impaired. This would be a significant impact during

construction. Implementation of Mitigation Measure MM HAZ-7 would reduce these impacts to less-than-significant levels.

Implementation of the proposed program would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

1.1.8.2 Mitigation

MM HAZ-1 Project-Level Hazardous Materials Sites Assessment Prior to Construction Activities

To avoid exposure of construction workers, the public, or the environment to previously identified hazardous materials, during design, qualified Metropolitan staff or consultant(s) specializing in hazardous materials impact assessment will conduct a project-level analysis to determine if there are existing hazardous materials sites in the vicinity of the construction site and potential for existing hazardous materials sites to affect construction. This assessment will consist of a search for environmental-related information present in publicly accessible databases. The information will be reviewed to determine if the construction footprint or adjacent properties are listed in the databases. If the construction footprint or adjacent properties are listed in the databases, qualified Metropolitan staff or consultant(s) will determine the potential risk to construction workers, the public, or the environment from rehabilitation activities and identify all necessary avoidance, abatement, remediation, cleanup, disposal, monitoring, reporting, notifications, and/or other measures to prevent significant impacts.

MM HAZ-2 Encountering Unreported Hazardous Materials

To avoid exposure of construction workers, the public, or the environment to unreported hazardous materials in the soil, contractors will be required to inspect any site to be used for excavation, work zones, staging, or other rehabilitation-related activities prior to beginning construction. If odiferous, stained, or discolored soil is encountered, qualified Metropolitan staff or consultant(s) specializing in the identification and handling of hazardous materials will be retained to assess the site. Identification of possible hazardous materials would typically involve soil samples and laboratory analysis. The suspect soil will be isolated, covered, and avoided by construction personnel until analytical results are reviewed by qualified personnel. Soils identified as hazardous or contaminated will be handled, transported, and treated in accordance with all federal, state, and local existing hazardous materials regulations.

MM HAZ-3 Engineering Controls and Best Management Practices during Construction

To minimize human exposure to potential contaminants, during construction contractors will employ the use of engineering controls and best management practices (BMPs). Engineering controls and construction BMPs will include, but are not limited to, the following:

- Contractor employees working on site handling hazardous materials on contaminated media will be certified in the Occupational Health and Safety Administration's 40-hour Hazardous Waste Operations and Emergency Response training.
- Contractors will water or mist soil as it is being excavated and stockpiled or loaded onto transportation trucks.

MM HAZ-4 Encountering Contaminated Groundwater

To avoid exposure of construction workers, the public, or the environment to contaminated groundwater, suspect water removed from excavation areas (but not including dewatering of the pipelines themselves) will be tested by a qualified laboratory specializing in the identification of hazardous materials. If groundwater is considered hazardous, Metropolitan will notify the Regional Water Quality Control Board and local Environmental Health agencies regarding assessment and remediation requirements.

MM HAZ-5 Construction Activities within Runway Protection Zones

During the design phase for any projects in the program within the runway protection zones for Long Beach Municipal Airport or Van Nuys Airport (even where all construction would be accessed from outside the runway protection zones), project engineers will coordinate with the management of Long Beach Municipal Airport (Second Lower Feeder) or Van Nuys Airport (Sepulveda Feeder), as appropriate, to determine the methods of construction that will be necessary to avoid impacts on airport operations and safety. All operations and safety requirements of the airports will be incorporated into the construction design packages. All necessary requirements will be implemented during construction.

MM HAZ-6 Aboveground Elements in Runway Protection Zones

To avoid airport operations and safety impacts, no permanent aboveground elements of the proposed program, such as manhole covers, valve boxes, or electrical panels, will be located within runway protection zones (at Long Beach Municipal Airport for the Second Lower Feeder and Van Nuys Airport for the Sepulveda Feeder) without prior approval of the management of the appropriate airport.

MM HAZ-7: Maintaining Emergency/Evacuation Routes

To avoid impacts on emergency/evacuation routes, excavation sites will typically not be placed in roadways that serve as designated emergency/evacuation routes. If such streets cannot be avoided, the contractor will work with the local jurisdiction responsible for the emergency/evacuation routes to maintain adequate capacity. This will be accomplished by utilizing unused portions of the street right-of-way for travel lanes (such as temporarily prohibiting parking, restriping medians or parkway space, or detouring bike lanes) or by detouring the emergency/evacuation route to other roadways during construction. If detours are necessary, appropriate notification of emergency personnel and temporary signage will be used to direct emergency/evacuation traffic during construction.

1.1.8.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measures are listed above as MM HAZ-1 through MM HAZ-7. Metropolitan finds that the above mitigation measures are feasible, are adopted, and will reduce the potential hazards/hazardous materials impacts of the proposed program to less-than-significant levels. Accordingly, Metropolitan finds that, pursuant to California Public Resources Code Section 21081(a)(1) and State CEQA Guidelines Section 15091(a)(1), changes or alterations have been

required in or incorporated into the proposed program that will mitigate or avoid any potentially significant impacts related to hazards/hazardous materials.

1.1.8.4 Facts in Support of Findings Related to Hazards and Hazardous Materials

Implementation of Mitigation Measures MM HAZ-1 through MM HAZ-7 would reduce potentially significant program impacts related to hazards/hazardous materials to a less-than-significant level. There would be no significant, unavoidable impacts related to hazards/hazardous materials after implementation of these mitigation measures.

1.1.9 Impacts Related to Hydrology and Water Quality

1.1.9.1 Potentially Significant Impacts Related to Hydrology and Water Quality

As discussed in Section 4.9 (Hydrology and Water Quality), implementation of the proposed program could alter existing drainage patterns at each project site as a result of the presence of new aboveground facilities at each project site. The new facilities may change the extent of permeable or impermeable surfaces, which could alter the direction and volume of overland flows during both wet and dry periods. Aboveground enclosures are typically located on sidewalk median strips and house back-flow preventer valves and air vents. With the implementation of Mitigation Measure MM HYD-1, a grading and drainage plan would be developed during project design for aboveground facilities within pervious areas and implemented to ensure no increase in flooding on or off site. Impacts would be less than significant with mitigation.

Construction of each excavation area would require the use of heavy equipment and construction-related chemicals, such as fuels, oils, grease, solvents, and paints that would be stored in limited quantities on site. In the absence of proper controls, these construction activities could result in accidental spills or disposal of potentially harmful materials used during construction that could wash into and pollute surface waters or groundwater. As construction of each of the projects under the proposed program is initiated, individual construction discharge permits would be acquired, and construction BMPs would be designed to minimize erosion and sedimentation and prevent spills such that significant impacts would not result.

The proposed program facilities would not alter the course of a stream or river. The proposed program would not involve the alteration of these channels, nor is it expected to increase the flow within these channels. As a result, there would be no increase in erosion or siltation along river or stream channels, nor would the proposed program expected to increase the flow within these channels.

With respect to the potential for the proposed program to create or contribute runoff that would exceed the capacity of stormwater systems, runoff could be generated during construction of the proposed program facilities during a storm event or from non-stormwater discharges, such as water used for dust control or hydrostatic testing of the pipelines. However, BMPs would be regularly inspected and monitored for performance during construction activities, and impacts would be less than significant.

The proposed program is not subject to tsunamis, as no portion of the proposed program is within a coastal zone. Some areas in the program vicinity are adjacent to enclosed bodies of water that could be subject to seiche under extreme conditions. However, the flood inundation area is a pre-existing condition within the project area, and the placement of the proposed project facilities in the inundation area would not exacerbate this condition. The proposed program facilities consist of either subterranean improvements or low-profile features and the potential impact on structures subject to inundation by seiche would be less than significant. In general, the proposed program would be in relatively flat areas that are not susceptible to mudflows.

1.1.9.2 Mitigation

MM HYD-1 Implementation of a Grading and Drainage Plan.

Prior to construction of aboveground project facilities, Metropolitan will prepare a grading and drainage plan that identifies anticipated changes in flow that would occur on site and minimizes any potential increases in flooding, erosion, or sedimentation potential in accordance with applicable regulations and in coordination with the county and/or the city in which the facility would be located. The plan will identify and implement best management practices and other measures to ensure that potential increases in stormwater flows and erosion are minimized..

1.1.9.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measure is listed above as MM HYD-1. Metropolitan finds that the above mitigation measure is feasible, is adopted, and will reduce the potential hydrology/water quality impacts of the proposed program to less-than-significant levels. Accordingly, Metropolitan finds that, pursuant to California Public Resources Code Section 21081(a)(1) and State CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in or incorporated into the proposed program that will mitigate or avoid any potentially significant impacts related to hydrology/water quality.

1.1.9.4 Facts in Support of Findings Related to Hydrology and Water Quality

Implementation of Mitigation Measure MM HYD-1 would reduce potentially significant program impacts related to hydrology/water quality to a less-than-significant level. There would be no significant, unavoidable impacts related to hydrology/water quality after implementation of this mitigation measure.

1.1.10 Impacts Related to Land Use and Planning

As discussed in Section 4.10 (Land Use), the proposed program would not physically divide an established community. In some cases, construction work areas, primarily for the excavation sites, may require access to certain facilities to be blocked or rerouted during construction. This could temporarily create barriers that would physically divide communities from the most direct access to community facilities. These changes would not be permanent and would only affect a given area for a duration between 6 and 9 months, and the contractors would be required to maintain access to facilities in some manner. The proposed program would not change land uses; the program's

consistency with land use plans would be the same as the existing condition. Impacts related to land use would be less than significant, and no mitigation measures are required.

1.1.11 Impacts Related to Mineral Resources

The Initial Study for the proposed program found no potential for significant impacts on mineral resources; therefore, mineral resources were not addressed in the PEIR. No mitigation would be required and no significant, unavoidable adverse impacts would occur.

1.1.12 Impacts Related to Noise

1.1.12.1 Significant Impacts Related to Noise

As discussed in Section 4.11 (Noise), noise levels during rehabilitation activities, specifically during excavation and concrete sawing, would be likely to reach very high levels, generally exceeding any noise-level restrictions set by some local jurisdictions. If construction were to occur in these jurisdictions, it is likely that noise levels would exceed local standards. Because of the type of construction and its location, there is no effective mitigation that would reduce this impact below a level of significance. Therefore, impacts would be significant, at least at some locations, related to exposing persons to, or generating, noise levels in excess of standards. Mitigation Measures MM NOI-2 through MM NOI-4 would reduce impacts, but not to a less-than-significant level.

For most locations, vibration from construction activities would not be great enough to result in impacts on vibration-sensitive receptors. However, at some locations, excavation, concrete-sawing, and other construction activities could generate vibration levels that could affect adjacent activities, such as near performing arts centers, hospitals, or where residences are close to the excavation site. Implementation of Mitigation Measure MM NOI-1 would reduce any impacts to less-than-significant levels.

The proposed program would not result in any permanent changes in noise levels after rehabilitation is complete. After construction is complete, the noise levels would be the same as the existing conditions. Therefore, there would be no impact.

Some portions of the existing pipelines are within airport land use plan areas or near airports. However, because the program would not change land uses, and construction workers would be wearing noise safety gear as required by the federal Occupational Safety and Health Administration, noise impacts related to nearby airports would be less than significant. There are no private airstrips in the vicinity of the existing pipelines. Therefore, there would be no impacts associated with noise from private airstrips.

1.1.12.2 Mitigation

MM NOI-1 Locate Excavation Sites Away From Vibration-Sensitive Uses

A noise and vibration consultant will be retained during excavation site planning to determine if there are vibration-sensitive land uses that could be affected by construction. Whenever possible, excavation sites will then be located so that vibration impacts would not affect vibration-sensitive land uses or mitigation would be included to reduce vibration levels at vibration-sensitive land uses to less-than-significant levels.

MM NOI-2 Locate Excavation Sites Away From Noise-Sensitive Receptors Where Feasible.

A noise consultant will be retained during excavation site planning to determine if there are sensitive receptors that could be affected by construction. Whenever possible, the excavation sites will be located in areas that would not affect sensitive receptors or where receptors can be shielded from construction noise.

MM NOI-3 Conduct Project-Level Noise Studies at Each Excavation Site Where Noise-Sensitive Receptors Are Present.

Project-level noise studies will be required at all excavation sites where sensitive receptors are present, as required in the planning stage by MM NOI-2. Such noise studies will identify the ambient noise levels, the receptors that would be affected, the noise levels the receptors will experience during construction, and any measures that can be used to reduce noise levels. All feasible mitigation measures identified in this noise study will be implemented.

MM NOI-4 Locate Staging Areas Away from Noise-Sensitive Receptors or Provide Noise Attenuation.

Whenever feasible, staging areas will be located in areas that would not affect sensitive receptors or where receptors can be shielded from staging-area noise. Where possible, noise screening will include temporary noise barriers with openings in the barriers kept to the minimum necessary for access.

1.1.12.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measures are listed above as MM NOI-1 through MM NOI-4. Metropolitan finds that the above mitigation measures are feasible, are adopted, and will reduce the potential noise impacts. Nonetheless, the impacts would not be reduced to a less-than-significant level. Specific economic, legal, social, technological, or other considerations make mitigation measures or alternatives that would reduce noise impacts to a less-than-significant level infeasible.

1.1.12.4 Facts in Support of Findings Related to Noise

Implementation of Mitigation Measures MM NOI-1 through MM NOI-4 would reduce potentially significant program impacts related to noise, but not to a less-than-significant level. There would be significant and unavoidable impacts related to noise after implementation of these mitigation measures.

1.1.13 Impacts Related to Population and Housing

The Initial Study for the proposed program found no potential for significant impacts on population and housing; therefore, population and housing were not addressed in the PEIR. No mitigation would be required and no significant, unavoidable adverse impacts would occur.

1.1.14 Impacts Related to Public Services

The Initial Study for the proposed program found no potential for significant impacts related to public services; therefore, public services were not addressed in the PEIR. No mitigation would be required and no significant, unavoidable adverse impacts would occur.

1.1.15 Impacts Related to Recreation

As discussed in Section 4.12 (Recreation), portions of the proposed program pipelines are located in rights-of-way or easements within recreational facilities, such as through parks, golf courses, or schoolyards. In these locations, excavation sites and work areas could result in part or all of the facility being unavailable during construction, for a maximum of approximately 6 months.¹ Also, construction staging areas may be located in parks, school yards, golf courses, or other recreational facilities for months or longer, depending on how many excavation sites the staging area is serving. Metropolitan would work with the local jurisdictions and schools to ensure that rehabilitation would not result in significant temporary impacts on recreational activities or permanent physical deterioration of recreational facilities. Because rehabilitation activities would not permanently preclude recreational uses and would not require them to be relocated elsewhere, rehabilitation activities would not lead to increased deterioration of recreational facilities. Impacts would be less than significant.

1.1.16 Impacts Related to Transportation and Traffic

1.1.16.1 Significant Impacts Related to Transportation and Traffic

During the course of the pipeline rehabilitation work, work zones would be established within existing roadways, requiring lane closures, temporary signage, traffic cones and delineators, fencing, and barriers (i.e., concrete trapezoidal “K rail,” or Caltrans Temporary Type K railing). Where work zones are located within streets, temporary impacts on transportation would occur, including increased congestion and travel times, reduced access, and impacts on transit operations, bike routes, and pedestrian routes. The disruption of local and regional traffic caused by capacity reduction would be significant at some locations. Implementation of Mitigation Measure MM TRA-1 would reduce these impacts in some locations, but would not be feasible in all circumstances. Therefore, impacts on local and regional transportation are considered significant and unavoidable.

Because the proposed program would include rehabilitation of existing pipelines, which are underground, there would be minimal impacts related to long-term congestion management plans.

If any aboveground rehabilitation activities were to occur in airport runway protection zones, construction equipment and/or personnel could interfere with airport operations. However, impacts would be less than significant with the implementation of Mitigation Measures MM HAZ-5 and MM HAZ-6.

¹ Work areas may include access areas, staging areas, parking areas, safety areas, etc.

1.1.16.2 Mitigation

MM TRA-1 Excavation Siting to Minimize Traffic Impacts

Excavation sites would be located to avoid traffic impacts to the maximum extent feasible, considering the logistical requirements for pipeline rehabilitation (e.g., adequate spacing, pipeline logistics) and other impacts such as habitat and noise. To the maximum extent feasible, the following will be considered when locating excavation sites:

- Whenever feasible, where an off-road excavation site is available that would not result in other significant environmental impacts (e.g., to habitat, land uses), the off-road location will be used.
- Whenever feasible, excavation sites in roadways will be situated within medians where available, especially if the medians are not used for left-turn lanes and do not include large street trees or other features that would be difficult to restore after rehabilitation.
- Whenever feasible, excavation sites will be situated where the existing number of travel lanes can be maintained by temporarily removing parking (where adequate parking is available in the local area), temporarily relocating bike lanes to adjacent roadways, or temporarily restriping to provide narrower lanes (where they can be safely accommodated).
- Whenever feasible, excavation sites will be situated so that adequate access to adjacent properties can be maintained, including left-turn entrances.
- Whenever feasible, excavation sites will be situated so that bicycle and pedestrian circulation can be safely maintained, either by use of barriers or other safety features, or by providing alternative bicycle and pedestrian routes, with appropriate signage. Where feasible, siting excavation near heavily used pedestrian areas, such as around schools, hospitals, and transit stops, will be avoided. Where feasible, siting excavation in areas designated as safe routes to school will be avoided, or alternative routes will be developed in coordination with the local jurisdictions and school districts and providing appropriate signage, notification, and traffic controls.

MM TRA-2 Construction Traffic Control Plans

Metropolitan and/or its contractors will coordinate with the counties of Los Angeles, Orange, and San Bernardino as well as each local jurisdiction through which the pipelines travels (see tables above) to develop construction traffic control measures and procedures prior to the start of construction on each project. Measures to reduce temporary construction traffic and transportation impacts on city streets may include, but not be limited to, the following:

- Development of traffic control plans in coordination with local jurisdictions. The traffic control plans will be implemented and revised, as necessary and applicable.
- Provision of advance written notification of construction activities to residences and businesses around each construction site.
- Identification of travel routes and establishment of optimal arrival and departure times to minimize conflicts with residents, schools, and businesses, as feasible to minimize conflicts.
- Provisions to detour pedestrians and bicyclists from project near or on the sidewalks and bike lanes.

- Implementation of safety measures, such as signs, flaggers, cones, signage, and advance notice as appropriate.
- Covering of all open trenches when not in use or at the end of each work day, as applicable.

MM TRA-3 Maintaining Adequate Parking

Whenever feasible, excavation work zones and construction staging areas will not be sited in such a way that they result in inadequate availability of parking for adjacent land uses. If work zones or staging areas are planned for parking areas, a parking study will be completed by a qualified traffic consultant prior to construction to identify if adequate parking would be available locally.

See MM HAZ-5 and MM HAZ-6 above.

1.1.16.3 Findings per State CEQA Guidelines

Consistent with State CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts were developed for the potentially significant impacts described above. The feasible measures are listed above as MM TRA-1 through MM TRA-3 and MM HAZ-5 and MM HAZ-6. Metropolitan finds that the above mitigation measures are feasible, are adopted, and will reduce the potential transportation impacts. Nonetheless, the impacts would not be reduced to a less-than-significant level. Specific economic, legal, social, technological, or other considerations make mitigation measures or alternatives that would reduce transportation/traffic impacts to a less-than-significant level infeasible.

1.1.16.4 Facts in Support of Findings Related to Transportation and Traffic

Implementation of Mitigation Measures MM TRA-1 through MM TRA-3 and MM HAZ-5 and MM HAZ-6 would reduce potentially significant program impacts related to transportation/traffic, but not to a less-than-significant level. There would be significant and unavoidable impacts related to transportation/traffic after implementation of these mitigation measures.

1.1.17 Impacts Related to Utilities and Service Systems

As discussed in Section 4.14 (Utilities and Service Systems), the proposed program would not generate any long-term or substantial quantities of wastewater, and it would not involve permanent structures with the potential to generate wastewater. In addition, the proposed program would not involve the construction of new water facilities or require new water supplies, and it would not increase the capacity of the Metropolitan water distribution system. The proposed program would also not generate substantial amounts of solid waste such that landfill capacity would be affected, or non-compliance with statutes and regulations related to solid waste would occur. Impacts related to utilities and service systems would be less than significant. No mitigation measures are required.

1.1.18 Impacts Related to Energy Conservation

As discussed in Section 4.15 (Energy Conservation), construction activities would require energy in the form of fuels for construction vehicles and equipment. Although the estimated fuel use would be substantial, the construction would occur over a long time horizon. As such, the annual fuel

consumption would represent a small portion of the total, a negligible increase in regional demand. In addition, all construction equipment would be maintained in accordance with manufacturers' specifications so equipment performance would not be compromised such that the inefficient use of fuel would result. Therefore, impacts related to energy use would be less than significant. No mitigation measures are required, but Mitigation Measure MM AIR-1 would reduce energy consumption.

1.2 Findings Regarding Alternatives to the Proposed Program

Section 15126.6(a) of the State CEQA Guidelines states that an EIR shall describe "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project," as well as provide an evaluation of "the comparative merits of the alternatives." Under Section 15126.6(a), an EIR does not need to consider alternatives that are not feasible, nor need it address every conceivable alternative to the project. The range of alternatives "is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." The focus is on informed decision-making and public participation rather than providing a set of alternatives simply to satisfy format.

As described below, two types of alternatives to the proposed program were considered—alternative locations and alternative methods—along with a No Program Alternative. Except for the No Program Alternative, all of these potential alternatives have been rejected, as described below.

1.2.1 Alternatives Eliminated from Further Consideration

1.2.1 Alternative Locations

Potential alternative pipeline locations are program feeder improvements, including the Allen-McColloch Pipeline, the Calabasas Feeder, the Rialto Pipeline, the Second Lower Feeder, and the Sepulveda Feeder, and are substantially constrained by the need to connect the existing pipelines at their origins and terminations and to the existing service connections. Any alternative location would also be constrained by the width of the existing Metropolitan rights-of-way. Such constraints mean that there is no reasonable way to achieve the objectives of the proposed program by replacing the pipelines in other locations. Therefore, no alternative locations for the proposed program were developed.

1.2.2 Alternative Methods

The program description includes various methods for rehabilitation of the pipelines, including steel cylinder relining, steel pipe sliplining, and new pipe replacement. All of these methods were considered in the PEIR as variations within the program. There are no other feasible methods for rehabilitating the existing pipelines. Therefore, no alternative methods for the proposed program were developed.

1.2.3 Alternatives to the Proposed Program Evaluated in the Draft PEIR

The proposed program was compared to the No Program Alternative.

1.2.3.1 No Program Alternative

Under the No Program Alternative, repairs and improvements included in the proposed PCCP Rehabilitation Program would not be planned and scheduled. Because the pipelines and feeders would continue to age, there would be a continued risk for failure. Metropolitan would need to prevent failures through localized and as-needed improvements, but these activities would not occur as part of a planned program. Much of this rehabilitation would thus occur as “urgent repairs” because of the lack of a systematic planning offered by the proposed PCCP Rehabilitation Program.

1.2.3.2 Comparison of Impacts

If an alternative is considered clearly superior to the proposed project relative to identified impacts, Section 15126.6 of the State CEQA Guidelines requires that alternative to be identified as the environmentally superior alternative. By statute, if the environmentally superior alternative is the No Project Alternative, an EIR must also identify an environmentally superior alternative among the other alternatives.

Two alternatives to the proposed PCCP Rehabilitation Program, other than the No Program Alternative, were considered; however, these alternatives were not further considered and analyzed for the reasons stated in Section 1.2.1, *Alternatives Eliminated from Further Consideration*. Table 1-1 shows a comparison of the impacts of the proposed PCCP Rehabilitation Program and the No Program Alternative. As shown in the table, the impacts would have similar or worse impacts for the No Program Alternative compared with those that would occur as a result of implementation of the proposed PCCP Rehabilitation Program.

The proposed PCCP Rehabilitation Program would allow for rehabilitation of the existing water conveyance and distribution system and associated infrastructure in a streamlined manner, thus ensuring the continued reliability and security of the water supply system. The proposed PCCP Rehabilitation Program, therefore, is considered to be the environmentally superior alternative. The No Program Alternative would not meet any of the program objectives identified by Metropolitan.

Table 1-1. Summary of Impacts

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Aesthetics		
Threshold AES-A: Have a Substantial Adverse Effect on a Scenic Vista	Less than significant	Similar
Threshold AES-B: Substantially Damage Scenic Resources, Including, but not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway	Less than significant	Similar

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Threshold AES-C: Substantially Degrade the Existing Visual Character or Quality of the Site and Its Surroundings	Less than significant	Similar
Threshold AES-D: Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area	Less than significant with mitigation	Similar or worse, if urgent repairs required nighttime work with lighting
Agriculture & Forestry Resources		
Threshold AGR-A: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) to Non-Agricultural Use	Less than significant	Similar
Threshold AGR-E: Involve Other Changes in the Existing Environment that, Because of Their Location or Nature, Could Result in the Conversion of Farmland to Non-Agricultural Use	Less than significant	Similar
Air Quality		
Threshold AQ-A: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Significant and unavoidable	Similar
Threshold AQ-B: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation	Significant and unavoidable	Similar
Threshold AQ-C: Result in a Cumulatively Considerable Net Increase in Any Criteria Pollutant for Which the Region Is in Non-Attainment under an Applicable Federal or State Ambient Air Quality Standard	Significant and unavoidable	Similar
Threshold AQ-D: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Significant and unavoidable	Similar
Biological Resources		
Threshold BIO-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 Wildlife or U.S. Fish and Wildlife Service	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts either by location or season
Threshold BIO-B: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-C: Have a Substantial Adverse Effect on Federally Protected Wetlands, as Defined by Section 404 of the Clean Water Act, through Direct Removal, Filling, Hydrological Interruption, or Other Means	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Threshold BIO-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	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-E: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold BIO-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	Potentially significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts either by location or season
Cultural Resources		
Threshold CUL-A: Cause a Substantial Adverse Change in the Significance of a Historical Resource	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or to fully implement mitigation to protect resources
Threshold CUL-B: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or to fully implement mitigation to protect resources
Threshold CUL-C: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or to fully implement mitigation to protect resources
Geology and Soils		
Threshold GEO-A.I: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault	Less than significant	Similar
Threshold GEO-A.II: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Strong Seismic Groundshaking	Less than significant	Similar

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Threshold GEO-A.III: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Seismically Related Ground Failure, Including Liquefaction	Less than significant	Similar
Threshold GEO-A.IV: Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Landslides	Less than significant	Similar
Threshold GEO-B: Result in Substantial Soil Erosion or the Loss of Topsoil	Less than significant	Similar
Threshold GEO-C: Be Located on a Geologic Unit or Soil that Is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse	Less than significant	Similar
Threshold GEO-D: Be Located on Expansive Soil, Creating Substantial Risks to Life or Property	Less than significant	Similar
Greenhouse Gas Emissions		
Threshold GHG-A: Generate Greenhouse Gas Emissions, either Directly or Indirectly, that May Have a Significant Impact on the Environment	Significant and unavoidable	Similar
Threshold GHG-B: Conflict with Any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	Less than significant	Similar
Hazards and Hazardous Materials		
Threshold HAZ-A: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials	Less than significant	Similar
Threshold HAZ-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	Similar
Threshold HAZ-C: Emit Hazardous Emissions or Involve Handling Hazardous or Acutely Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School	Less than significant with mitigation	Similar
Threshold HAZ-D: Be Located on a Site That Is Included on a List of Hazardous Materials Sites and, as a Result, Create a Significant Hazard to the Public or the Environment	Less than significant with mitigation	Similar
Threshold HAZ-E: For a Project Located within an Airport Land Use Plan or, Where Such Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard for People Residing or Working in the Project Area	Less than significant with mitigation	Similar

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Threshold HAZ-F: For a Project within the Vicinity of a Private Airstrip, Result in a Safety Hazard for People Residing or Working in the Project Area	No impacts	Similar
Threshold HAZ-G: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	Less than significant with mitigation	Similar or worse if urgent repairs prevent implantation of mitigation to avoid or reroute emergency routes and make advance notifications
Threshold HAZ-H: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Areas where Wildlands Are Adjacent to Urbanized Areas or where Residences Are Intermixed with Wildlands	Less than significant	Similar
Hydrology and Water Quality		
Threshold WQ-A: Violate Any Water Quality Standards or Waste Discharge Requirements	Less than significant	Similar
Threshold WQ-C: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, in a Manner that Would Result in Substantial Erosion or Siltation On or Off Site	Less than significant	Similar
Threshold WQ-D: Substantially Alter the Existing Drainage Pattern of the Site or Area, Including through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding On or Off Site	Less than significant with mitigation	Similar
Threshold WQ-E: 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	Less than significant	Similar
Threshold WQ-J: Expose People or Structures to Inundation by Seiche, Tsunami, or Mudflow	Less than significant	Similar
Land Use		
Threshold LU-A: Physically Divide an Established Community	Less than significant	Similar
Threshold LU-B: Conflict with Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect	Less than significant	Similar

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Noise		
Threshold NOI-A: Expose Persons to or Generate Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies	Significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or require nighttime work
Threshold NOI-B: Expose Persons to or Generate Excessive Groundborne Vibration or Groundborne Noise Levels	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold NOI-C: Result in a Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project	No impact	Similar
Threshold NOI-D: Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity, Above Levels Existing without the Project	Significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location or require nighttime work
Threshold NOI-E: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within 2 Miles of a Public Airport or Public Use Airport, Expose People Residing or Working in the Project Area to Excessive Noise Levels	Less than significant	Similar
Threshold NOI-F: For a Project within the Vicinity of a Private Airstrip, Expose People Residing or Working in the Project Area to Excessive Noise Levels	No impact	Similar
Recreation		
Threshold REC-A: Increase the Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such That Substantial Physical Deterioration of the Facilities Would Occur or Be Accelerated	Less than significant	Similar or worse, if urgent repairs prevent ability to avoid impacts by location
Threshold REC-B: Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities, Which Might Have an Adverse Physical Effect on the Environment	No impact	Similar

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Transportation and Traffic		
Threshold TRA-A: Conflict with an Applicable Plan, Ordinance, or Policy that Establishes Measures of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation, Including Mass Transit and Non-Motorized Travel, and Relevant Components of the Circulation System, Including, but not Limited to, Intersections, Streets, Highways and Freeways, and Pedestrian and Bicycle Paths	Significant and unavoidable	Similar or worse, if urgent repairs prevent ability to avoid impacts by location, planning and coordination with local jurisdictions, advance notifications, and provision of detours and adequate parking
Threshold TRA-B: Conflict with an Applicable Congestion Management Program, Including, but not Limited to, Level-of-Service Standards and Travel Demand Measures or Other Standards Established by the County Congestion Management Agency for Designated Roads or Highways	Less than significant	Similar
Threshold TRA-C: Result in a Change in Air Traffic Patterns, Including either an Increase in Traffic Levels or a Change in Location that Would Result in Substantial Safety Risks	Less than significant with mitigation	Similar or worse if urgent repairs occur in active runway areas
Threshold TRA-D: Substantially Increase Hazards Due to a Design Feature or Incompatible Uses	Less than significant with mitigation	Similar or worse if urgent repairs occur in locations resulting in hazardous condition
Threshold TRA-E: Result in Inadequate Emergency Access	Less than significant with mitigation	Similar or worse if urgent repairs affect emergency access
Threshold TRA-F: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities or Otherwise Decrease the Performance or Safety of Such Facilities	Less than significant with mitigation	Similar or worse, if urgent repairs prevent ability to avoid impacts by location and provision of detours
Utilities and Service Systems		
Threshold UTIL-A: Exceed Wastewater Treatment Requirements of the Applicable Regional Water Quality Control Board	Less than significant	Similar
Threshold UTIL-B: Require or Result in the Construction of New Water or Wastewater Treatment Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects	No impact	Similar
Threshold UTIL-C: Require or Result in the Construction of New Stormwater Drainage Facilities or the Expansion of Existing Facilities, the Construction of Which Could Cause Significant Environmental Effects	No impact	Similar

Environmental Resource Area	PCCP Rehabilitation Program Impacts	No Program Alternative Impacts
Threshold UTIL-D: Have Sufficient Water Supplies Available to Serve the Project from Existing Entitlements and Resources, or Are New and Expanded Entitlements Needed	No impact	Similar
Threshold UTIL-E: Result in a Determination by the Wastewater Treatment Provider that Serves or May Serve the Project that it Has Adequate Capacity to Serve the Project's Projected Demand in Addition to its Existing Commitments	No impact	Similar
Threshold UTIL-F: Be Served by a Landfill with Sufficient Permitted Capacity to Accommodate the Project's Solid Waste Disposal Needs	Less than significant	Similar
Threshold UTIL-G: Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste	Less than significant	Similar
Energy Conservation		
Threshold ENE-A: Use Energy in an Inefficient, Wasteful, or Unnecessary Manner	Less than significant	Similar

1.3 General Findings

1. The potential environmental impacts of the proposed program have been analyzed, and the public has been afforded the opportunity to submit comments pursuant to CEQA requirements.
2. Any significant impacts have been substantially lessened or avoided by the mitigation measures set forth in the Draft and Final PEIR.
3. No comments regarding the Draft PEIR were received during the public review period. One comment letter was received after the public review period. Responses to the comments in that letter were provided in Chapter 9 of the Final PEIR, *Responses to Comments*. No new significant effects were identified as a result of public comments, though minor changes to some mitigation measures were made to require consultation with the appropriate agencies. Impacts have been avoided or substantially lessened by the mitigation measures described in the Draft and Final PEIR.

1.4 Legal Effects of Findings

To the extent that these findings conclude that the proposed mitigation measures outlined in the Final PEIR are feasible and have not been modified, superseded, or withdrawn, Metropolitan hereby commits to implementing these measures. These findings, in other words, are not merely informational, but rather constitute a binding set of obligations that will come into effect when Metropolitan approves the proposed program.

The mitigation measures that are referenced in the MMRP and adopted concurrently with these findings will be effectuated through the process of construction and implementation of the proposed program.

1.5 Independent Review and Analysis

Under CEQA, the lead agency must (1) independently review and analyze the EIR; (2) circulate draft documents that reflect its independent judgment; (3) as part of the certification of an EIR, find that the report or declaration reflects the independent judgment of the lead agency; and (4) submit copies of the documents to the State Clearinghouse if there is state agency involvement or if the project is of statewide, regional, or area-wide significance (California Public Resources Code, Section 21082.1(c)).

Metropolitan independently reviewed and analyzed the PEIR and determined that it reflects its independent judgment. Moreover, upon completing this review and making this determination, Metropolitan circulated the Draft PEIR for public review. With the preparation of these findings for submittal to Metropolitan's Board of Directors for adoption, Metropolitan finds that this Final PEIR reflects its independent judgment.

1.6 References Cited

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act Guidelines, as amended.

California Public Resources Code, Sections 21000–21177. California Environmental Quality Act (CEQA), as amended.

Chapter 2

Mitigation Monitoring and Reporting Program

2.1 Introduction

The Mitigation Monitoring and Reporting Program (MMRP) for the proposed program has been prepared in accordance with Public Resources Code (PRC) Section 21081.6 and the California Environmental Quality Act (CEQA) Guidelines Section 15091(d). Metropolitan Water District (Metropolitan) will use this MMRP to track compliance with the program mitigation measures. Metropolitan's Board of Directors will consider the MMRP during the certification hearing for the Final Programmatic Environmental Impact Report (PEIR). The final MMRP will incorporate all mitigation measures adopted for the proposed program. Metropolitan makes the finding that the measures included in the MMRP constitute changes or alterations that avoid or substantially lessen the potentially significant environmental effects of the proposed project on the environment.

This MMRP summarizes mitigation commitments identified in the Prestressed Concrete Cylinder Pipe Rehabilitation Program Final PEIR. Table 2-1 provides the MMRP, which includes all mitigation measures, monitoring process, and monitoring timing. Metropolitan is the agency responsible for ensuring implementation of all mitigation measures. Impacts and mitigation measures are presented in the same order as in the Final PEIR. The columns in the table provide the following information:

- **Mitigation Measures:** The action(s) that will be taken to reduce the impact to a less-than-significant level or to the maximum extent feasible.
- **Timing of Implementation:** This column indicates the general schedule for conducting each monitoring task, either during the design phase, prior to construction, during construction, and/or after construction.
- **Implementation Party:** This column lists the party responsible for implementing the mitigation measure.

Table 2-1. Mitigation Monitoring and Reporting Program

Mitigation Measure(s)	Timing of Implementation	Implementing Party
4.1 Aesthetics		
MM AES-1: In order to prevent impacts related to spillover lighting into light-sensitive land uses, all safety and security lighting at construction work areas and staging areas will be directed downward and shielded to avoid light spilling over into residential areas.	Construction	Contractor
4.2 Agriculture and Forestry Resources¹		
None required.		
4.3 Air Quality		
MM AIR-1: All off-road diesel-powered construction equipment greater than 50 horsepower will meet Tier 4 emission standards. All construction equipment will be outfitted with ARB best available control technology devices. Any emissions-control device used by the contractor will achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. A copy of each unit's certified tier specification, best available control technology documentation, and ARB or SCAQMD operating permit will be provided to Metropolitan's Construction Inspector at the time of mobilization of each applicable unit of equipment.	Prior to Construction Construction	Contractor
4.4 Biological Resources		
MM BIO-1, Take of Special-Status Species: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas) and that contain special-status species, a qualified biologist will visit the site. If the biologist determines that special-status species may occur, preconstruction surveys for special-status plants and/or wildlife will be completed prior to any construction and consultation with the appropriate resource agency will occur (U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife), if necessary, to determine measures to address impacts such as avoidance, minimization, restoration, or compensation.	Prior to Construction	Metropolitan Qualified Biologist

¹ Impacts under CEQA thresholds b, c, and d for agriculture and forestry resources were determined to be less than significant in the Initial Study and were not addressed in the Programmatic EIR.

Mitigation Measure(s)	Timing of Implementation	Implementing Party
MM BIO-2, Impacts on Nesting Birds: For any projects within the program that require vegetation removal during the nesting season for sensitive species protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3513, including street trees and other landscaping, a qualified biologist will inspect the vegetation to be removed no more than 10 days prior to tree/vegetation removal to determine whether nesting birds are present. If a nest is found, the biologist will determine the site-specific measures necessary to avoid disturbing the nest until nesting activity has ceased. Nothing in this mitigation measure precludes the use of deterrent measures to prevent bird nesting.	Prior to Construction	Metropolitan Qualified Biologist
MM BIO-3, Adverse Impacts on Riparian Habitat: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) which contain riparian vegetation, a qualified biologist will visit the site to conduct pre-construction surveys. If the biologist determines that riparian vegetation is present, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken, including applying for appropriate regulatory permits, as required.	Prior to Construction	Metropolitan Qualified Biologist
MM BIO-4: Adverse Impacts on Sensitive Natural Communities: Removal of or adverse impacts on sensitive natural communities will be minimized for rehabilitation projects in the program, except in accordance with adopted HCPs/NCCPs to which Metropolitan is a party for covered areas and covered activities. For such covered activities, Metropolitan will coordinate with the appropriate resource agencies, and Metropolitan's contractors will adhere to all requirements in the applicable plan. For any activities not covered by an adopted HCP/NCCP, the following shall apply: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (except for landscaped developed areas) and that contain sensitive natural communities, a qualified biologist will conduct pre-construction surveys for sensitive natural communities prior to any construction. These surveys will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. If sensitive natural communities are located during the surveys, then habitat areas will be mapped and flagged for avoidance, or other measures will be taken including applying for appropriate regulatory permits, as required.	Prior to Construction	Metropolitan Qualified Biologist

Mitigation Measure(s)	Timing of Implementation	Implementing Party
MM BIO-5, Adverse Impacts on Wetlands: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 100 feet of unpaved areas (including large landscaped areas, parks, and golf courses), which contain wetlands, a qualified biologist will visit the site to conduct pre-construction surveys. If the biologist determines that wetlands may be present, preconstruction wetlands jurisdictional delineations will be performed prior to any construction. These delineations will be conducted by a qualified biologist within 100 feet of ground-disturbing activities. Any jurisdictional wetlands located during the delineations will be mapped and flagged for avoidance or other measures may be taken, including applying for appropriate regulatory permits, as required.	Prior to Construction	Metropolitan Qualified Biologist
MM BIO-6, Impacts on Wildlife Movement: For any projects within the program that require vegetation removal, ground disturbance of unpaved areas, parking or staging of equipment or material on unpaved areas, access routes on unpaved areas, or any rehabilitation or construction staging within 300 feet of unpaved areas (except for landscaped developed areas), a qualified biologist will visit the site to determine if any identifiable wildlife movement corridors are present at the site. If the biologist determines that such corridors are present, then wildlife movement corridors will be mapped, flagged, and avoided, or other measures will be taken to protect wildlife movement, as appropriate.	Prior to Construction	Metropolitan Qualified Biologist
MM BIO-7, Conflicts with Local Policies Related to Biological Resources: For any projects within the program that require vegetation removal, Metropolitan will determine if there are any applicable local policies related to biological resources and, if so, coordinate with the affected jurisdiction, as necessary, to determine appropriate requirements for vegetation removal and replacement. The contractor will be required to comply with any applicable requirements. Nothing in this mitigation will require the contractor to make improvements beyond the existing condition prior to construction.	Prior to Construction	Metropolitan Contractor
4.5 Cultural Resources		
MM CUL-1, Historic Resources Protection Program: To avoid impacts on built environment (historic) resources, prior to any rehabilitation involving excavation or concrete cutting, a qualified cultural resource specialist will determine whether there are any identified or eligible historical resources present and whether proposed construction activities could adversely affect these resources. If any resources could be adversely affected by construction, measures will be taken to prevent adverse impacts on the resource, as determined by the qualified cultural resource specialist.	Design Phase Prior to Construction	Metropolitan Qualified Cultural Resource Specialist

Mitigation Measure(s)	Timing of Implementation	Implementing Party
<p>MM CUL-2, Avoidance or Monitoring of Archaeological Sites: To avoid impacts on archaeological sites, prior to construction of any program element, such as pipeline alignments, construction staging areas, laydown areas, or relocation of pipelines in new alignments, a new record search will be conducted to determine if additional sites or resources have been recorded on or adjacent to the proposed construction section. Reports will be examined to determine the condition of each site when recorded, if the site has been evaluated, and if destruction of the site is documented. Following this review, recorded archaeological sites that are within the pipeline route will be surveyed and their present conditions assessed (see MM CUL-4). Archaeological monitoring will be required during construction-related ground-disturbing activities if within the recorded area of a significant or potentially significant site and for a 50-foot buffer beyond the site boundary. A Native American monitor may be present if the site is prehistoric. If archaeological materials are discovered during monitoring, procedures outlined in MM CUL-4 will be implemented.</p> <p>If it can be demonstrated that the site has been destroyed by previous construction or other actions and there is no potential for other buried parts of the site within the construction area, or if the site has been evaluated and determined not eligible for the California Register of Historical Resources (CRHR), then monitoring will not be required.</p>	<p>Prior to Construction</p> <p>Construction</p>	<p>Metropolitan</p> <p>Qualified Archaeologist/ Native American Monitor</p>
<p>MM CUL-3, Preconstruction Meeting for Identifying Cultural Resources: To avoid impacts on previously unidentified cultural resources, all construction personnel will attend a preconstruction meeting that includes a discussion of cultural resources. The meeting will inform construction personnel on how to identify potential cultural resources during ground-disturbing activities and what to do if such potential resources are encountered.</p>	<p>Prior to Construction</p>	<p>Metropolitan</p> <p>Contractor</p> <p>Qualified Cultural Resource Specialist</p>
<p>MM CUL-4, Previously Unidentified Resources Encountered during Ground-disturbing Activities: In the event that any potentially significant cultural resources are unexpectedly encountered during construction, work will be immediately halted and the discovery shall be protected in place. The contractor will halt construction within 50 feet of the exposed resource until a qualified cultural resources specialist evaluates the discovery.</p> <p>If the qualified cultural resources specialist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. This additional work may include avoidance, testing, and evaluation or data recovery excavation. Work shall be prohibited in the restricted area until Metropolitan provides written authorization.</p>	<p>Construction</p>	<p>Metropolitan</p> <p>Contractor</p> <p>Qualified Cultural Resources Specialist</p>

Mitigation Measure(s)	Timing of Implementation	Implementing Party
MM CUL-5, Archaeological Survey of Non-Pipeline Areas: Prior to rehabilitation activities of any program element, each area will be subject to pedestrian survey for archaeological resources by a professional archaeologist retained by Metropolitan if ground-disturbing activities are slated to occur. If archaeological sites are recorded or found in these affected areas, the sites will be avoided to the greatest extent feasible. If a site cannot be avoided, site testing and evaluation by a professional archaeologist will be required. This may require test excavations, artifact analysis, evaluation for the CRHR and review by the State Historic Preservation Officer, and possibly data recovery excavation and reporting.	Prior to Construction	Metropolitan Qualified Archaeologist
MM CUL-6, Develop a Program to Mitigate Impacts on Paleontological Resources for Each Contract Package: In order to avoid impacts on paleontological resources, the following mitigation program will be implemented for each contract package. This mitigation program will be conducted by a qualified professional paleontologist and will be consistent with the provisions of CEQA. This program will include the following: <ol style="list-style-type: none"> 1. Assessment of site-specific excavation areas to determine those areas that may be designated as highly sensitive for unique paleontological resources to be monitored during ground disturbance. 2. In these designated areas, if any, paleontological resources monitors qualified to Society of Vertebrate Paleontology standards will be equipped to salvage fossils as they are unearthed and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitoring may be reduced or eliminated if some of the potentially fossiliferous units are determined upon exposure and examination by qualified paleontological resources personnel to have low potential to contain fossil resources. Also in these designated areas, all unique paleontological resources, if any, will be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates. 3. Unique paleontological resources, if any, will be identified and curated into an established, accredited museum repository. 4. Preparation of a report of findings including a summary of field work and laboratory methods, an overview of the program work area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, a copy of the report will also be submitted to the designated museum repository. 	Prior to Construction Construction	Metropolitan Contractor Qualified Paleontologist

Mitigation Measure(s)	Timing of Implementation	Implementing Party
4.6 Geology and Soils²		
None required.		
4.7 Greenhouse Gas Emissions		
MM-AIR-1: (see above, under 4.3, Air Quality)		
4.8 Hazards and Hazardous Materials		
MM HAZ-1, Project-Level Hazardous Materials Sites Assessment Prior to Construction Activities: To avoid exposure of construction workers, the public, or the environment to previously identified hazardous materials, during design, qualified Metropolitan staff or consultant(s) specializing in hazardous materials impact assessment will conduct a project-level analysis to determine if there are existing hazardous materials sites in the vicinity of the construction site and potential for existing hazardous materials sites to affect construction. This assessment will consist of a search for environmental-related information present in publicly accessible databases. The information will be reviewed to determine if the construction footprint or adjacent properties are listed in the databases. If the construction footprint or adjacent properties are listed in the databases, qualified Metropolitan staff or consultant(s) will determine the potential risk to construction workers, the public, or the environment from rehabilitation activities and identify all necessary avoidance, abatement, remediation, cleanup, disposal, monitoring, reporting, notifications, and/or other measures to prevent significant impacts.	Prior to Construction	Metropolitan Environmental Consultant (Hazardous Waste)
MM HAZ-2, Encountering Unreported Hazardous Materials: To avoid exposure of construction workers, the public, or the environment to unreported hazardous materials in the soil, contractors will be required to inspect any site to be used for excavation, work zones, staging, or other rehabilitation-related activities prior to beginning construction. If odiferous, stained, or discolored soil is encountered, qualified Metropolitan staff or consultant(s) specializing in the identification and handling of hazardous materials will be retained to assess the site. Identification of possible hazardous materials would typically involve soil samples and laboratory analysis. The suspect soil will be isolated, covered, and avoided by construction personnel until analytical results are reviewed by qualified personnel. Soils identified as hazardous or contaminated will be handled, transported, and treated in accordance with all federal, state, and local existing hazardous materials regulations.	Prior to Construction Construction	Metropolitan Contractor Environmental Consultant (Hazardous Waste)

² Impacts under CEQA threshold e for geology and soils were determined to be less than significant in the Initial Study and were not addressed in the Programmatic EIR.

Mitigation Measure(s)	Timing of Implementation	Implementing Party
MM HAZ-3, Engineering Controls and Best Management Practices during Construction: To minimize human exposure to potential contaminants, during construction contractors will employ the use of engineering controls and best management practices (BMPs). Engineering controls and construction BMPs will include, but are not limited to, the following: <ul style="list-style-type: none"> Contractor employees working on site handling hazardous materials on contaminated media will be certified in the Occupational Health and Safety Administration's 40-hour Hazardous Waste Operations and Emergency Response training. Contractors will water or mist soil as it is being excavated and stockpiled or loaded onto transportation trucks. 	Construction	Contractor
MM HAZ-4, Encountering Contaminated Groundwater: To avoid exposure of construction workers, the public, or the environment to contaminated groundwater, suspect water removed from excavation areas (but not including dewatering of the pipelines themselves) will be tested by a qualified laboratory specializing in the identification of hazardous materials. If groundwater is considered hazardous, Metropolitan will notify the Regional Water Quality Control Board and local Environmental Health agencies regarding assessment and remediation requirements.	Construction	Contractor Environmental Consultant (Hazardous Waste)
MM HAZ-5, Construction Activities within Runway Protection Zones: During the design phase for any projects in the program within the runway protection zones for Long Beach Municipal Airport or Van Nuys Airport (even where all construction would be accessed from outside the runway protection zones), project engineers will coordinate with the management of Long Beach Municipal Airport (Second Lower Feeder) or Van Nuys Airport (Sepulveda Feeder), as appropriate, to determine the methods of construction that will be necessary to avoid impacts on airport operations and safety. All operations and safety requirements of the airports will be incorporated into the construction design packages. All necessary requirements will be implemented during construction.	Design Phase Prior to Construction Construction	Metropolitan
MM HAZ-6, Aboveground Elements in Runway Protection Zones: To avoid airport operations and safety impacts, no permanent aboveground elements of the proposed program, such as manhole covers, valve boxes, or electrical panels, will be located within runway protection zones (at Long Beach Municipal Airport for the Second Lower Feeder and Van Nuys Airport for the Sepulveda Feeder) without prior approval of the management of the appropriate airport.	Design Phase Prior to Construction	Metropolitan

Mitigation Measure(s)	Timing of Implementation	Implementing Party
MM HAZ-7, Maintaining Emergency/Evacuation Routes: To avoid impacts on emergency/evacuation routes, excavation sites will typically not be placed in roadways that serve as designated emergency/evacuation routes. If such streets cannot be avoided, the contractor will work with the local jurisdiction responsible for the emergency/evacuation routes to maintain adequate capacity. This will be accomplished by utilizing unused portions of the street right-of-way for travel lanes (such as temporarily prohibiting parking, restriping medians or parkway space, or detouring bike lanes) or by detouring the emergency/evacuation route to other roadways during construction. If detours are necessary, appropriate notification of emergency personnel and temporary signage will be used to direct emergency/evacuation traffic during construction.	Design Phase	Metropolitan
	Prior to Construction	Contractor
	Construction	
4.8 Hydrology and Water Quality³		
MM HYD-1, Implementation of a Grading and Drainage Plan: Prior to construction of aboveground project facilities, Metropolitan will prepare a grading and drainage plan that identifies anticipated changes in flow that would occur on site and minimizes any potential increases in flooding, erosion, or sedimentation potential in accordance with applicable regulations and in coordination with the county and/or the city in which the facility would be located. The plan will identify and implement best management practices and other measures to ensure that potential increases in stormwater flows and erosion are minimized.	Prior to Construction	Metropolitan
	Construction	Contractor

³ CEQA thresholds b, g, h, and i for hydrology and water quality were determined to be less than significant in the Initial Study and were not addressed in this PEIR.

Mitigation Measure(s)	Timing of Implementation	Implementing Party
4.1 Land Use⁴		
None required.		
4.11 Noise		
MM NOI-1, Locate Excavation Sites Away From Vibration-Sensitive Uses: A noise and vibration consultant will be retained during excavation site planning to determine if there are vibration-sensitive land uses that could be affected by construction. Whenever possible, excavation sites will then be located so that vibration impacts would not affect vibration-sensitive land uses or mitigation would be included to reduce vibration levels at vibration-sensitive land uses to less-than-significant levels.	Design Phase	Metropolitan Noise/Vibration Consultant
MM NOI-2, Locate Excavation Sites Away From Noise-Sensitive Receptors Where Feasible: A noise consultant will be retained during excavation site planning to determine if there are sensitive receptors that could be affected by construction. Whenever possible, the excavation sites will be located in areas that would not affect sensitive receptors or where receptors can be shielded from construction noise.	Design Phase	Metropolitan Noise/Vibration Consultant
MM NOI-3, Conduct Project-Level Noise Studies at Each Excavation Site Where Noise-Sensitive Receptors Are Present: Project-level noise studies will be required at all excavation sites where sensitive receptors are present, as required in the planning stage by MM NOI-2. Such noise studies will identify the ambient noise levels, the receptors that would be affected, the noise levels the receptors will experience during construction, and any measures that can be used to reduce noise levels. All feasible mitigation measures identified in this noise study will be implemented.	Environmental Phase	Metropolitan Noise/Vibration Consultant
MM NOI-4, Locate Staging Areas Away from Noise-Sensitive Receptors or Provide Noise Attenuation: Whenever feasible, staging areas will be located in areas that would not affect sensitive receptors or where receptors can be shielded from staging-area noise. Where possible, noise screening will include temporary noise barriers with openings in the barriers kept to the minimum necessary for access.	Prior to Construction Construction	Metropolitan Contractor

⁴ For threshold c for land use, see Threshold BIO-F in Section 4.4, *Biological Resources*.

Mitigation Measure(s)	Timing of Implementation	Implementing Party
4.12 Recreation		
None required.		
4.13 Transportation and Traffic		
<p>MM TRA-1, Excavation Siting to Minimize Traffic Impacts: Excavation sites would be located to avoid traffic impacts to the maximum extent feasible, considering the logistical requirements for pipeline rehabilitation (e.g., adequate spacing, pipeline logistics) and other impacts such as habitat and noise. To the maximum extent feasible, the following will be considered when locating excavation sites:</p> <ul style="list-style-type: none"> • Whenever feasible, where an off-road excavation site is available that would not result in other significant environmental impacts (e.g., to habitat, land uses), the off-road location will be used. • Whenever feasible, excavation sites in roadways will be situated within medians where available and feasible, especially if the medians are not used for left-turn lanes and do not include large street trees or other features that would be difficult to restore after rehabilitation. • Whenever feasible, excavation sites will be situated where the existing number of travel lanes can be maintained by temporarily removing parking (where adequate parking is available in the local area), temporarily relocating bike lanes to adjacent roadways, or temporarily restriping to provide narrower lanes (where they can be safely accommodated). • Whenever feasible, excavation sites will be situated so that adequate access to adjacent properties can be maintained, including left-turn entrances. • Whenever feasible, excavation sites will be situated so that bicycle and pedestrian circulation can be safely maintained, either by use of barriers or other safety features, or by providing alternative bicycle and pedestrian routes, with appropriate signage. Where feasible, siting excavation near heavily used pedestrian areas, such as around schools, hospitals, and transit stops, will be avoided. Where feasible, siting excavation in areas designated as safe routes to school will be avoided, or alternative routes will be developed in coordination with the local jurisdictions and school districts and providing appropriate signage, notification, and traffic controls. 	<p>Design Phase</p> <p>Prior to Construction</p> <p>Construction</p>	<p>Metropolitan</p> <p>Contractor</p>

Mitigation Measure(s)	Timing of Implementation	Implementing Party
MM TRA-2, Construction Traffic Control Plans: Metropolitan and/or its contractors will coordinate with the counties of Los Angeles, Orange, and San Bernardino as well as each local jurisdiction through which the pipelines travels to develop construction traffic control measures and procedures prior to the start of construction on each project. Measures to reduce temporary construction traffic and transportation impacts on city streets may include, but not be limited to, the following: <ul style="list-style-type: none"> • Development of traffic control plans in coordination with local jurisdictions. The traffic control plans will be implemented and revised, as necessary and applicable. • Provision of advance written notification of construction activities to residences and businesses around each construction site. • Identification of travel routes and establishment of optimal arrival and departure times to minimize conflicts with residents, schools, and businesses, as feasible to minimize conflicts. • Provisions to detour pedestrians and bicyclists from project activities near or on the sidewalks and bike lanes. • Implementation of safety measures, such as signs, flaggers, cones, signage, and advance notice, as appropriate. • Covering of all open trenches when not in use or at the end of each work day, as applicable. 	Design Phase	Metropolitan
	Prior to Construction	Contractor
	Construction	
MM TRA-3, Maintaining Adequate Parking: Whenever feasible, excavation work zones and construction staging areas will not be sited in such a way that they result in inadequate availability of parking for adjacent land uses. If work zones or staging areas are planned for parking areas, a parking study will be completed by a qualified traffic consultant prior to construction to identify if adequate parking would be available locally.	Design Phase	Metropolitan
	Prior to Construction	Contractor
	Construction	Traffic Consultant
MM HAZ-5: (see above in 4.8, Hazards and Hazardous Materials). MM HAZ-6: (see above in 4.8, Hazards and Hazardous Materials). MM HAZ-7: (see above in 4.8, Hazards and Hazardous Materials).		
4.14 Utilities and Service Systems		
None required.		
4.15 Energy Conservation		
None required.		

2.2 References Cited

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act Guidelines, as amended.

California Public Resources Code, Sections 21000–21177. California Environmental Quality Act (CEQA), as amended.

Chapter 3

Statement of Overriding Considerations

When a proposed project results in significant, unavoidable adverse impacts, CEQA requires the decision-making body of the Lead Agency to weigh the benefit of the proposed project against such environmental impacts in determining whether or not to approve the proposed project (*State CEQA Guidelines* Section 15043). In making this determination, the Lead Agency is guided by the *State CEQA Guidelines* Section 15093, which states:

CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered “acceptable.”

When the Lead Agency approves a project that will result in the occurrence of significant effects that are identified in the Final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the Final EIR and/or other information in the record. The Statement of Overriding Considerations shall be supported by substantial evidence in the record.

If an agency makes a Statement of Overriding Considerations, the statement should be included in the record of the project approval and should be mentioned in the notice of determination. This statement does not substitute for, and shall be in addition to, Findings required pursuant to Section 15091.

In addition, PRC Section 21081(b) requires that when a public agency finds that economic, legal, social, technological or other reasons make infeasible the mitigation measures or alternatives identified in the EIR and the project thereby continues to have significant unavoidable adverse impacts, the public agency must also find that specific overriding economic, legal, social, technological or other benefits of the project outweigh those significant unavoidable impacts of the project.

The Final Programmatic EIR identified one alternative to the proposed program: the No Program Alternative. This alternative was evaluated to the extent to which it met the basic program objectives, while avoiding or substantially lessening any significant adverse impacts of the proposed program.

By statute, if the environmentally superior alternative is the No Project Alternative, an EIR must also identify an environmentally superior alternative among the other alternatives. The reasons detailed in the Findings and the Programmatic EIR (Chapter 5 of the Final Programmatic EIR) indicate the proposed program would have similar or lesser impacts than the No Program Alternative. The sections below explain the overriding considerations Metropolitan relied on in selecting the proposed program rather than the No Program Alternative.

3.1 Significant and Unavoidable Impacts

3.1.1 Air Quality

Based on the information and analysis set forth in the Final Programmatic EIR and the record of proceedings, implementation of the proposed program would result in temporary significant impacts related to air quality. Significant and unavoidable short-term emissions of air pollutants would be emitted as a result of rehabilitation activities stemming from the use of construction equipment (primarily diesel-powered), haul and materials vehicle trips, and fugitive dust. Pollutants would exceed the daily regional mass emissions thresholds as well as the localized significance thresholds identified by the South Coast Air Quality Management District (SCAQMD) and would be significant. Following the implementation of Mitigation Measure MM AIR-1, the regional mass emissions would still exceed the SCAQMD regional mass emissions thresholds for carbon monoxide (CO) and nitrogen oxides (NO_x), but would no longer exceed the localized significance thresholds. Thus, the program would violate an air quality standard or contribute substantially to an existing or projected air quality violation, result in a cumulatively considerable net increase in any criteria pollutant for which the region is in non-attainment, and expose sensitive receptors to substantial pollutant concentrations. No additional feasible mitigation measures are available that would reduce temporary air quality impacts to less than significant levels. Impacts would be significant and unavoidable.

3.1.2 Biological Resources

Based on the information and analysis set forth in the Final Programmatic EIR and the record of proceedings, rehabilitation activities have the potential to result in impacts on protected species. Migratory birds, including most birds that nest in the study area, are protected by the federal Migratory Bird Treaty Act, which makes it unlawful to take, possess, import, export, transport, sell, barter, or offer for sale any migratory bird, or the parts, nests or eggs of any bird. In addition, California Fish and Game Code Section 3503 makes it unlawful to take, possess, or needlessly destroy nests or eggs of any bird. Where vegetation, and especially trees, is removed as part of construction, there is the potential for violations under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code, which would be a significant impact, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-2 may reduce this impact, but potentially not to a less-than-significant level.

Various rehabilitation activities could affect riparian habitats and other sensitive natural communities. Vegetation clearing, excavation, materials storage, traffic, and other activities could remove habitat and result in temporary impacts to runoff and/or water quality, potentially affecting habitat; air quality impacts (dust, exhaust) could affect adjacent habitat; and construction-related traffic could introduce hazardous materials into habitats. These effects could result in potentially significant impacts on riparian habitats or sensitive natural communities, but the level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measures MM BIO-3 and MM BIO-4 may reduce these impacts, but potentially not to less-than-significant levels.

Various rehabilitation activities could also affect wetlands, if present near work areas. Any of these effects could result in significant impacts on wetlands, but the level of impact would need to be

determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-5 may reduce these impacts, but potentially not to less-than-significant levels.

In addition, various rehabilitation activities could affect wildlife movement and dispersal in the vicinity of construction. The level of impact would need to be determined at the project level when rehabilitation locations are known. Implementation of Mitigation Measure MM BIO-6 may reduce these impacts, but potentially not to less-than-significant levels.

Certain construction and maintenance activities are allowed under the Shell E&P and Metropolitan Habitat Conservation Plan (HCP) and Central and Coastal Natural Communities Conservation Plan (NCCP)/HCP, and would be allowed under the proposed North Fontana Multiple Species Habitat Conservation Plan (covered activities). However, the types of construction for the proposed program that would occur within the covered lands are not known at this time. Therefore, construction could be inconsistent with the requirements of these plans, which would be a significant impact. Without knowing the location or type of rehabilitation activities in the covered lands, the level of impact and mitigation measures to address these impacts cannot be determined at this time. Also, it cannot be determined if impacts could be reduced to less-than-significant levels with mitigation. Therefore, impacts related to conflicts with the adopted Shell E&P and Metropolitan HCP and Central and Coastal NCCP/HCP and the proposed North Fontana Multiple Species Habitat Conservation Plan may be potentially significant and unavoidable. Additional project-specific analysis will be required for rehabilitation activities within the covered lands for these plans.

For the purposes of this Programmatic EIR, the impacts identified above related to biological resources would be considered significant and unavoidable.

3.1.3 Greenhouse Gas Emissions

Based on the information and analysis set forth in the Final Programmatic EIR and the record of proceedings, program-related rehabilitation activities would result in greenhouse gas (GHG) emissions from fuel combustion associated with on- and off-road construction equipment and vehicles. Emissions associated with construction would result in amortized annual emissions of just over 4,700 metric tons, which exceeds the SCAQMD interim threshold of 3,000 metric tons. As such, impacts would be significant. With the implementation of Mitigation Measure MM AIR-1, impacts would be reduced, but would remain significant. Impacts would be significant and unavoidable.

3.1.4 Noise

Based on the information and analysis set forth in the Final Programmatic EIR and the record of proceedings, noise levels during rehabilitation activities, specifically during excavation and concrete sawing, would likely reach very high levels, generally exceeding any noise-level restrictions set by some local jurisdictions. Because of the type of construction and its location, there is no effective mitigation that would reduce this impact below a level of significance. Therefore, impacts related to exposing persons to, or generating, noise levels in excess of standards would be significant, at least at some locations. Implementation of Mitigation Measures MM NOI-2 through MM NOI-4 would reduce impacts, but not to a less-than-significant level at all locations. Impacts would be significant and unavoidable.

3.1.5 Transportation/Traffic

Based on the information and analysis set forth in the Final Programmatic EIR and the record of proceedings, during the course of the pipeline rehabilitation work, work zones would be established within existing roadways, requiring lane closures, temporary signage, traffic cones and delineators, fencing, and barriers (i.e., concrete trapezoidal “K rail,” or Caltrans Temporary Type K railing). Where work zones are located within streets, temporary impacts on transportation would occur, including increased congestion and travel times, reduced access, and impacts on transit operations, bike routes, and pedestrian routes. The disruption of local and regional traffic caused by capacity reduction would be significant at some locations, but the level will need to be determined at the project level when rehabilitation locations are known. Analysis to determine the individual projects’ impacts on vehicle miles traveled and/or level of service may be required. Implementation of Mitigation Measure MM TRA-1 would reduce these impacts in some locations, but would not be feasible in all circumstances. Therefore, impacts on local and regional transportation may be significant and unavoidable. Impacts would be significant and unavoidable.

3.2 Project Benefits

In September 2011, Metropolitan’s Board authorized initiation of the PCCP Rehabilitation Program in order to develop a comprehensive, long-term plan for repair of Metropolitan’s at-risk PCCP feeders. There were several drivers for the creation of this program: (1) the increasing number of failures of PCCP lines within the water industry, along with recognition of the risks associated with these failures; (2) trends of PCCP deterioration within Metropolitan’s distribution system, based on monitoring data collected over a 14-year period; and (3) Metropolitan’s experience with expensive, urgent repairs on PCCP lines. Based on this experience and on a risk assessment of Metropolitan’s PCCP lines, staff concluded that approximately 100 miles of PCCP will have a reduced service life and need to be rehabilitated, especially in comparison with pipelines made of other materials.

As discussed in Chapter 3 of the Final Programmatic EIR, the following objectives of the proposed program would be achieved through program implementation:

- Reduce the risk of unplanned outages
- Extend the service life of the pipelines
- Perform the rehabilitation work in a cost-effective manner
- Minimize the effects of rehabilitation efforts on Member Agency deliveries
- Minimize the loss of hydraulic capacity due to rehabilitation
- Improve system operational and emergency flexibility

The pipelines identified for repair in the proposed program deliver drinking water to about 19 million people in Southern California. Rehabilitation of the deteriorating prestressed concrete cylinder portions in these pipelines would preserve this conveyance function and reduce the risk of pipeline failure, minimize repair costs and prevent unplanned shutdowns of the pipelines.

3.3 Statement of Overriding Considerations

After balancing the specific economic, legal, social, technological, and other benefits of the proposed program, Metropolitan has determined that the significant and unavoidable adverse environmental impacts identified above may be considered “acceptable” due to the specific program benefits that outweigh the significant and unavoidable adverse environmental impacts of the proposed program.

Metropolitan has considered information contained in the Final Programmatic EIR, as well as comments received from public agencies and interested parties during the public review period. In addition, Metropolitan commits to the proposed mitigation measures and acknowledges that program benefits outweigh the few significant and unavoidable, temporary adverse impacts identified above. In making this determination and commitment, Metropolitan incorporates by reference the Findings and the proposed Mitigation Monitoring and Reporting Program, as well as all of the supporting evidence cited therein and in the record of proceedings and administrative record.



PCCP Rehabilitation Valve & Equipment Storage Building

Engineering and Operations Committee

Item 7-5

February 7, 2022

Current Action

- Review and consider Addendum No. 4 to the 2017 Programmatic Environmental Impact Report
- Award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of the prestressed concrete cylinder pipe (PCCP) Rehabilitation valve and equipment storage building

Distribution System



Location Map



Background

- \$23M contract awarded in 2018 to furnish 13 conical plug isolation valves for future PCCP Rehabilitation Program projects
- Long-term storage for these valves needed



Two 48" conical plug valve bodies



Temporary valve storage at Weymouth

Alternatives Considered

- Use potentially available storage spaces within Metropolitan's existing facilities
- Lease warehouse to store all the valves
 - Requires facility to be accessible
 - Lease options limited due to valve crates weight (35 tons)
- Plan a larger La Verne Warehouse Storage Replacement building
 - Project will not be completed until 2028
- Selected Option - Construct the storage building at Lake Mathews
 - Provides for timely storage of valves/equipment
 - Long-term cost savings
 - Provides maximum flexibility for all future storage needs

Contractor Scope

- Perform site grading and paving
- Construct concrete foundation suitable for equipment weights
- Furnish and erect 18,200 sq ft pre-engineered metal building with motorized roll-up doors
- Install fire protection system
- Tie in building to site's existing power supply



Metropolitan Scope

- Clear site prior to start of construction contract
- Provide electrical shutdown support
- Perform construction inspection and survey control
- Perform submittal review, respond to requests for information, and prepare record drawings
- Perform project management and contract administration

Bid Results

Specifications No. 2013

Bids Received	December 16, 2021
No. of Bidders	7
Low Bidder	Facility Builders & Erectors, Inc.
Low Bid	\$4,759,000
Range of Higher Bids	\$4,883,000 to 5,640,000
Engineer's estimate	\$7,000,000
SBE Participation*	46%

*SBE (Small Business Enterprise) participation level set at 20%

Allocation of Funds

Contract	\$4,759,000
Metropolitan Labor	
Program mgmt. & contract admin.	534,000
Force Construction	90,000
Const. Inspection	582,000
Submittal review & record drwgs.	372,000
Professional Services	
Helix Group, Inc. (Environmental)	165,000
Lee & Ro, Inc. (Engineering)	269,000
Remaining Budget	329,000
<hr/>	
Total	\$7,100,000

Project Schedule



Board Action



Completion of
Construction



Construction

Board Options

- Option #1
 - Review and consider Addendum No. 4 to the 2017 Programmatic Environmental Impact Report; and Award \$4,759,000 contract to Facility Builders & Erectors, Inc. for construction of the PCCP Rehabilitation Valve and Equipment Storage Building.
- Option #2
 - Do not proceed with the project at this time.

Staff Recommendation

- Option #1





Metropolitan's Health and Safety Program Update

Engineering & Operations Committee

Item 6a

February 7, 2022

Health and Safety Program



Management Commitment



2021 Initiatives Update



COVID-19 Response



2022 Key Focus Areas

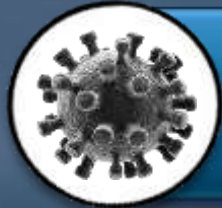
Health and Safety Program



Management Commitment



2021 Initiatives Update



COVID-19 Response



2022 Key Focus Areas

Collaborative Approach to Success



Protecting Our Most Valuable Asset Employees!



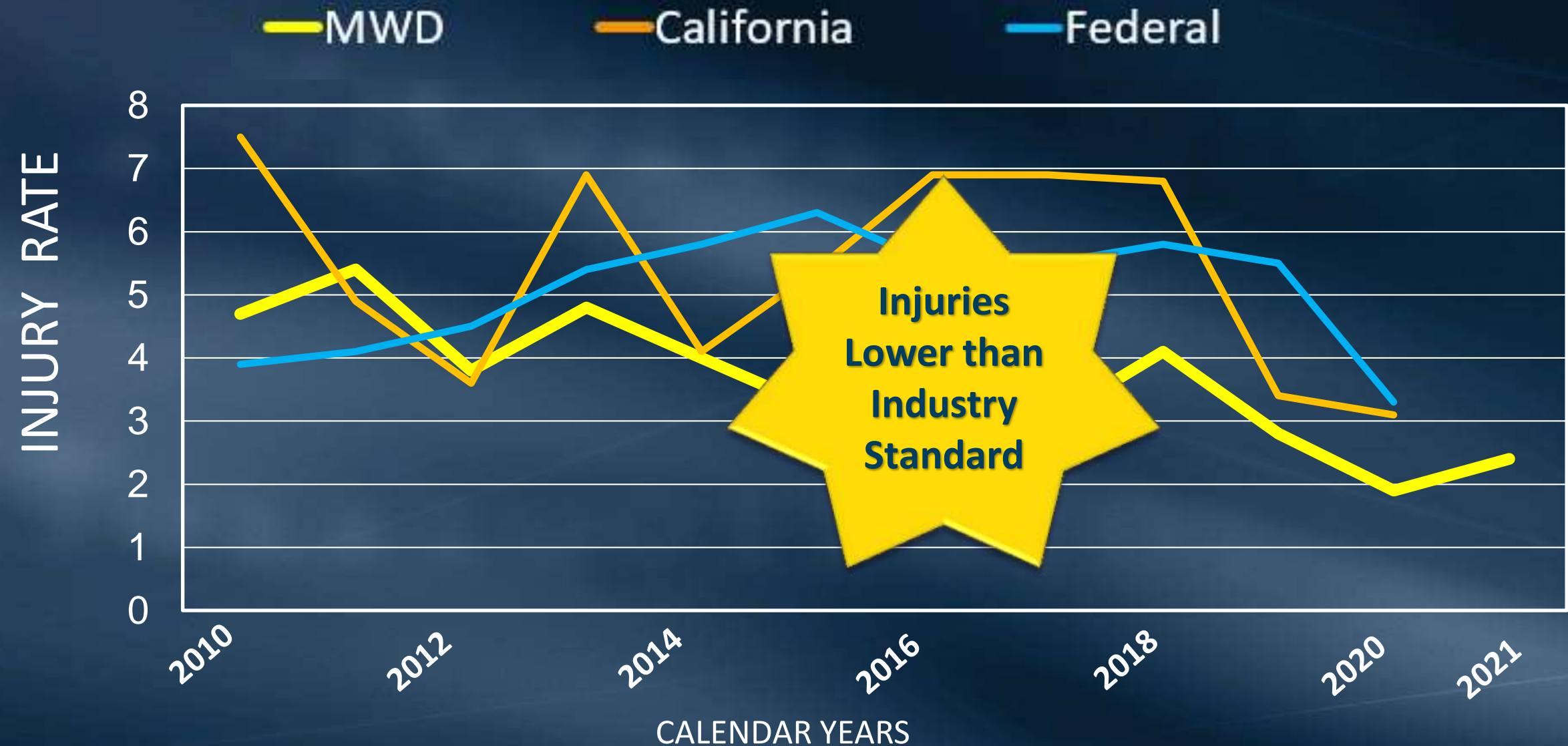
Safety is Essential



**SAFETY
FIRST**

**ZERO
INJURIES**

Metropolitan's Injury Rate vs Industry Average



Health and Safety Program



Management Commitment



2021 Initiatives Update



COVID-19 Response



2022 Key Focus Areas

2021 Initiatives Update

- Enhance Metropolitan's Safety Culture
- Further Partnership Between Safety and Engineering
- Improve Emphasis on Leading Indicator Performance Goals
- Strengthen Partnership with Employees and Bargaining Units
- Conduct Third-Party Safety Program Assessment





Initiative - Enhancing Safety Culture

- Celebration of 25th Anniversary National Safety Month
 - “Safety is Essential” Theme
 - Brown Bag Safety Webinar
 - Employee T-Shirt Design Contest
- Safety Awareness Resources
 - Employee-Designed Safety Posters
 - New Safety Talks
 - “Speak Up for Safety” Campaign



Celebrating June “National Safety Month” 25th Anniversary



- Partnership between WSO, External Affairs and Human Resources with “Safety is Essential” theme
- Kickoff Memo from the General Manager with a Safety Awareness Quiz (for a free T-shirt)
- Employee T-Shirt Design Contest - (50 entries)
- Brown Bag Safety Webinar with Trudi DesRoches (Diemer), Gary Syfers (Mills), and Mike Patel (US)



“National Safety Month” T-Shirt Design Contest

Winning T-Shirt Designed by Chad Bonnett (Mills)



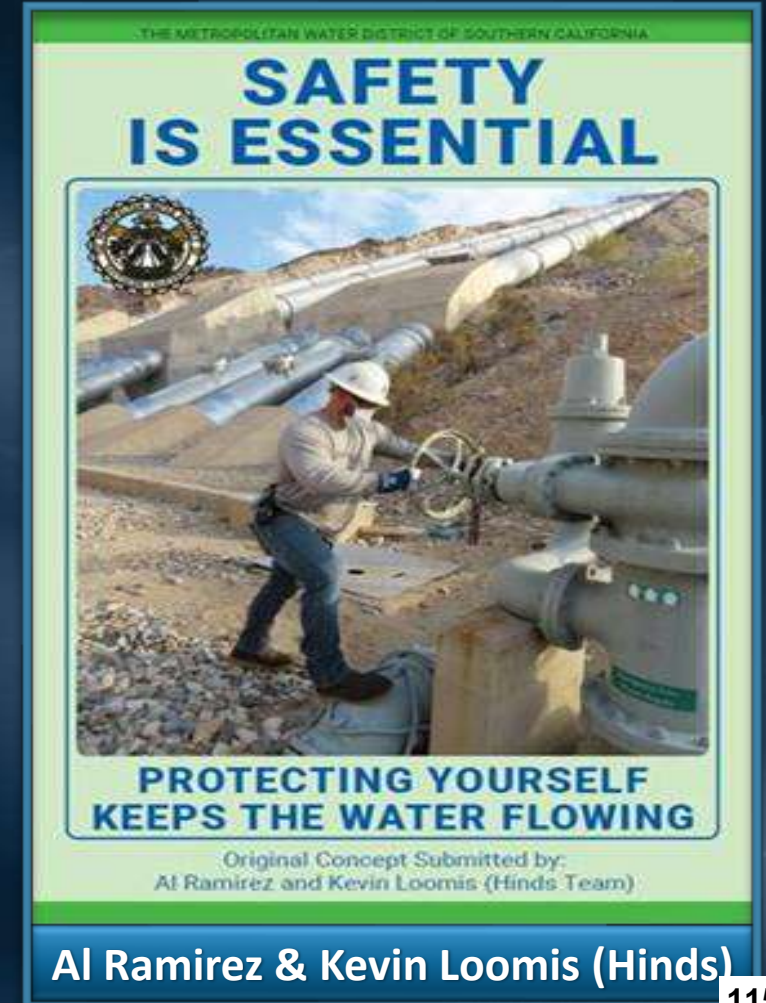
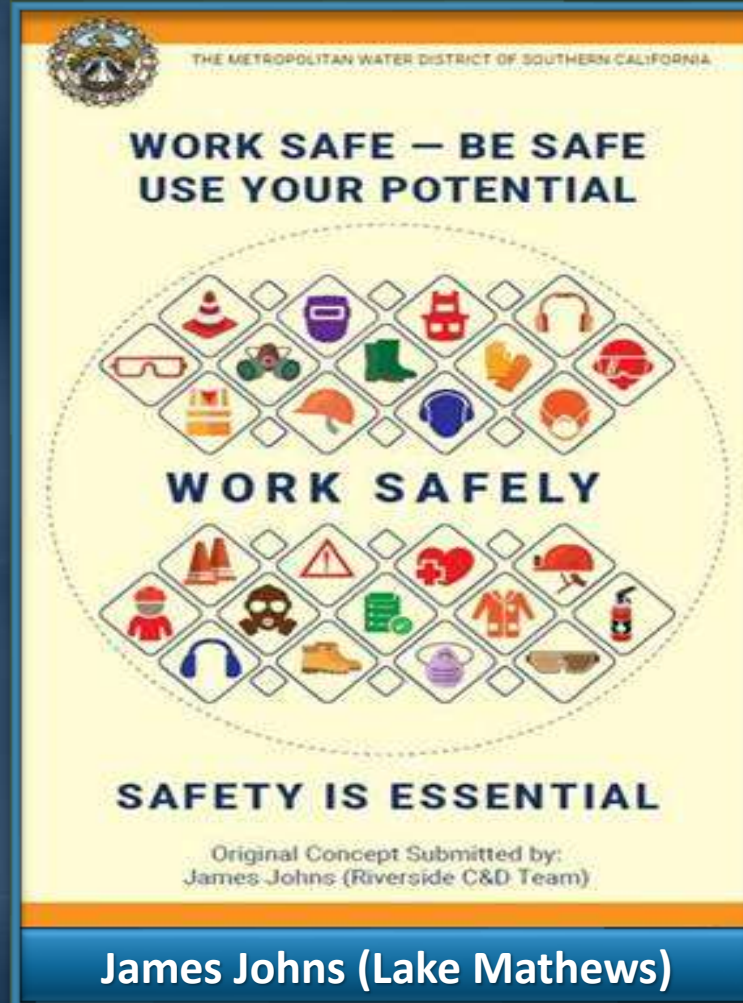
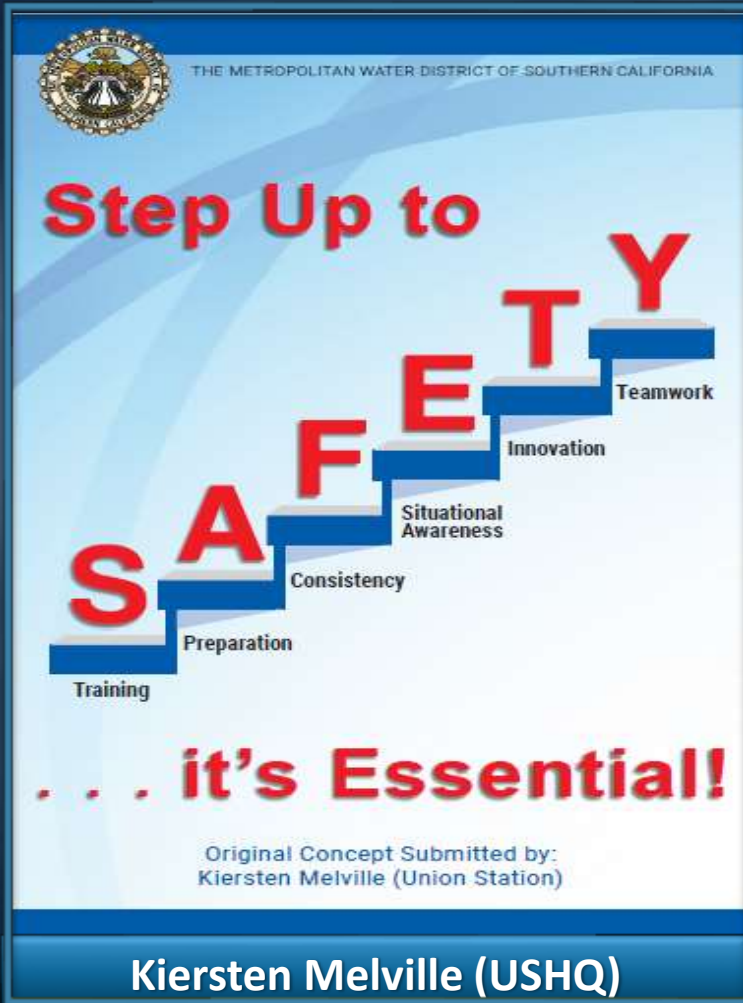
Original Concept



Final T-shirt Design



Runner-up T-shirt Designs Turned Into Safety Posters



Developed 12 New Safety Talks



"Speak Up for Safety" Campaign

MWD Safety Talk

Employee Environmental, Health & Safety Information for
Communicating Safety



Workplace Safety Culture

The strongest and most effective safety cultures are those where safety is a shared responsibility by everyone.

"Speaking up for safety" is the rule of thumb at Metropolitan. Everyone is empowered to speak up about safety issues without fear of reprisal. We all need to be respectful, objective, open-minded, understanding and patient when listening to each other's point of view, concerns, and suggestions.

Why We Stay Quiet

So often, it seems so much easier to sit back and say nothing.

- We feel that it is someone else's responsibility to speak up.
- We assume that others are too experienced to put themselves at risk.
- We fear being judged or ridiculed by others for speaking up.
- We fear repercussions from others, and from our managers.



But by not speaking up we become part of the problem, rather than part of the solution. Communicating a safety concern gives us the opportunity to fix it and continue to improve safety.

Reasons to Say Something

1. **Silence is deemed as approval.** We may think that keeping quiet keeps us from being involved in any conflict or problem, but it is quite the opposite. Staying quiet means that we are OK with the situation, even when we know or suspect it may be wrong.
2. **No one else may realize the issue.** When we notice a hazard that could cause an accident, we cannot assume what is obvious to you is obvious to others. Our experience and knowledge may have value in each situation because no one else has our unique perspective.
3. **You may not be alone in your concerns.** It is possible that your observations and conclusions are shared by others, but they are also unwilling to speak up. By speaking up first, you may give others the confidence to also speak up and voice their concerns and opinions as well.

"Speak Up to be Part of the Solution"

Examples of Valuable Input

We value everyone's input in safety. We strive to provide a work environment that encourages open communication of health and safety (H&S) issues without fear of reprisal. Below are some examples of H&S items that we encourage employees to communicate.

- New or previously unrecognized hazards.
- Safety concerns, issues, and deficiencies.
- Safety improvements, suggestions, and solutions.
- Accidents, injuries and near misses.
- New substances, processes, procedures or equipment that can potentially introduce a new hazard.
- Work assignment concerns due to lack of:
 - Planning and/or job hazard assessment
 - Safe work practices/procedures
 - Specialized equipment
 - Personal protective equipment
 - Specific initial or refresher training

Communication Methods

Metropolitan has many methods of open communication where employees are encouraged to speak-up and not be afraid of retaliation, judgement, or ridicule. We encourage employees to comfortably use any of the avenues of communication as follows:

- Planning, toolbox and other safety meetings.
- Management and supervisors.
- Local Safety Committee.
- Site SRS Representatives or other SRS Staff.
- Confidential Hotline - (213) 217-5504 or Extension 75504



Speaking Up

When speaking up, employees need to be respectful and mindful of the following when bringing issues to light:

- **Be Specific.** Make sure you are clear on what are your concerns.
- **Be Objective.** Focus on the facts. Do not let personal issues get in the way.
- **Provide Solid Reasoning.** What is the safety concern? What are the possible consequences if not addressed?
- **Offer Different Solutions.** Add your ideas of how to correct the issue of concern. What safety improvement does it offer? What other benefits does it bring?

**By speaking up, you become part of the solution.
When listening, be respectful, patient, and seek to understand.**





Initiative - Further Safety Partnership with Engineering for Capital Projects

- Engineering Safety Liaison
 - Engage starting in early planning stages for capital projects
 - Participate in quarterly collaboration meetings
 - Serve as safety professional for Resident Engineers on construction projects
- Safety Inspections
 - Routinely visit construction sites to identify and resolve safety issues



Gene Wash Cone Valve Replacement



Garvey Erosion Protection



USHQ Upgrades

Further Safety Partnership with Engineering for Capital Projects

- Contractor Safety
 - Review contractor submittals
 - Provide contractors guidance and training on facility safety hazards
- New Initiative
 - Develop a comprehensive list of contractor-required safety documents



Lake Mathews Upgrade



Garvey Hypochlorite Feed System Upgrade



Initiative – Performance Indicator & Goals

Performance Indicators

Updated Goals

Leading
Indicators

Near-Misses Reported	% Completed Year over Year
Mandatory Safety Inspections	90% Completed
Mandatory Training	90% Completed
Job Safety Hazard Checklists	% Completed Year to Year
Toolboxes	90% Completed

Lagging
Indicators

Near-Miss Corrective Actions	% Completed
Recordable Injuries/Illnesses	Zero
Cal/OSHA Citations	Zero



Initiative - Strengthen Partnership with Employees and Bargaining Units

- Facility Safety Committees
 - Meet at least quarterly to review safety inspections reports, injuries and near-misses, and the status of safety suggestions
- Safety Committee Forum
 - Safety Committee Chairs from each facility meet semi-annually to share safety-related concerns and solutions
- Labor/Management Safety Committee
 - Leadership from AFSCME Local 1902 and Management meet bimonthly to discuss new safety laws and regulations and MWD-wide safety concerns and solutions

Safety Committees' Accomplishments



Mills Upgraded Life Rings



Diemer Leak Diapers



Jensen Bollard Visibility



Infrared
Scan Port

Diemer High Voltage Scan
Port Installation



Mills Replaced Plastic Grate with
Steel Grating



Weymouth Curb Painting



Diemer Chains replaced with Swing
Gate

Safety Forum Accomplishment

Problem: Small chlorine releases from control valves posed a minor safety hazard and required notifications

Solution: Install Vent Exhaust Gas Arrestors (VEGA)

Results:

- Neutralizes up to 3 pounds of chlorine
- Eliminated leaks from vacuum control valves



Labor-Management Committee Accomplishments

Vehicle Towing Capacity & Trailer Weight


Vehicle Towing Capacity

Vehicle No: **50014450**

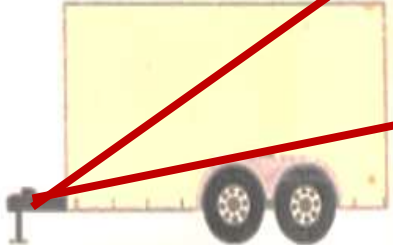
Certificate Date: **9/29/2020**

Vehicle Type: Utility Truck

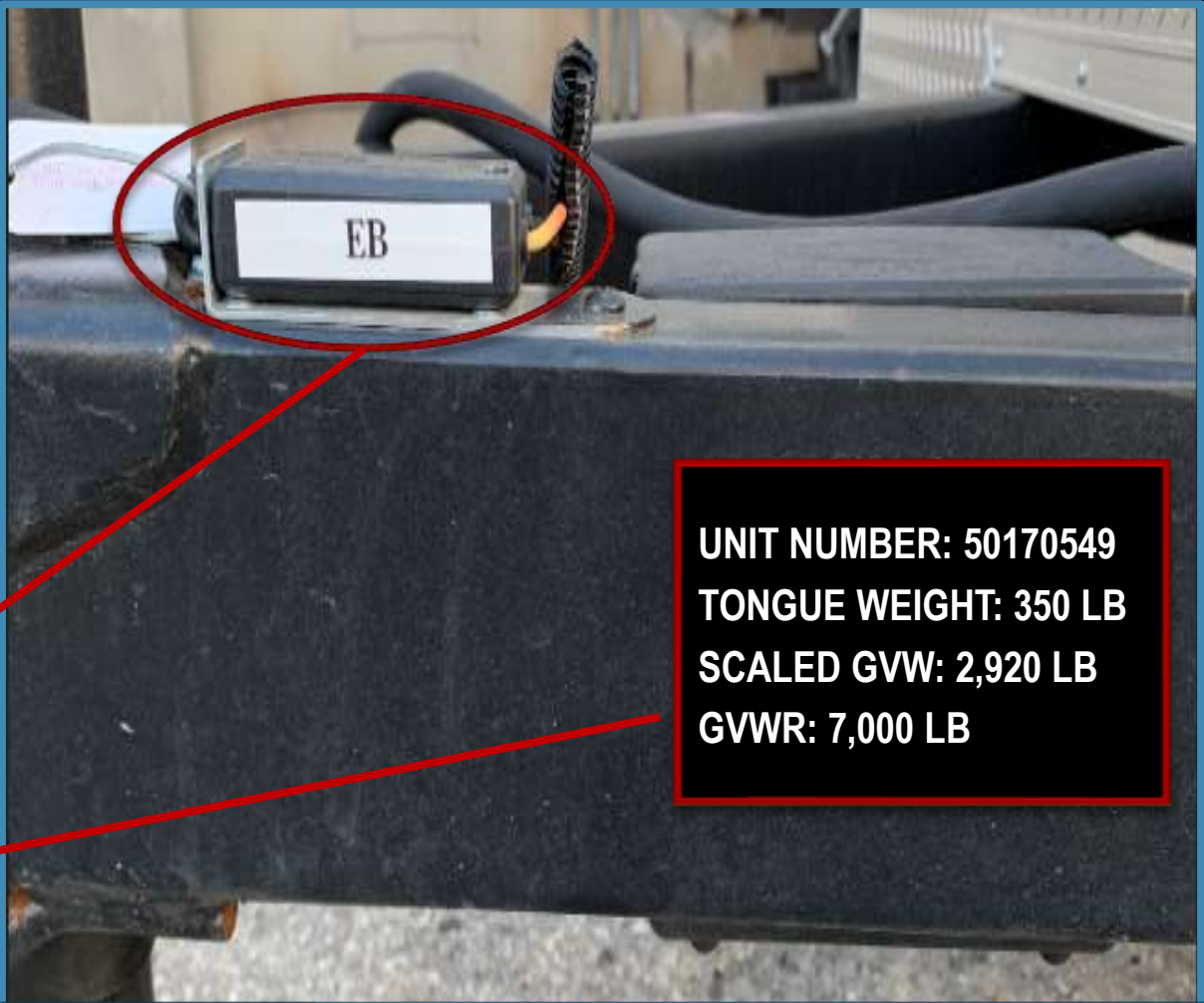
Tow Vehicle	
Factory GVWR	13,000
Loaded/Modified GVRW	10,900



Trailer	
Maximum Tongue Weight	1,200
Maximum Towing Capacity	12,000



Vehicle Towing Capacity Card Placed in Sun Visor



Trailer Tongues Marked with Trailer Weight and EB 1168

Labor-Management Committee Accomplishments

Safety Device for Hinged Substructure Access Lids

- Partnership with C&D Safety Committee, Safety, Engineering, La Verne Shops



Available in MWD Warehouse



Lid Prop with Lock Pins



Initiative - Conduct Third-Party Safety Program Assessment

- General Manager announced the Safety Culture Assessment
- On November 1, the NSC sent a confidential survey to all employees to assess safety culture and perceptions
- Coordinated with AFSCME Local 1902



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Date: October 28, 2021
To: All Metropolitan Employees
From: Adel Hagekhalil, General Manager
Subject: Safety Culture Assessment for Metropolitan



National Safety Council

Founded in 1913, NSC is a non-profit, non-governmental organization— the oldest and largest safety organization in the U.S.

“We are one” and ensuring the safety of all Metropolitan employees is our top priority. I am proud of our safety program, and we are continuing to look for opportunities to improve. We are excited to be partnering with the **National Safety Council (NSC)** to conduct a *Safety Culture Assessment* for Metropolitan. Founded in 1913, the NSC is a non-governmental, not-for-profit, membership organization—the oldest and largest safety organization in the U.S.

Safety Program Assessment Process

All-Employee Survey Completed

- 75.5% employee participation
 - Survey results benchmarked against 1,490 organizations
 - Survey used to prioritize focus areas for review

Six Safety Performance Categories

Organizational
Climate

Supervisor
Engagement

Safety
Support
Climate

Employee
Involvement

Safety
Support
Activities

Management
Commitment

“MWD has a very strong existing Organizational Climate foundation to build upon”

***“Management needs to set and communicate safety goals;
Insist supervisors think Safety First”***

Safety Program Assessment Next Steps

Schedule



Health and Safety Program



Management Commitment



2021 Initiatives Update

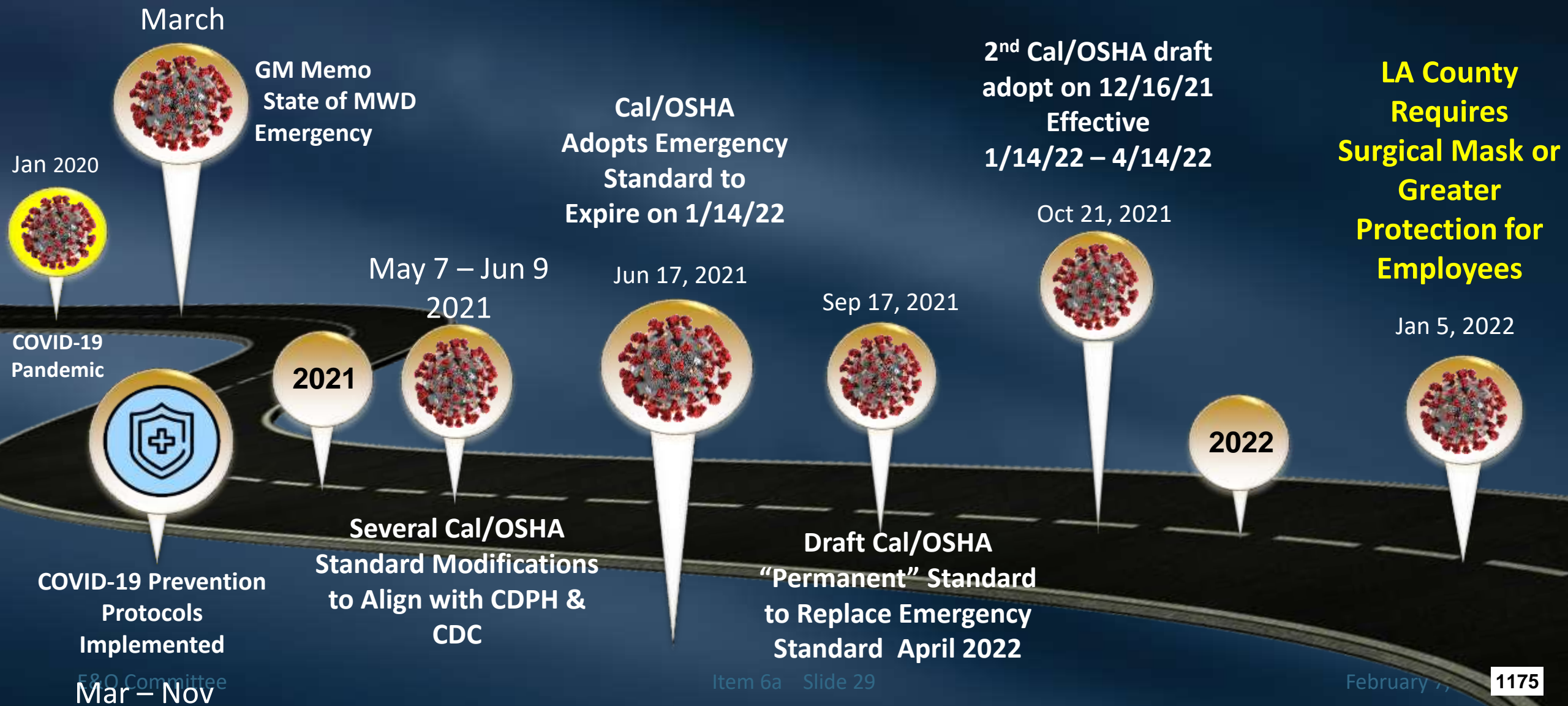


COVID-19 Response



2022 Key Focus Areas

Continued Tracking of COVID-19 Regulations



Continuing COVID-19 Prevention Measures

- Updated Indoor Mask Requirements
(No Cloth Masks Allowed)
 - Surgical, KN95, or N95
- Regulatory requirements now emphasizing self-monitoring for COVID-19 symptoms and quarantining
- Considering options for onsite or at-home testing if needed



Continuing COVID-19 Prevention

Healthy Indoor Air Quality Management



Increased Outside Air



Increased Filtration



Running HVAC Longer



UV Disinfection



Portable Filtration

Health and Safety Program



Management Commitment



2021 Initiatives Update



COVID-19 Response



2022 Key Focus Areas

2022 Key Focus Areas

- **Reduce Injuries**
 - **Increase employee engagement to create a safer environment**
 - **Improve collaboration and communication on safety with all Metropolitan work groups**
- **Complete the National Safety Council Review**
- **Ensure Safe Return to USHQ and Other Facilities**
- **Focus on Safety Staff Succession Planning**





Source Water Protection Update

Engineering and Operations Committee
Item 6b
February 7, 2022

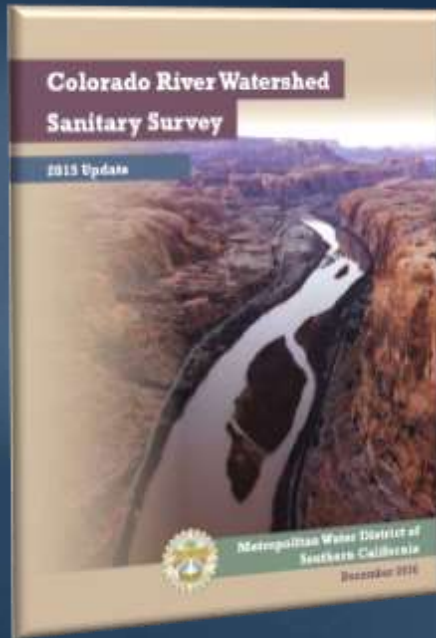
Source Water Protection

- *Water Quality's Mission*
 - *To safeguard the public's drinking water*
- *Multi-barrier approach to protecting public health*
 - **Source Water Protection**
 - *Water Treatment*
 - *Distribution System Integrity*
 - *Monitoring*



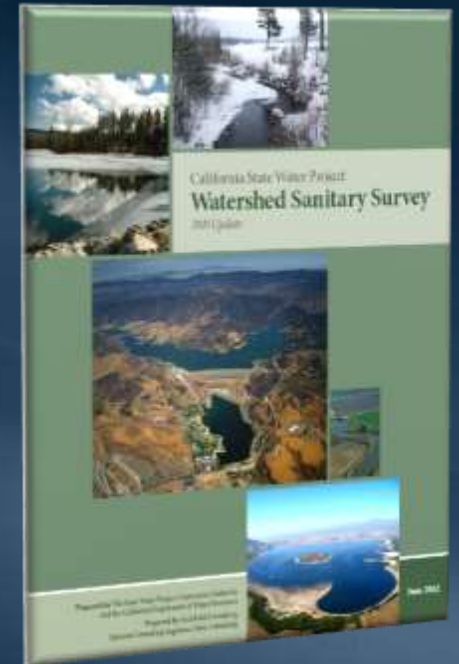
Watershed Sanitary Surveys Updates

- California's Surface Water Treatment Rule requires public water systems to conduct a sanitary survey of its watershed(s) every 5 years



To be submitted by
April 1, 2022

- Description of watershed
- Regulatory review
- Water quality analysis
- Contaminant sources
- Watershed management
- Recommendations



To be submitted by
June 30, 2022

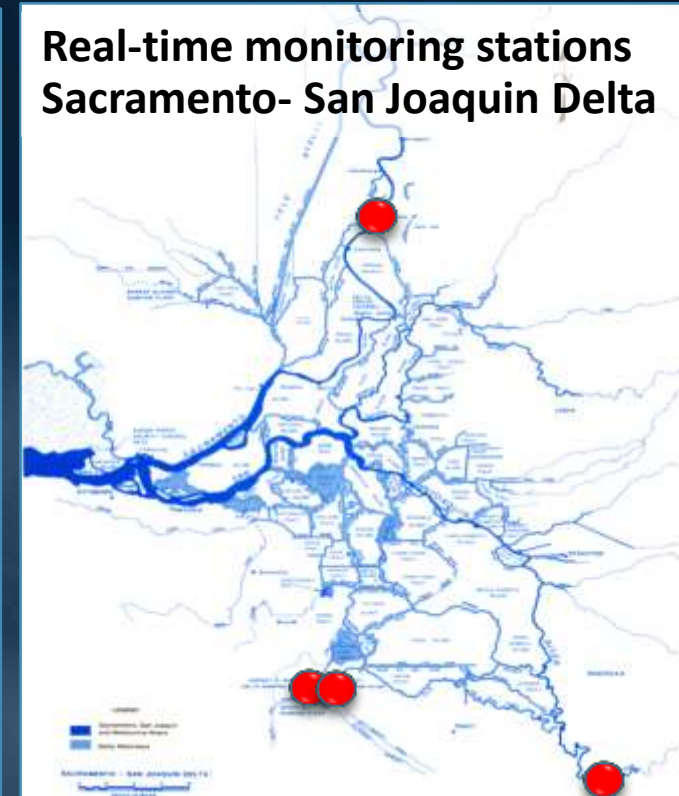
State Water Project – Water Quality Challenges

- Pesticides and Herbicides
- Arsenic
- 1,2,3-Trichloropropane
- Nutrients
- Invasive Species
- Chemicals of Emerging Concern
- Pharmaceutical and Personal Care Products
- Total Organic Carbon
- Bromide
- Alkalinity
- Pathogens



Municipal Water Quality Investigations (MWQI) Program

- Established in 1990
- Funded by participating State Water Contractors
- Benefits
 - Monitoring and sampling
 - Water quality forecasting
 - Database management
 - Scientific studies
 - SWP Sanitary Survey



Aquatic Vegetation Management

- Aquatic vegetation in the Delta has increased
 - Vegetation is problematic for operations
 - Herbicides are used for control
 - Potential endothall residual concentrations downstream
- Studies conducted to evaluate endothall degradation
- Department of Water Resources optimizing endothall application



State Water Project Pump-In Programs

- Supplement demand during low SWP allocation years
- Monitor pump-in water quality
 - Nutrients
 - Arsenic
 - 1,2,3-Trichloropropane
- Ensure constituents do not exceed regulatory limits
- Participate in State Water Contractor Facilitation Group for non-project water



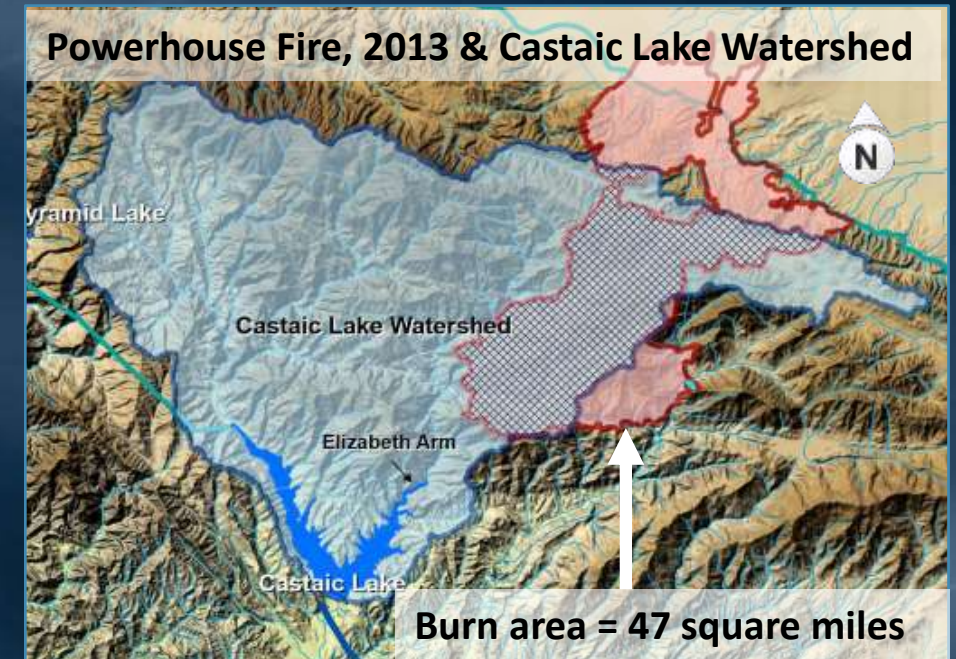
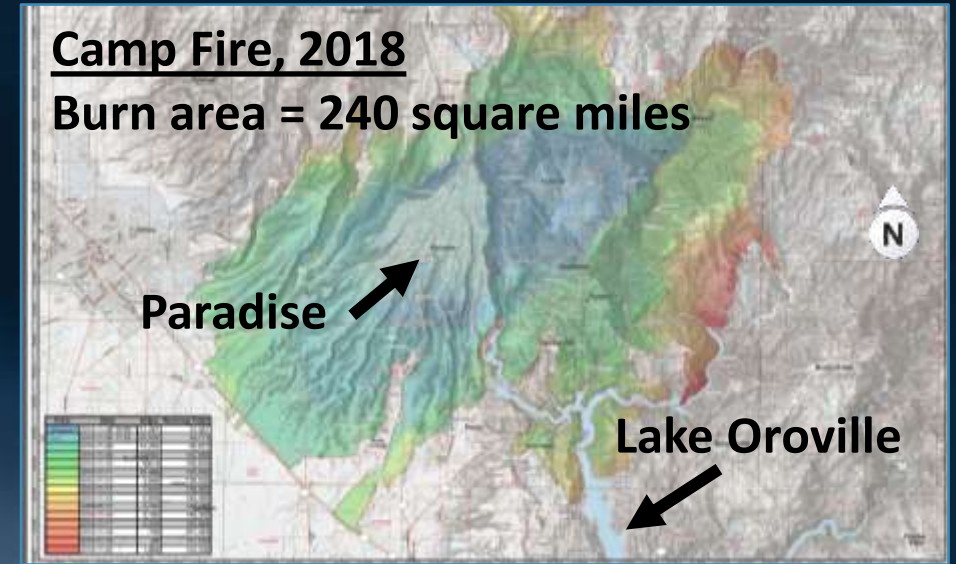
Pump-in along CA Aqueduct



Arsenic treatment of pump-in water 1187

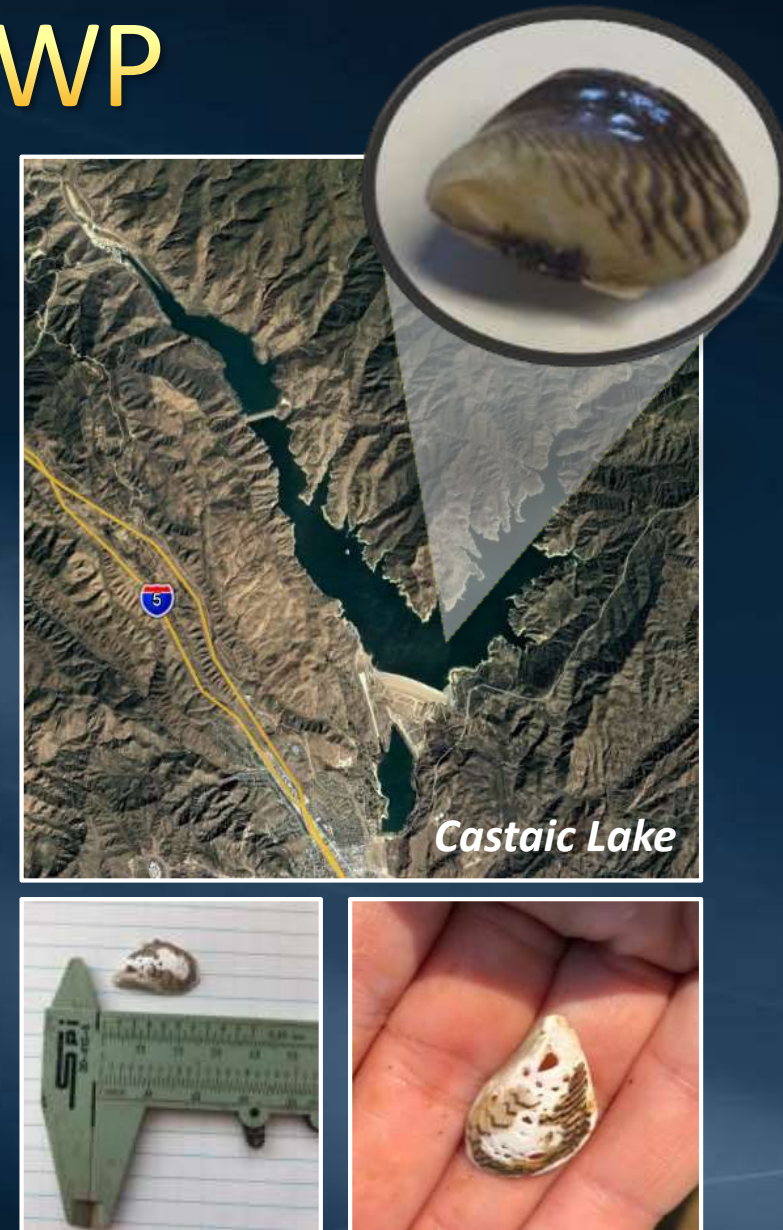
Wildfires and Watersheds

- Fires can encroach on watersheds of source waters
 - Burn protective vegetation
 - Increase sediment nutrient loading
- Mitigation and prevention measures
 - Prescribed burns
 - Monitoring
 - Treatment optimization when necessary
 - Stakeholder collaboration



Quagga Mussels in the Southern SWP

- A few invasive quagga mussels discovered
 - December 2016- Pyramid Lake
 - August 2021- Castaic Lake
- No evidence of widespread infestation
- DWR increased boat inspections at Castaic
- Currently no impact on water operations



Photos courtesy of DWR

Colorado River – Water Quality Challenges

- Uranium
- Perchlorate
- Chromium-6
- Salinity
- Pathogens
- Chemicals of Emerging Concern
- Pharmaceutical and Personal Care Products
- Invasive Species



Colorado River Basin

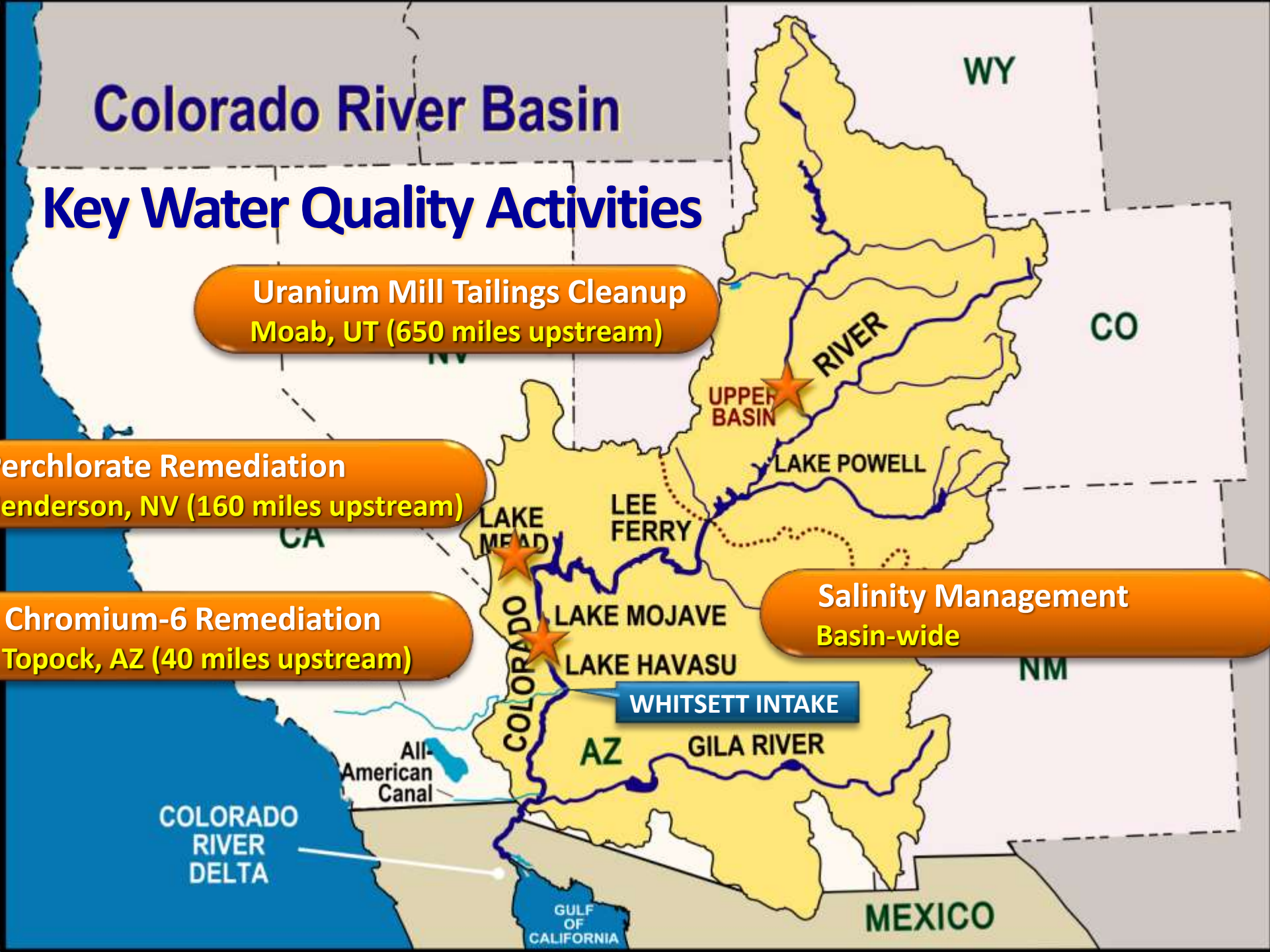
Key Water Quality Activities

Uranium Mill Tailings Cleanup
Moab, UT (650 miles upstream)

Perchlorate Remediation
Henderson, NV (160 miles upstream)

Chromium-6 Remediation
Topock, AZ (40 miles upstream)

Salinity Management
Basin-wide



Uranium Mill Tailings Cleanup

- 16-million-ton pile of uranium mill tailings in Moab, UT near Colorado River
- Tailings removal and disposal began 2009
 - 12.1 million tons removed to date
 - Target completion in 2030s
- Metropolitan continues to advocate for funding for an expeditious cleanup



Perchlorate Remediation

- Historical perchlorate plumes in Henderson, NV
 - First detected in 1997
 - Perchlorate CA MCL is 0.006 mg/L
- Perchlorate levels below detection limit at Whitsett Intake
- Over 6,000 tons of perchlorate removed
- Nevada Environmental Response Trust developing long-term remedy



Perchlorate Regulatory Update

- Federal (USEPA)
 - July 21, 2020 – Decision to not regulate perchlorate
 - Jan. 20, 2021 – USEPA under executive order to review this final determination
- California (SWRCB)
 - July 1, 2021 – Detection Limit for Purposes of Reporting (DLR) reduced from 0.004 mg/L to 0.002 mg/L
 - Jan. 1, 2024 – Future DLR reduction to 0.001 mg/L



Chromium-6 Remediation

- Found in groundwater at PG&E site next to Colorado River near Topock, AZ
 - Total chromium CA MCL is 50 ppb
 - Chromium-6 is non-detect in the river
- Long-term remedy construction underway
 - Bio-remediation system
 - Estimated completion in 2025
 - Full system startup in early 2026
- New draft MCL value expected in 2022



Salinity Management

- Salinity sources in basin
 - Prehistoric salt deposits
 - Human activity (irrigation/discharges)
 - 9 million tons of salt pass through Hoover Dam
- Colorado River Basin Salinity Control Program
 - Canal lining
 - Improved irrigation systems
 - Deep-well brine injection (Paradox Valley Unit)
- 1.2 million tons/year removed → 100 mg/L reduction



Lower Colorado River Water Quality Partnership

- MOU to coordinate and collaborate on water quality issues of mutual interest
 - Metropolitan
 - Southern Nevada Water Authority
 - Central Arizona Project
- Share water quality data and information
- Jointly advocate for source water protection



Metropolitan's Continuing Actions to Protect Source Waters

- Understand watersheds and sources of contamination
- Monitor and track watershed changes
- Proactively monitor source water quality
- Assess impacts on treatment
- Collaborate with partners
- Engage in legislative and regulatory processes
- Advocate for protecting source waters







Water System Operations Manager's Report

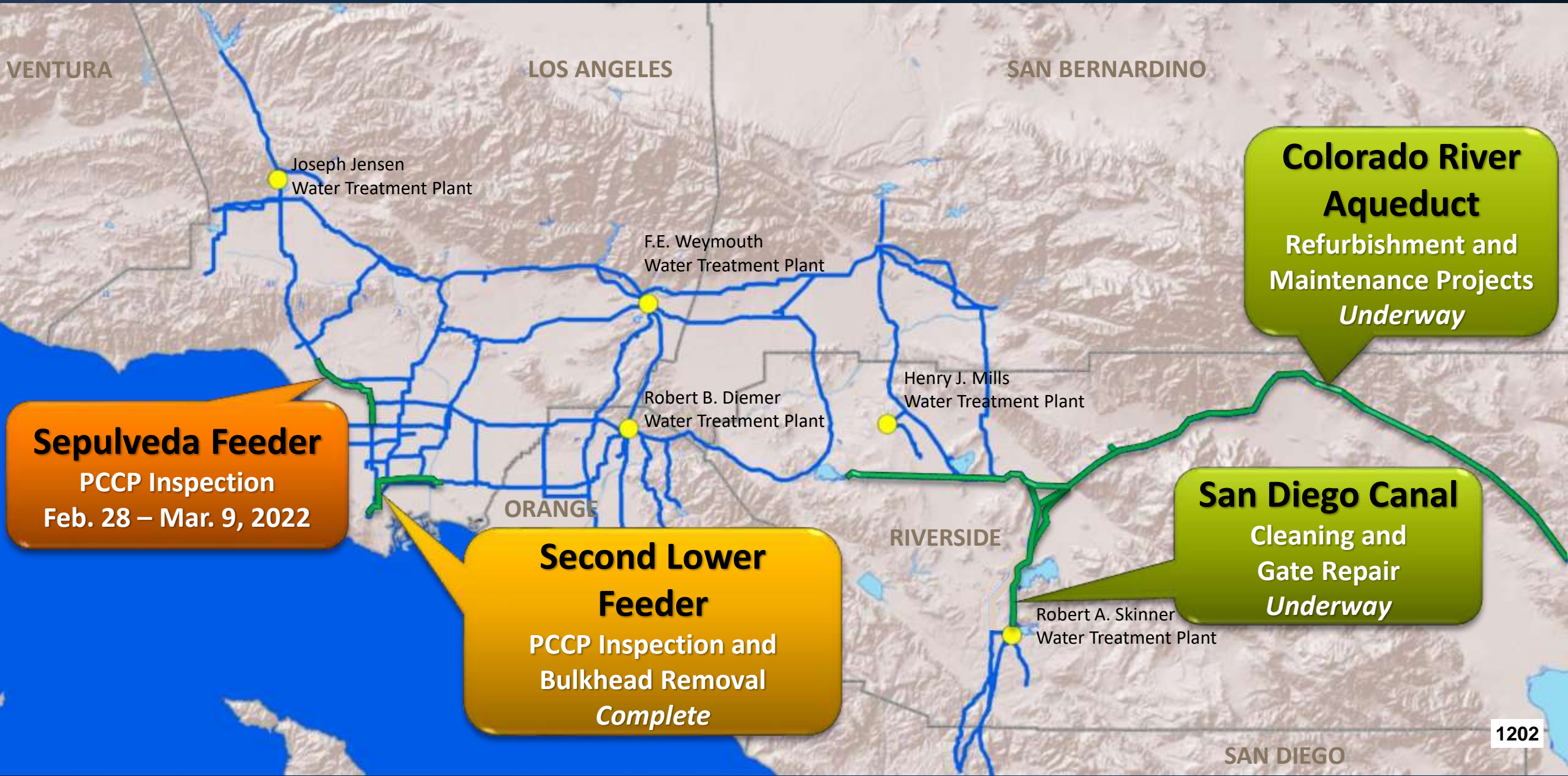
Engineering and Operations Committee
Item 7a

February 7, 2022

Current Operational Conditions

- 2022 SWP Allocation is 15%
- SWP blend targets are 0% at Weymouth, Diemer, and Skinner plants
- CRA is at 0-pump flow with the CRA shutdown underway
- DVL to Mills drought operation continues to perform well
- Managing storage based on WSDM principles
- January 2022 deliveries of 91 TAF were 3 TAF lower than January 2021

Ensuring Continued System Reliability



Ensuring Continued System Reliability



Sepulveda Feeder

PCCP Inspection

Feb. 28 – Mar. 9, 2022



Staff Welding
Lifting Eyes



Staff Removing
Bulkhead



PCCP Inspection
Equipment

Second Lower Feeder

PCCP Inspection and
Bulkhead Removal
Complete

Colorado River Aqueduct

Refurbishment and
Maintenance Projects
Underway

San Diego Canal

Cleaning and
Gate Repair
Underway

Ensuring Continued System Reliability

Second Lower Feeder PCCP Inspection – Innovative Condition Assessments



Placing the PipeDiver, setting up the catch net, and removing the PipeDiver

Responding to High Wind Event

Intermittent Power Interruptions – January 22, 2022

● Jensen

- No impact to water quality
- Operators lost connection to control system data for two hours due to UPS failure impacting servers
- Incident Command Post activated and additional on-site operators deployed
- Staff quickly responded and power connection to control system restored
- Additional power connection improvements being evaluated

● Weymouth

- No impact to water quality
- Power blips impacted ozone system; emergency disinfection activated and plant transitioned to chlorine for primary disinfection

Responding to High Wind Event

Property and Facility Impacts



Fallen tree at Weymouth plant
near solar panels



Fallen tree near Water Quality Lab

Responding to High Wind Event

Property and Facility Impacts



Fallen tree blocking Rialto Pipeline access road



Fallen tree in Rialto Pipeline right-of-way

Responding to High Wind Event

Property and Facility Impacts



Fallen trees at Live Oak Reservoir



Fallen tree near CENB-48 service connection





Engineering Services Manager's Report

Engineering and Operations Committee
Item 7b
February 7, 2022

Construction and Procurement Contracts

December 2021

Construction & Procurement Contracts Through December 2021	
Number of Contracts at end of December 2021	39
Total Bid Amount of Contracts in Progress at end of December 2021	\$282M
Contracts Awarded in December 2021	2
Contracts With Notice To Proceed Issued in December 2021	5
Contracts Completed in December 2021	2
Contract Gross Earnings in December 2021	\$5.2M

Tariff Rebates to Metropolitan

- Tariffs imposed on imported steel in 2018 & 2019
- Tariff exemptions/rebates approved - 2022
- Metropolitan has recently received \$960K in tariff rebates from two contracts
 - Contract 1940 - Second Lower Feeder PCCP Rehabilitation - Reach 4
 - Contract 1925 - Furnishing Steel Pipe for the Second Lower Feeder PCCP Rehabilitation – Reaches 2 and 4

Upcoming Major Contracts – Thru June 2022

Contract Title	Planned Contract Award	Estimated Contract Value
La Verne Shop – Stage 4 Bldg. Completion & Equipment Installation	April 2022	\$12.0 M
Orange County Feeder Relining – Reach 3	April 2022	\$11.0 M
Second Lower Feeder PCCP Rehab – Reach 3A	May 2022	\$16.0 M
Weymouth Basins 5-8 & Filter Building No. 2 Filter Valve Replacement	May 2022	\$70.0 M
Etiwanda Pipeline Relining – Stage 3	June 2022	\$20.5 M
Perris Valley Pipeline – Tunnels	June 2022	\$66.0 M

2022 CRA Shutdown CIP Projects

CRA Mile 12 Flow Monitoring Station Upgrades Project

- On-Going Tasks:
 - Excavation for the electrical grounding circuit and rods
 - Installation of the electrical grounding grid
- Shutdown Activities:
 - Installation of flow meter transducers in aqueduct
- Contract Amount:
 - \$2,022,000 / Paid to Date: 4.5%



CRA 8-Pump Flow Project – Cholla Wash Conduit Relining

- Project Scope:
 - Reline 500 feet of cut-and-cover CRA conduit
- Project Objective:
 - Reduce potential for hydraulic pressurization of conduit during 8-pump flow
- Shutdown work:
 - Install lining system



Contractor Mobilization

CRA 8-Pump Flow Project – Headgate Modification



Orifice Gate in fabrication for Iron Mtn Pumping Plant

CRA 8-Pump Flow Project – Pump Recirculation System at Eagle Mtn.



Recirculation Line Connections at the Eagle Mountain Pumping Plant

